

ENGAGE: Building a Network of Researchers, Teachers, and Community Partners to Support Mathematics Achievement

Research in Mathematics Education (RME)
Annual Conference
February 15, 2013



SMU.

ANNETTE CALDWELL SIMMONS
SCHOOL OF EDUCATION
& HUMAN DEVELOPMENT

CHANGING MINDS



Engaging the Business Community

improving student achievement in Mathematics

$$t=3.83$$
$$ht=45.00$$

$$f_1(x) = -3.12 \cdot (x - 3.83)^2 + 45$$

$$t=3.36$$
$$ht=36.00$$

$$f_2(x) = -3.26 \cdot (x - 3.36)^2 + 36$$

t =time (s)
 ht =height (in)

Richaed J. Schaar
Texas Instruments



Your Passion. Our Technology. Student Success.™

Engaging the Business Community

- What are the specific issues?
- Ability to commit sufficient resources?
- Willing to make the requisite changes?
- How sophisticated is the business?
 - Able to help design plans?
 - Able to understand the issues?
 - Eager to help but a novice?



TI's Educational Technology -Sophisticated

- A local district approached ET with an issue – the widening achievement gap between diverse student population.
- Analyzed the problem to determine an engagement point – Middle School
- Using research developed a multifaceted integrated comprehensive intervention.
- Implemented a pilot program applying appropriate research.



Intervention Outcomes

- Successful pilot with passing rates significantly higher.
- Program expanded to both more schools and higher grade levels.
- Research was ongoing and played a significant role in fine-tuning the program to insure success.
- MathForward™ is now a nation wide program and continues to expand.



{ CHANGE THE EQUATION }

– Novice Businesses

Nonprofit, nonpartisan, CEO-led initiative to improve the quality of science, technology, engineering and mathematics (STEM) learning in the United States .

- Major goal was to improving philanthropy emphasizing high quality, scalable programs
- Design Committee was establish to go through a three step program
 - Developed a set of principles for high quality, scalable programs
 - Developed a rubric for measuring such programs
 - Instituted a database of high quality, scalable programs



STEMworks

- Started in mid 2012 and currently contains 40 programs
- Must have a significant research component and a proven record of success
- Searchable on content area, program type, grade level, and target audience
- Several states have given up their work on such a database and will be using STEMworks.
- Will be expanded.



Engaging the Business Community

- The business community wants to be involved in STEM education in a meaningful way.
- Involvement can be successful in improving student achievement.
- Multiple pathways to success.
- Everyone has to learn from the process.
- Research can inform everyone



Words in Mathematics

We rarely hear anyone say "I can't read." However, it is not uncommon to hear someone say "I can't do math." Working together we can change that!



**THE CENTER ON COMMUNITIES
& EDUCATION
AT THE SIMMONS SCHOOL
FOCUSED ON ACADEMIC ACHIEVEMENT**



SMU.

ANNETTE CALDWELL SIMMONS
SCHOOL OF EDUCATION
& HUMAN DEVELOPMENT

CHANGING MINDS

SMU'S COMPELLING MISSION:

...shaping individuals to contribute
to their communities...





In 2011, DFCC and Simmons merged resources to create the **Center On Communities & Education** connecting research and practice



SMU

ANNETTE CALDWELL SIMMONS
SCHOOL OF EDUCATION
& HUMAN DEVELOPMENT

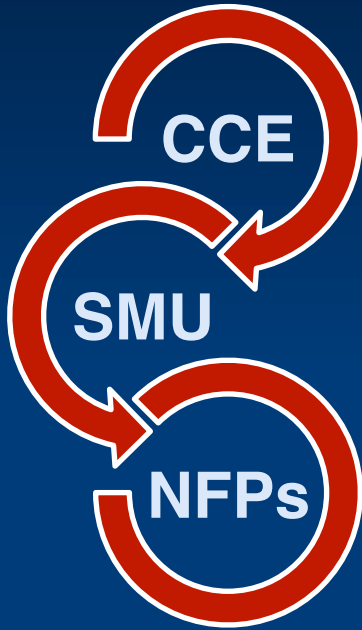
A POWERFUL OPPORTUNITY

- Engagement via research and programs
- Hands-on learning for SMU students
- A gateway to the city and to the university



SMU

ANNETTE CALDWELL SIMMONS
SCHOOL OF EDUCATION
& HUMAN DEVELOPMENT



CCE: Community development expertise

SMU: student and faculty volunteers

NFPs: 15,500 hours of student services every six weeks



CCE'S MISSION

Close the education gap by coordinating social services, using data to support academic success, and providing professional development in West Dallas schools; AND

Engage SMU faculty and students in transformative experiences in urban, low-income communities.



SMU.

ANNETTE CALDWELL SIMMONS
SCHOOL OF EDUCATION
& HUMAN DEVELOPMENT

OUR VISION

West Dallas is a thriving community where schools, families and businesses fulfill their potential.

OUR GOAL

West Dallas children have the educational tools they need to exit poverty as adults.



SMU

ANNETTE CALDWELL SIMMONS
SCHOOL OF EDUCATION
& HUMAN DEVELOPMENT

OUR STRATEGY

- Collaboration between nonprofits and SMU
- Evidence-based decision-making
- Relationships that support constant improvement

The result: a healthy West Dallas educational ecosystem



SMU.

ANNETTE CALDWELL SIMMONS
SCHOOL OF EDUCATION
& HUMAN DEVELOPMENT

OUR FIRST COMMUNITY: WEST DALLAS



Trinity River

Loop 12

Calatrava Bridge

West Dallas



CHALLENGE AND THE CHARGE



C.G. PINKSTON HIGH SCHOOL
E.C.P. EXAMS
EARLY RELEASE
TUESDAY-FRIDAY
12:55
BELLE MEURVILLE BOGGS DISTRICT

C. PINKSTON
HIGH SCHOOL



SMU

ANNETTE CALDWELL SIMMONS
SCHOOL OF EDUCATION
& HUMAN DEVELOPMENT

WHAT MAKES THE SCHOOL ZONE DIFFERENT?

- Data driven decision making
- A shared and collaborative strategy
- Coordinated efforts between sectors
- Targeted resources
- Participation of SMU faculty and grad students in academic interventions



SMU

ANNETTE CALDWELL SIMMONS
SCHOOL OF EDUCATION
& HUMAN DEVELOPMENT

WHY ENGAGE THE WEST DALLAS COMMUNITY IN MATH SUCCESS?

- 9th grade mathematics failure is a significant contributor to student drop-out
- High school failure has its roots in the earlier years
- Many teachers report being ill equipped to teach mathematics
- Most tutors “do homework” and are ill equipped to address scaffolding issues



SMU

ANNETTE CALDWELL SIMMONS
SCHOOL OF EDUCATION
& HUMAN DEVELOPMENT

WHAT WORKS FROM TSZ?

- Very limited data about what works from the community side; that is one of our objectives at SMU – test interventions, document outcomes
- Some early childhood programs - Pre-K Mathematics and Building Blocks for Math - do have impact
- Parents - Everyday Mathematics shows impact



SMU

ANNETTE CALDWELL SIMMONS
SCHOOL OF EDUCATION
& HUMAN DEVELOPMENT

HOW CAN TSZ PARTNER?

- NFP Partners – screening for early risk identification
- Tutors - shore up underlying structures/basic math facts (MAP and ADAM/DORA assessment tools)
- Mentors, tutors - motivational strategies
- NFP partners working with parents and schools - ongoing student and risk assessment



SMU

ANNETTE CALDWELL SIMMONS
SCHOOL OF EDUCATION
& HUMAN DEVELOPMENT

ADDITIONAL TSZ BENEFITS...

- Attendance – parents can make sure kids are at school and ready to learn
- Parent engagement in homework and out of school time – varying engagement styles are appropriate for different age groups; parent training teaches these skills



SMU

ANNETTE CALDWELL SIMMONS
SCHOOL OF EDUCATION
& HUMAN DEVELOPMENT

BENEFITS TO THE UNIVERSITY

- Applied research
- Access to DISD student data
- Competitive advantage in recruiting new math faculty
- Department & school collaboration
- Hands-on instructional opportunities



SMU.

ANNETTE CALDWELL SIMMONS
SCHOOL OF EDUCATION
& HUMAN DEVELOPMENT

OUR CURRENT PARTNERS

- The ARK Group
- AVANCE
- Brother Bill's Helping Hand
- Builders of Hope
- Catch-Up and Read
- Commit!
- Education is Freedom
- Dallas Area Habitat
- Marillac Social Center
- Mary Saner Child Development
- Mercy Street
- Readers2Leaders
- Salesmanship Club
- Serve West Dallas
- TRM (Trinity River Mission)
- VMLC - West Dallas
- Voice of Hope
- Watermark Community Church
- Wesley Rankin Community Center
- West Dallas Community Center



SMU

ANNETTE CALDWELL SIMMONS
SCHOOL OF EDUCATION
& HUMAN DEVELOPMENT


THANK YOU

THE CENTER ON COMMUNITIES & EDUCATION
AT THE SIMMONS SCHOOL



SMU.

ANNETTE CALDWELL SIMMONS
SCHOOL OF EDUCATION
& HUMAN DEVELOPMENT



Engaging All Stakeholders to Increase Student Achievement in Mathematics

Jill Speckert

Strengths

- Creates a united team of stakeholders
- Builds awareness of current content, strategies and resources

Possible Obstacles

- Takes time
- Involves planning and preparation
- Stakeholders must join your efforts
- Resistance

Despite the possible obstacles, it is what is right for our students.

Family Math Night

- ✓ Engage the entire family in Math activities
- ✓ Educate families on current content and strategies
- ✓ Create a supportive learning environment

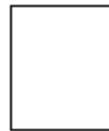
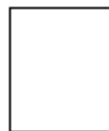
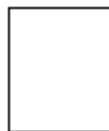
Standards-Based Bulletin Boards

Standard being addressed

Description of the Task

Rubrics

Samples of student work which meets the standard - with teacher commentary



Campus Based Mentor Program

- Paired students with an adult in the community
- Met weekly
- Mentors set and monitored goals with students
- During visits they participated in a math activities based on current curriculum

Additional resources to support stakeholder involvement

- Curriculum websites
- Student editions and supplemental materials
- Parent letters
- Pictures of anchor charts from the classroom
- Rubrics and grading procedures

District Initiatives

- Ambassador Program
- Communicating with parents of children birth to school age
- Campus Preview nights

ENGAGE: Building a Network of Researchers, Teachers, and Community Partners to Support Mathematics Achievement

Thank you!



SMU.

ANNETTE CALDWELL SIMMONS
SCHOOL OF EDUCATION
& HUMAN DEVELOPMENT

CHANGING MINDS