

Teachers First. Everything Else Follows.

NCSM 2018 - 50th Anniversary



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What years?

“...although many innovative materials were developed in the late _____s and early _____s, classroom use was spotty because innovators tended to overlook teachers. They failed to appreciate teachers’ need to learn in order to use new materials...”

“...although many innovative materials were developed in the late 1950s and early 1960s, classroom use was spotty because innovators tended to overlook teachers. They failed to appreciate teachers’ need to learn in order to use new materials...”

Deborah Loewenberg Ball & David K. Cohen

(1996) "Reform by the Book: What Is: Or Might Be: The Role of Curriculum Materials in Teacher Learning and Instructional Reform." *Educational Researcher* 25 (9).

What year?

“Mathematics education in the United States is currently in a state of ferment: new standards and policies have been promulgated, new teaching materials are being prepared, and new assessment measures are being debated.

“But if all this activity is to result in a transformed mathematics instruction, it must be acknowledged—programmatically, in a serious commitment to teacher development—that, in the end, it is the classroom teacher who will interpret these standards and policies, who will decide how the new curricular materials are to be used.”

1993

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Deborah Schifter and Cathy Fosnot

Reconstructing Mathematics Education: Stories of Teachers Meeting the Challenge of Reform

What year?

“Most reformers...have argued that schools need to be shaped up with stronger academic standards, stiffer state tests, and accountability for students scores.

“Our research shows that these efforts are unlikely to succeed broadly by themselves. Standards, assessments, and accountability are more likely to succeed if they are accompanied by extended opportunities for professional learning that are grounded in practice. That is not easy...”

2008

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David K. Cohen & Heather Hill

Learning Policy: When State Education Reform Works

Are we ready to hear this message yet?

Standards

Curriculum

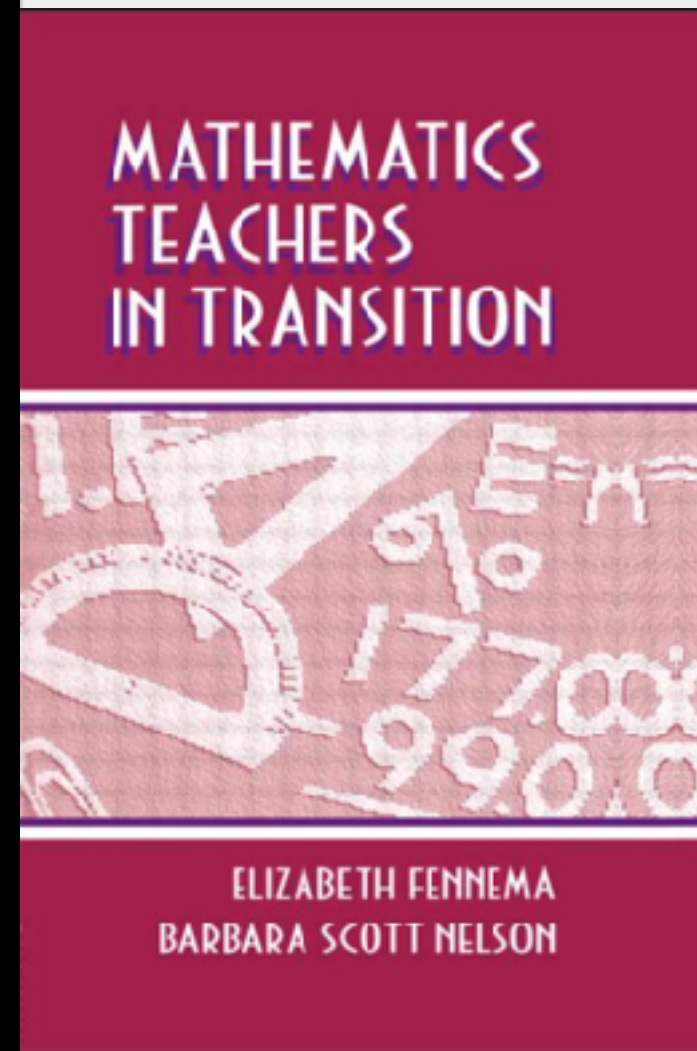
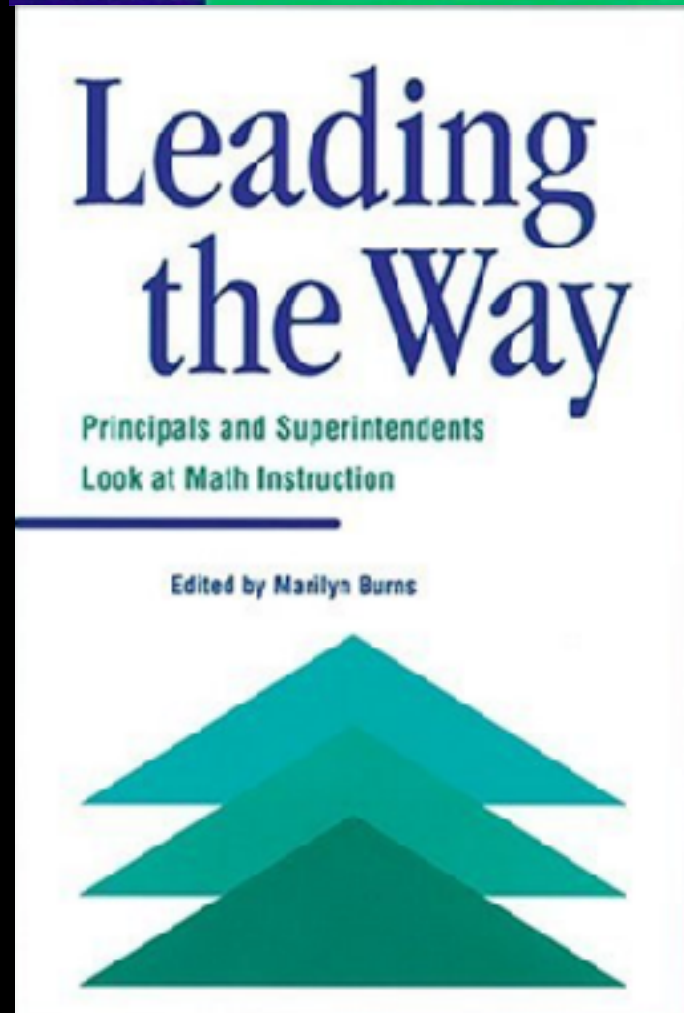
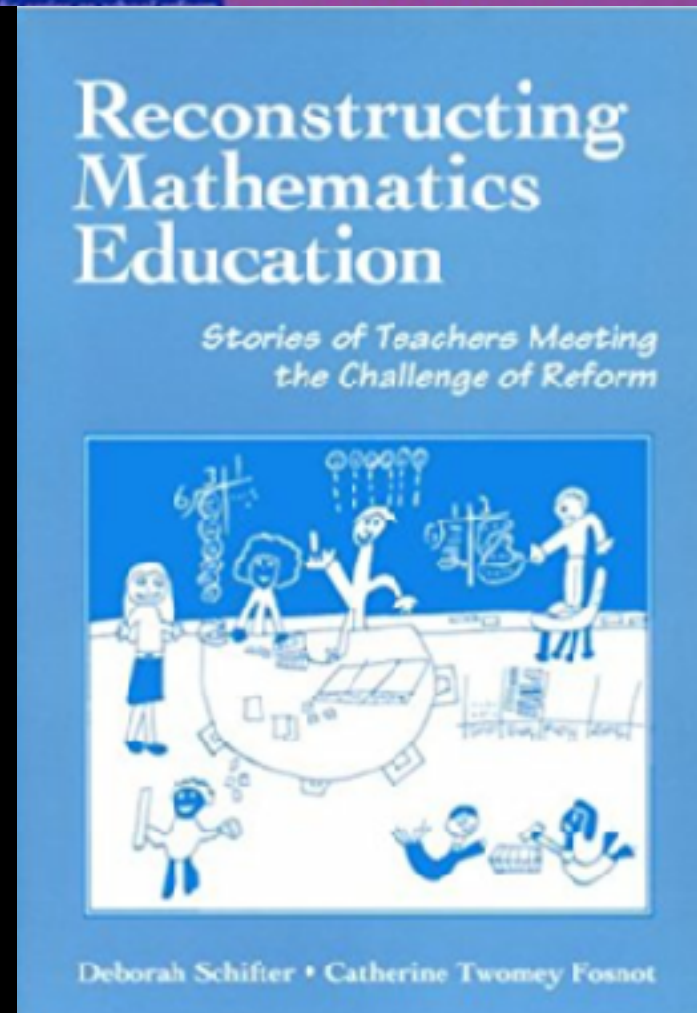
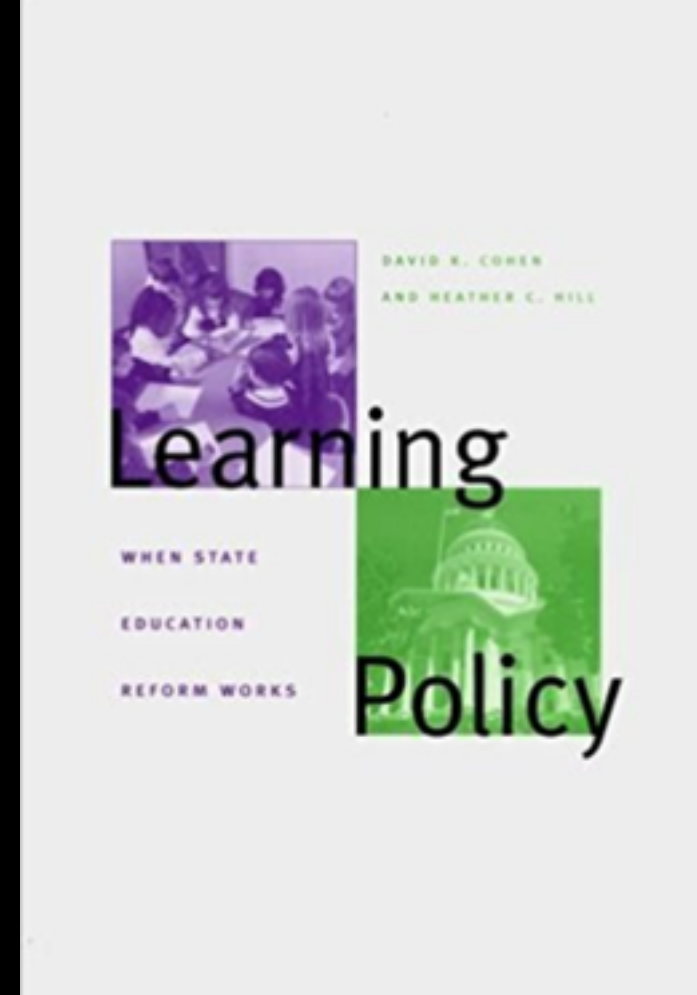
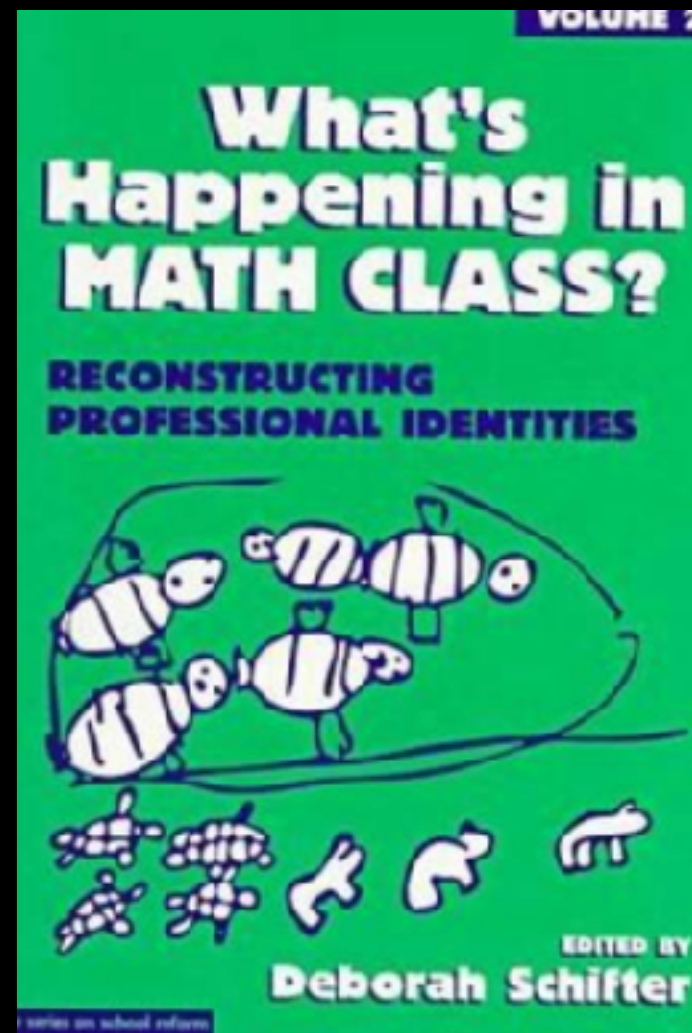
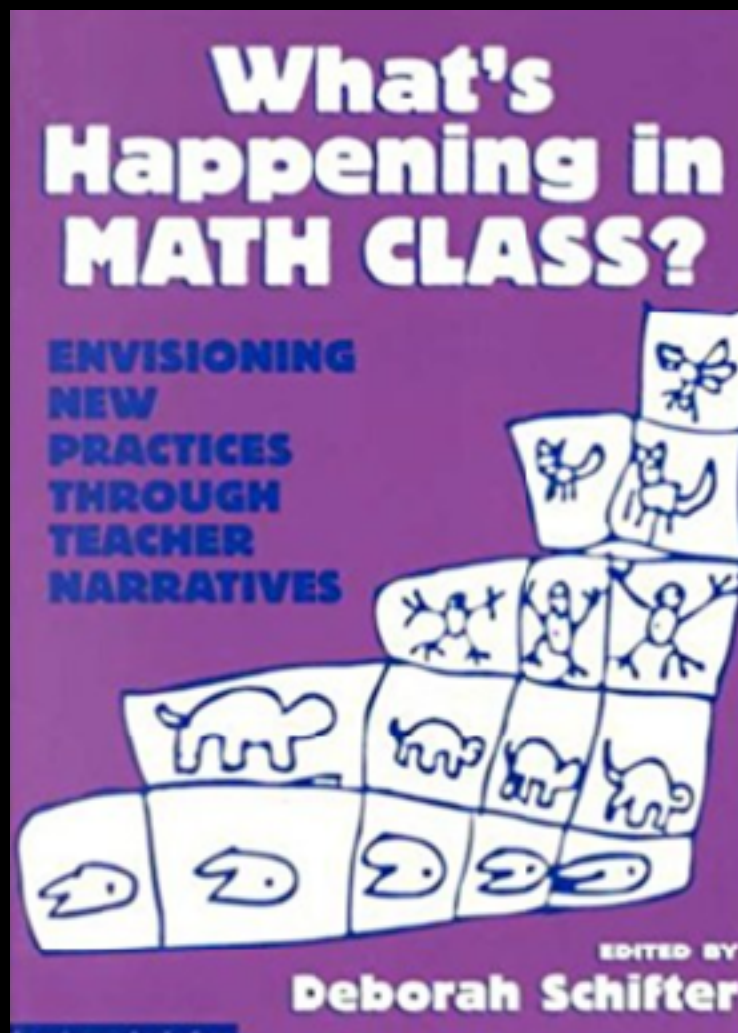
Testing

Standards

Teachers
Students
Teaching

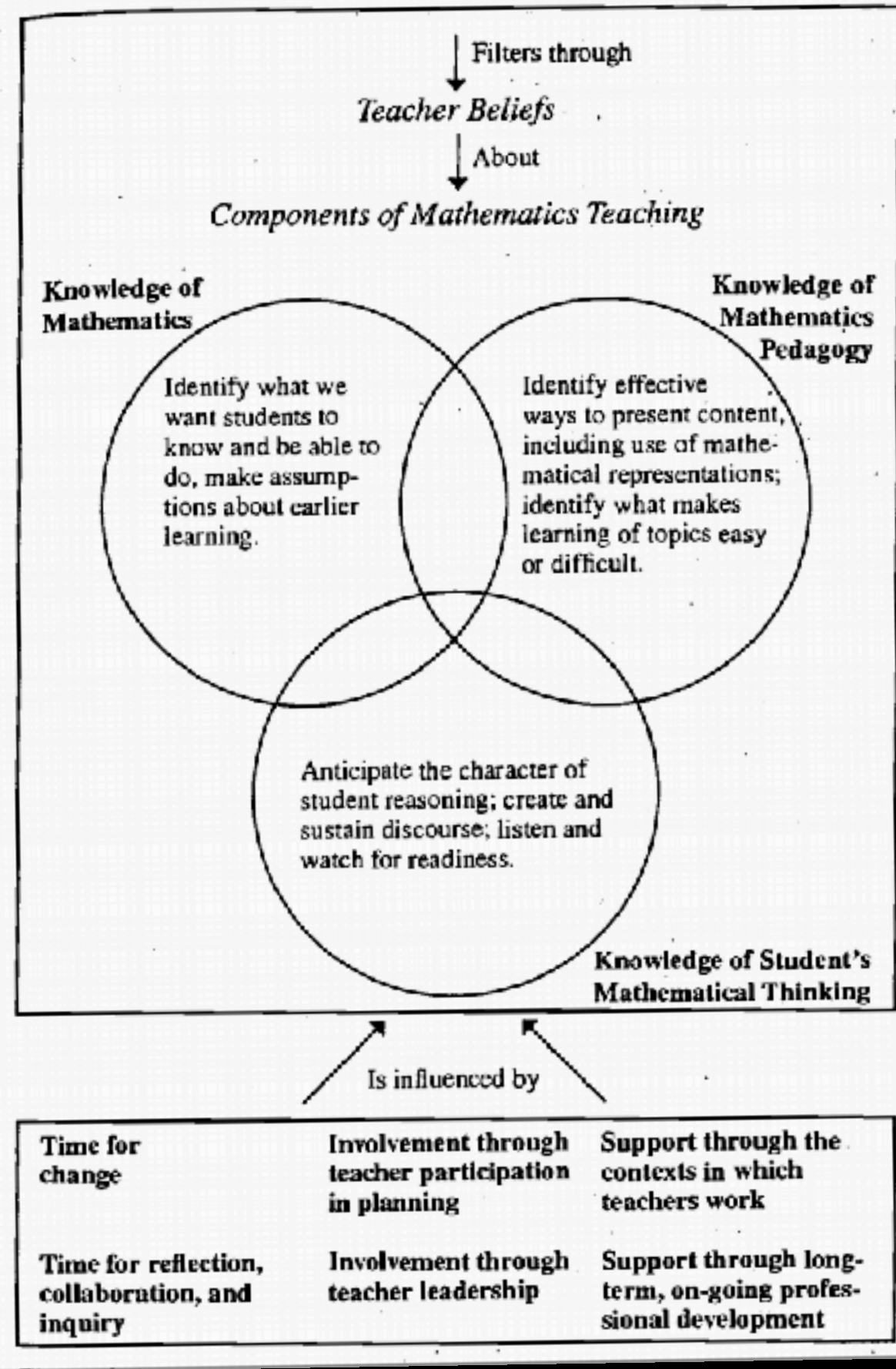
Curriculum

Testing



Key finding

Reforming mathematics education is really, really, really hard.



Susan Friel and George Bright

(2001) "Effective Professional Development for Teacher Leaders: Lessons Learned from K-6 Mathematics Enhancement Program"

“Skillful teaching doesn’t come in a box and it cannot be mandated. It must be cultivated.”

Lucy West and Toni Cameron

(2013) *Agents of Change*

How?



What is the “unit of change?”*

Nation
State
County
District
School
Grade Level
Classroom

*Lynsey Gibbons, Elham Kazemi, Rebecca Lewis
(2017) “Coaching as a Lever for School-Wide Improvement.”

Nation?



<https://www.cbsnews.com/video/betsy-devos-on-guns-school-choice-and-why-people-dont-like-her/>



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SNL

Education

Congress rejects much of Betsy DeVos's agenda in spending bill

By **Moriah Balingit** and **Danielle Douglas-Gabriel** March 24

DeVos Education Dept. Begins Dismissing Civil Rights Cases in Name of Efficiency

By ERICA L. GREEN APRIL 20, 2018



The changes worry civil rights groups, which point out that Education Secretary Betsy DeVos has already rescinded guidances meant to protect students against sexual assaults on campuses and black and transgender students against bias. Erin Schaff for The New York Times

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(2017) “Coaching as a Lever for School-Wide Improvement.”

State?

These States Are Leveraging Title II of ESSA to Modernize and Elevate the Teaching Profession

By [Stephenie Johnson](#) | Posted on February 5, 2018

State?

In Arizona, teachers can now be hired with absolutely no training in how to teach

By [Valerie Strauss](#) May 14, 2017

Maine governor calls classroom teachers 'a dime a dozen'

Author: AP , WCSH

Published: 4:37 PM EDT August 18, 2017

You No Longer Need a Teaching Degree to Teach in Utah

By [Madeline Will](#) on June 14, 2016 3:32 PM

Why Hawaii Is No Paradise for Teachers

[TIMOTHY A. SCHULER](#) JAN 31, 2017





Charleston, WV

<https://www.theatlantic.com/education/archive/2018/03/west-virginia-teachers-victory/555056/>

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Frankfort, KY

<https://www.nytimes.com/2018/04/03/us/teacher-walkouts-strikes.html>

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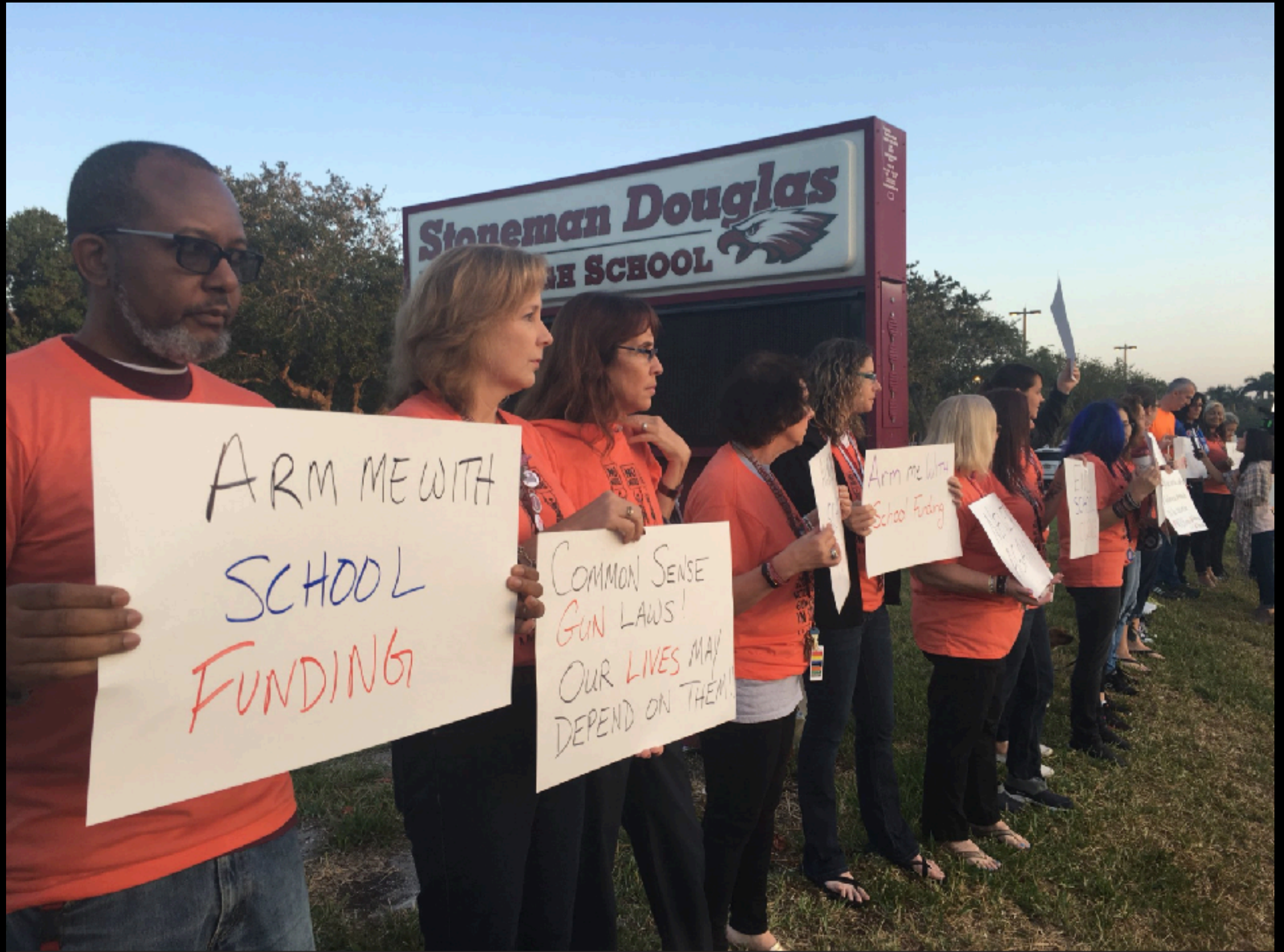


Dayton, Chicago, Seattle



Show us the
RESPECT
We DESERVE

- Fund Not Freeze!
- Fully-Certified in Every subject!
- Respectable Raise!
- No Vouchers! Fund Public ed!
- Our future depends on US!



@jessicabakeman

@tracyzager

What is the “unit of change?”

Nation
State
County
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Classroom

> Vital, politically challenging work.
Remote from math teaching practice.

Counties and Districts?

Essential for coherence.

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Essential for coherence.

Effective way to consolidate resources
and provide focused expertise.

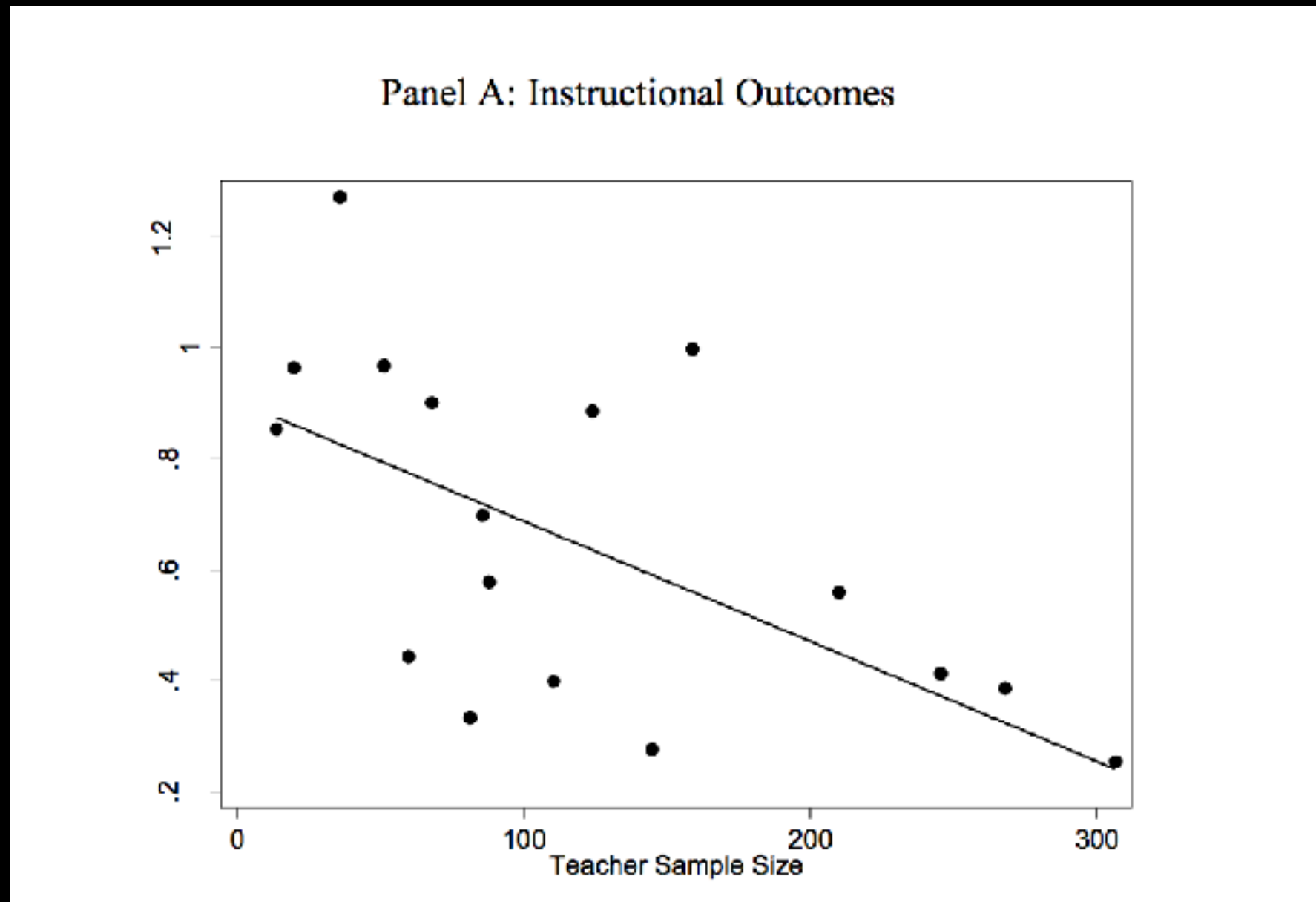
Counties and Districts?

Essential for coherence.

Effective way to consolidate resources
and provide focused expertise.

Have the built-in challenge of scale.

“Coaching effects in large-scale effectiveness trials with 100 teachers or more are only half as large as effects in small-scale efficacy trials.”



Kraft MA, Blazar D, Hogan D. The Effect of Teacher Coaching on Instruction and Achievement: A Meta-Analysis of the Causal Evidence. Review of Educational Research [Internet]. Forthcoming.



Ilana Horn

@ilana_horn

We saw this in our study: instructional coach fired, replaced with a data manager.

Brette @brettegarner

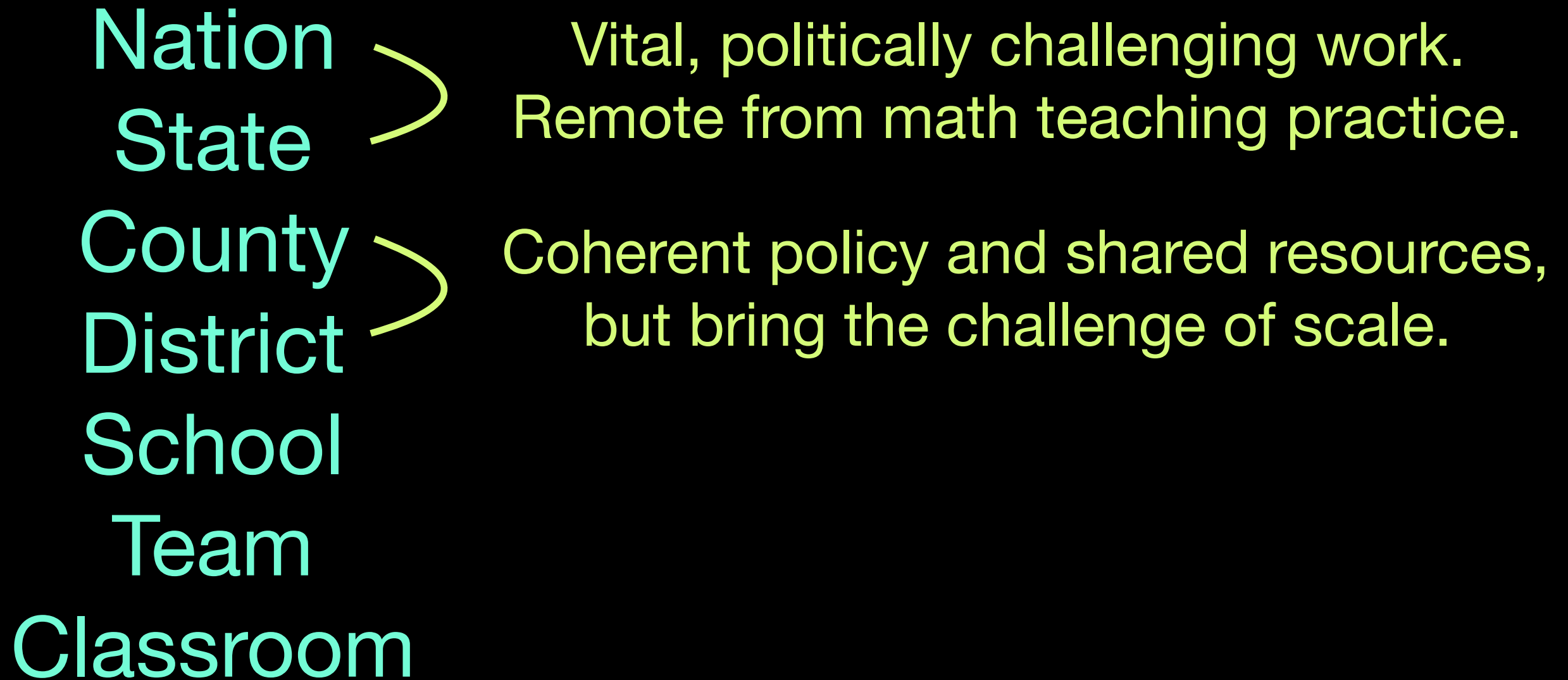
Lorrie Shepard: Schools and districts are investing tons of resources into data systems, data management, data driven decision making, etc. And they're doing that **INSTEAD** of investing in teachers, curricula, or instructional materials. #AERA18

[Show this thread](#)

3:01 PM - 16 Apr 2018

In-the-building versus out-of-the-building:
A different kind of relationship.

What is the “unit of change?”



What is the “unit of change?”

Nation
State



Vital, politically challenging work.
Remote from teaching practice.

County
District




Essential for coherent policy,
but brings the challenge of scale.

School
Team
Classroom



What is the “unit of change?”



School
Team
Classroom



Matt Hagen - photographer



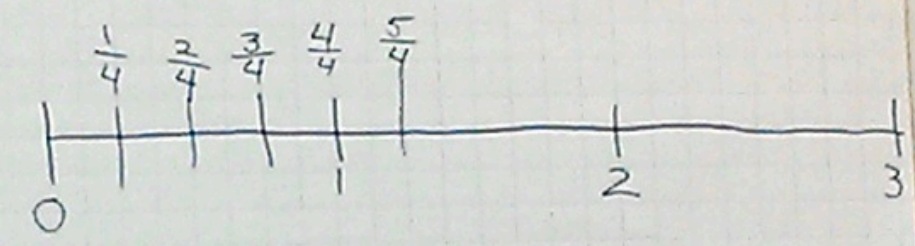
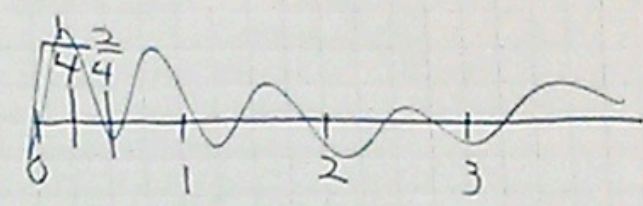
Vw Ww Xx Yy Zz



25¢	\$0.25	\$1.25	\$2.25
50¢	\$0.50	\$1.50	\$2.50
75¢	\$0.75	\$1.75	\$2.75
1.00	\$2.00	\$3.00	\$5.00

$1.00 + 1.00 = 2.00$ $2.00 + 1.00 = 3.00$ $3.00 + 1.00 = 4.00$ $4.00 + 1.00 = 5.00$
 $3 + 2 = 5$ $3 + 1 + 1 = 5$


$1.00 \rightarrow 2.00 \rightarrow 3.00 \rightarrow 4.00 \rightarrow 5.00$



“When whole grade levels, schools, or departments are involved, they create a critical mass for changed instruction at the school level. Teachers serve as support groups for one another in improving practice. Collective work in trusting environments provides a basis for inquiry and reflection, allowing teachers to raise issues, take risks, and address dilemmas in their own practice.”

Linda Darling-Hammond and Nikole Richardson
(2009) “Teacher Learning: What Matters?”

What is the “unit of change?”



School
Team
Classroom

“The emphasis instead on developing shared practices across classrooms was motivated by concerns for equitable learning experiences for students....As students moved from grade to grade, they would experience teachers nurturing the same kind of positive intellectual and social environment.”

*Lynsey Gibbons, Elham Kazemi, Rebecca Lewis
(2017) “Coaching as a Lever for School-Wide Improvement.”

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Example Formats of Teacher- and Student-Centered Professional Development

- Look at Student Work Together
- Professional Learning Communities
- Critical Friends Groups
- Structured Book Studies
- Lesson Studies
- Action Research
- Case Study Discussions
- Collaborative Coaching
- Content Coaching
- Common Planning
- Induction and Mentoring
- Co-teaching
- Math Labs
- Practice-based, sustained Institutes and Workshops (not one-shot deals)

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What would it look like for people at all
levels to support grade level and
departmental teams?

Non-Negotiables

- Equity is an explicit focus and all students are assumed to be sense makers in mathematics
- Teaching is made public and collaborative
- Work is planned/sustained over years
- Relationships honored as the heart of this work
- Climate is risk-free, trusting, non-evaluative
- Facilitators are skilled and get their own PD
- Participants are expected to try teaching techniques, reflect, and share findings
- Administrators participate in PD, support coaches, are instructional leaders, and align their observations
- Design for succession and turnover—plan to socialize newcomers into culture and build their knowledge

“Developing an instructional practice based on constructivist views cannot be simply a matter of adopting a different textbook, introducing manipulatives, or putting students into small groups...

“Constructing a practice consistent with the new paradigm entails a new conception of the nature of mathematics and a drastically revised picture of what should be happening in the classroom.”

Deborah Schifter and Cathy Fosnot

Reconstructing Mathematics Education: Stories of Teachers Meeting the Challenge of Reform

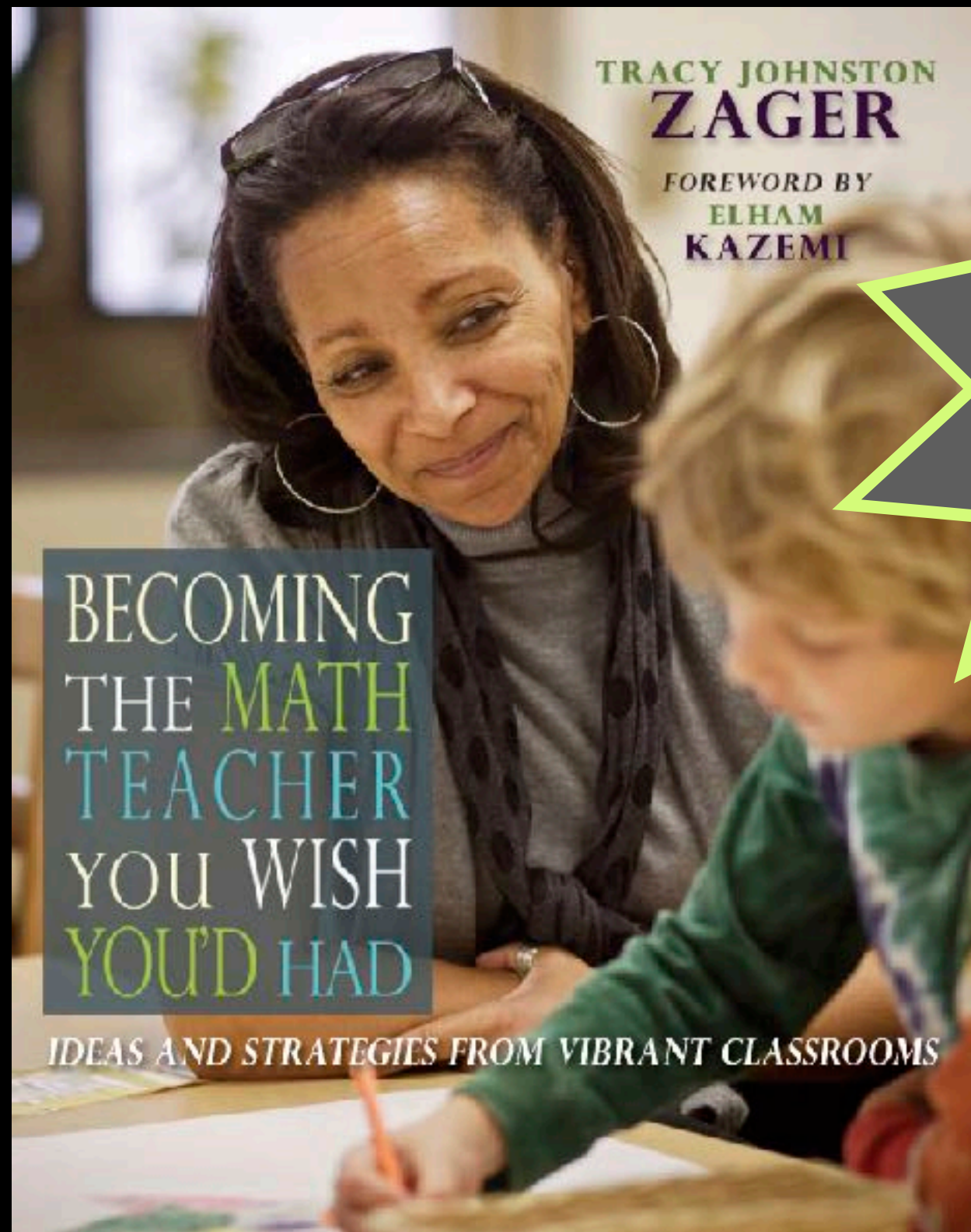
“Altering the core elements of teaching requires extended opportunities for teachers to learn, generous support from peers and mentors, and opportunities to practice, reflect, critique, and practice again...”

David K. Cohen & Heather Hill

(1998) *Instructional Policy and Classroom Performance*



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