

Let's get started

- Consider a PD program for K-5 teachers:
 - Multi-year
 - Summer workshops and academic year component
 - Experienced, well-prepared PD providers

Teacher survey

- 50% “have made substantial changes in their instruction based on the PD.”
- Project team wants to understand why some are at least attempting to change, and others aren't.

Mathematics versus science?

- No difference

Number of years teaching?

- No difference

District A versus District B?

- 20% of teachers in District A report changes in their instruction
- 80% of teachers in District B report changes in their instruction

District A versus District B?

- Discuss at your tables (10 minutes):
 - What might explain the low “take-up” in District A?
 - What might the project do about it?

Raise your hands if you talked about:

- Extent of principal support
- Extent of parent support
- Availability of appropriate instructional materials
- District policies that got in the way, e.g., district assessments not well-aligned with the vision

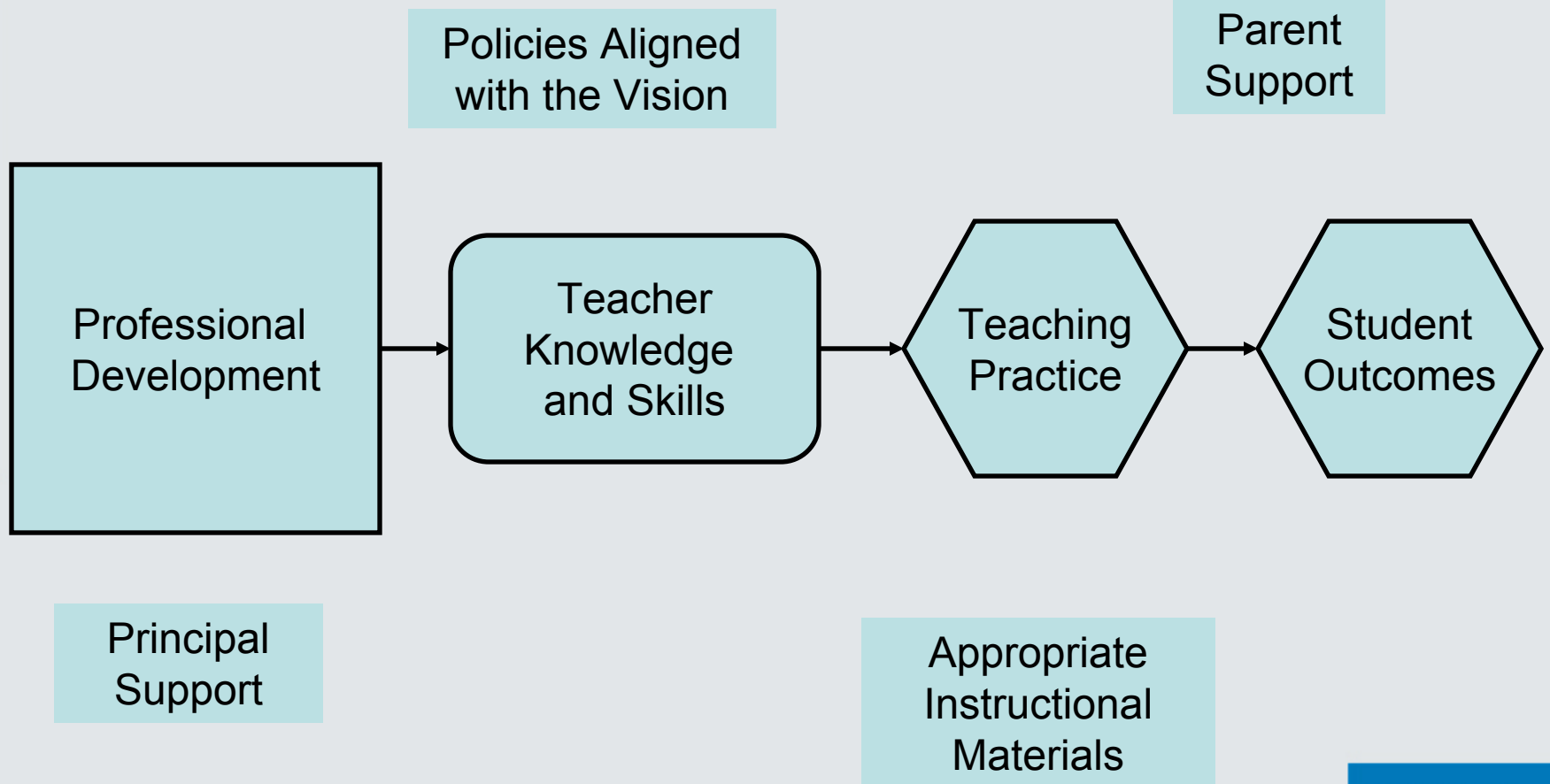
Check to see...

- If teachers have the necessary materials/ supplies
- The extent of alignment between PD and:
 - Student instructional materials
 - Student assessments
 - Teacher evaluation policies

Consider...

- Providing PD for principals to help ensure buy-in
- Involving parents, same reason

Simplified Logic Model for Professional Development



Goals of this meeting

- Teams will learn about designing high quality professional development and consider how to apply what they are learning to their particular context.

For this meeting

- We will assume that you will address these other system components as essential for lasting improvement;
- And will focus on the design of PD to enhance teacher knowledge and skills and improve teaching and learning.

The Promise and Perils of Long-term Partnerships

- Partnerships have great potential, bringing together more expertise and experience than a single entity would have.
- But partnerships are tricky, bringing together people with different perspectives on the problems and solutions, as well as different ways of working.

MSP Example

- Zende Clark – Director of Secondary Education, Hillside Township Public School District, New Jersey
- Hillside is part of The Consortium for Achievement in Mathematics and Science
- (CAMS) MSP

The background features a light teal color with abstract, overlapping geometric shapes. On the right side, there is a large, stylized diamond shape composed of several smaller teal segments, creating a complex, layered effect. The overall aesthetic is clean and modern.

The Consortium for Achievement in Mathematics and Science (CAMS)

The Promise and Perils of Long Term Partnerships

The Consortium for Achievement in Mathematics and Science (CAMS)

- Partnership with the Merck Institute for Science Education (MISE)
- Hillside Public Schools
 - Small, New Jersey urban school district
 - 3000 students
 - 300 teachers
- Complete overhaul of science curriculum moving toward reformed-based instruction

Promises of Partnership

- Provides professional development for science teachers
- Creates a community of learners for teachers and administrators
- Provides access to research-based resources
- Supplements capacity/shares responsibility

Perils of Partnership

- Entails personal/professional commitment from all stakeholders
- Involves additional work
- Needs district support
- Challenged by the demands of other initiatives
- Requires time!

Partnership Continues...

- Informal support among partners
- Collaborative approach to meeting needs of science program
- Promotes leadership in science instruction
- Science as the bridge

Value Added

“This has probably been one of the best professional development experiences that I’ve had. This is about changing teaching, Changing the relationship that exists between kids and teachers in a classroom – it’s about learning in a different way.”

-Lee McCaskill, Ed.D., Principal

Hillside High School, Hillside Public Schools (27 year educator)

MSP Example

- Ruth Heaton –Associate professor in the Department of Teaching, Learning and Teacher Education at the University of Nebraska-Lincoln.
- Co-PI of *Math in the Middle* and *NebraskaMATH*



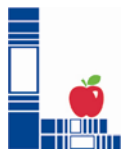
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The Promise and Perils of Long-term Partnerships

Ruth M. Heaton

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Department of Teaching, Learning and Teacher Education
University of Nebraska-Lincoln



Context

- Mathematics educator
- 10 years elementary teacher
- Lampert & Ball, Michigan State University, mentors
- Selected University of Nebraska-Lincoln, 1995
- Collaboration with Jim Lewis, mathematician, 2000



University of Nebraska-Lincoln

- mathematics education in Department of Teaching, Learning and Teacher Education, College of Education and Human Sciences
- previous collaboration between departments (e.g., NMSI)
- mathematicians involved in my job interview
- no animosity between math and math education



First Steps

- Established self as faculty member
- Engaged in school-university partnership
- Learned partnerships require:
 - An agenda
 - Time
 - Trust
 - Respect



A Math Educator-Mathematician Partnership

- Sought recommendation for partner
- Trust & respect for expertise
- Common agenda
 - Improve mathematics education
 - Good teachers matter
 - High expectations
- Money buys time (e.g., NSF grants)



Career Differences

- Advantages
- Issues of tenure and promotion
- What matters to the institution & individual
- No ideal; be aware and responsive



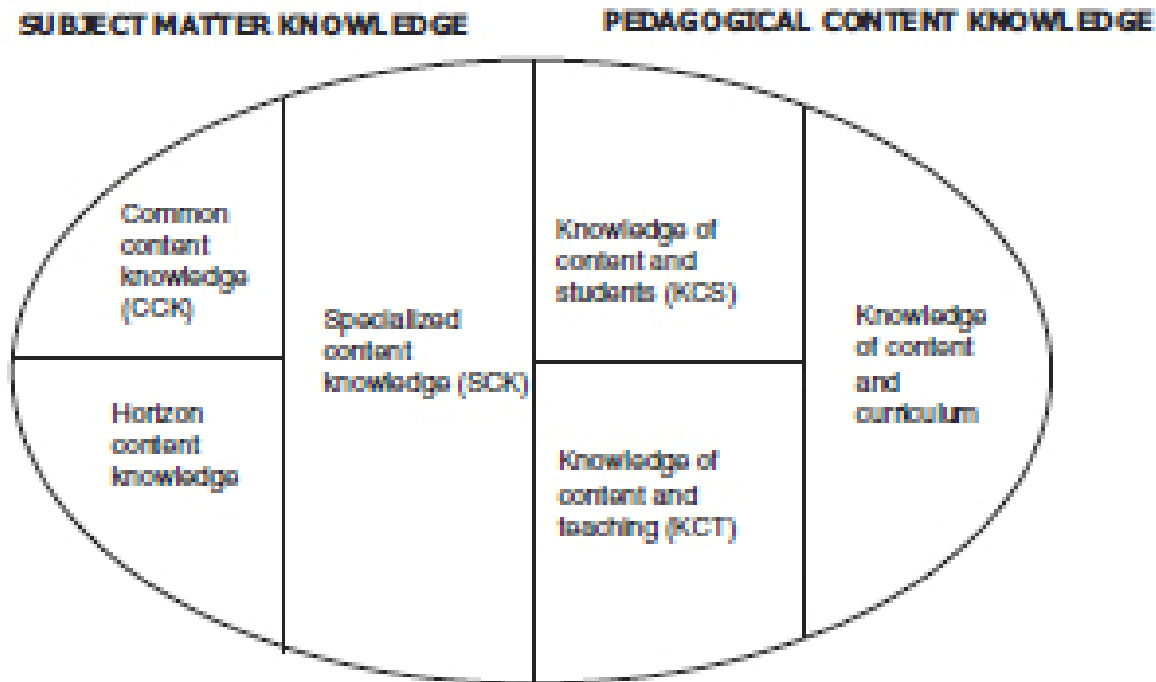
Appreciate Disciplinary Knowledge

Big ideas & nuances of disciplinary knowledge matter

- *Why is the square root of two irrational?*
- *What is constructivism?*



Domains of Mathematical Knowledge for Teaching



Ball, Thames & Phelps (2008)

Content Knowledge for Teaching: What Makes It Special?

Journal of Teacher Education

Choosing the right partner

Exhibit willingness to

- Work together
- Learn
- Disagree
- Be wrong
- Change ideas
- Invest equitably



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Nebraska MATH

*A partnership to improve
mathematics achievement*



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