

Diagnosis and Design for Instructional Improvement: Formal Structure & School Work Practice

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The Distributed Leadership Studies
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Anchoring Instructional Improvement Work

Improving Students' Opportunities To Learn



Classroom Teaching

What gets taught?



How is it taught?

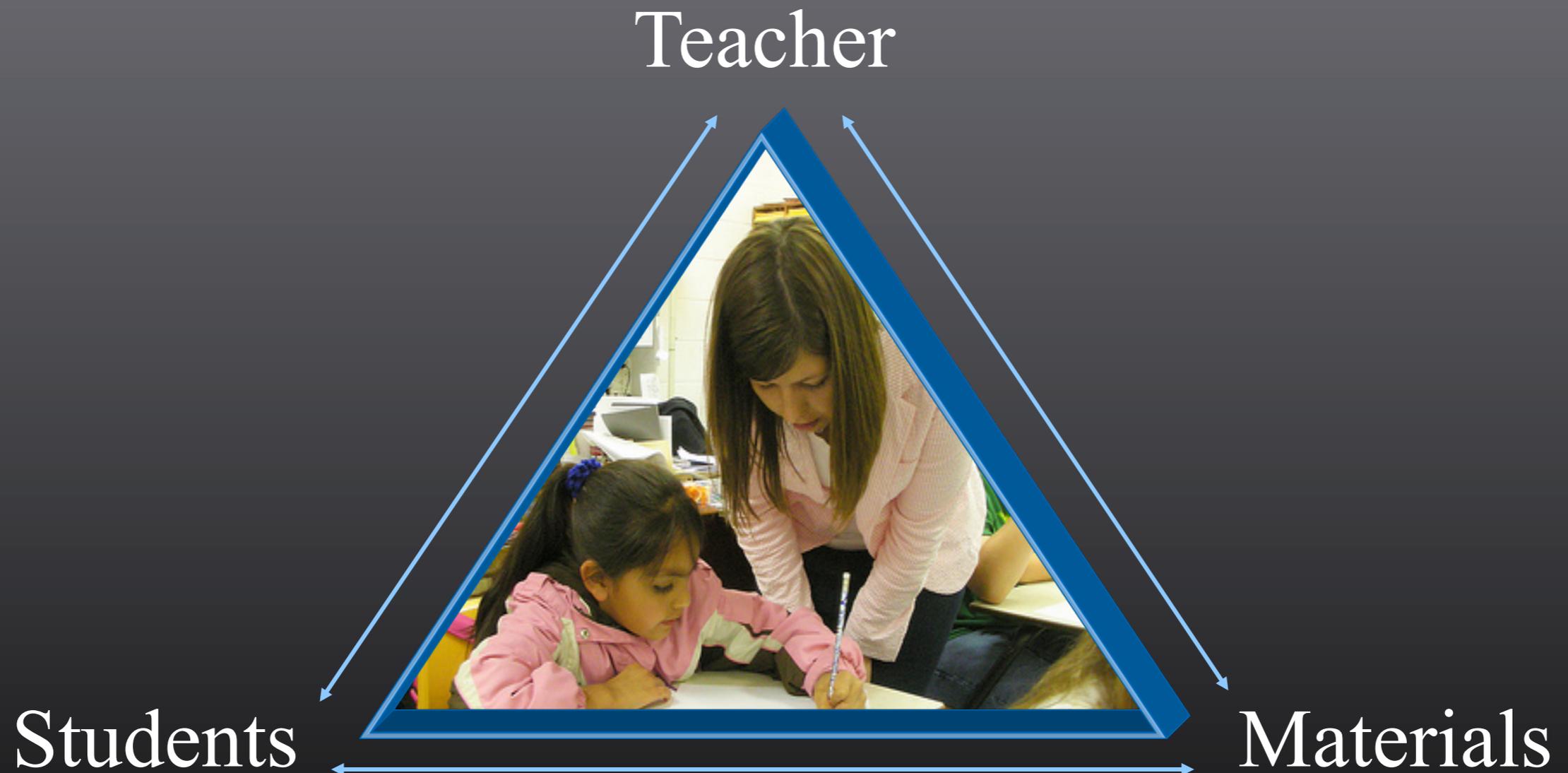
School Practice



Organization & System
Infrastructure



Conceptualizing Teaching



(Cohen & Ball, 1998; Delpit, 1996; Hawkins, 1977)

It's All About Practice

- Instructional improvement depends on the practice of leading and managing
- Practice is fundamentally social ...
 - Generated in the interactions among school staff (and other stakeholders).
 - Interactions are enabled and constrained by material and abstract aspects of the situation
 - Situation is both constitutive of, and constituted in, practice
- Understanding relations between (Infra)structure and interactions are key
- A Diagnostic and Design Mindset is essential.

What's this got to do with Lesson Study?

- Lesson study is about (transforming) how teachers practice inside and outside the classroom.
- It is fundamentally about improving classroom instruction.
- Lesson Study *is a case of* an organizational (or education system) routine.
- 'Going to scale' with Lesson study is fundamentally about understanding the dynamics between infrastructure and social interactions ... the essence of practice.

Overview of Talk

- a) Examining Practice Through Organizational Routines (one component of infrastructure)
- b) How Infrastructure Matters in Interactions: Designing for Practice
- c) Adopting a Diagnostic and Design mindset

Organizational Routines

Organizational Routines & Practice

- **Adams School:** Breakfast Club, Grade level meetings, Teacher Talk, Teacher Leaders, Five-Week Assessment, Literacy Committee, and Mathematics Committee
- **Baxter School:** Cycle Meetings, Leadership Team Meetings, Literacy Committee, Math/Science Committee
- **Kosten School:** Report Card Review, Grade Book Review, Lesson Plan Review, Faculty Meetings, Grade Level Meetings
- **Kelly School:** Skill Chart Review, Professional Development

The Case of Organizational Routines

- **Organizational Routines:** “repetitive, recognizable patterns of interdependent actions carried out by multiple actors” (*Feldman & Pentland, 2003*)
 - **Ostensive Aspect:** ideal form – general idea or script of the routine
 - **Performative Aspect:** routine in practice in particular places, at particular times
- **Improving Practice** in the interaction of the ostensive and performative aspect of organizational routines.
- Concerns about the organizational routine construct – rigid, mundane, mindless, explicitly stored (*Cohen, 2007*)

Organizational Routines

Advantages

Allow efficient coordinated action

Provide source of stability

Reduce conflict about how to do work

Disadvantages

Result in inappropriate responses

Inertia, mindlessness, and de-motivation

Organizational Routines at Adams School

Routine	Functions	Tools	People
Five Week Assessment	<ul style="list-style-type: none"> -Formative evaluation -Teacher Accountability -Monitor Instruction -Teacher Development 	<ul style="list-style-type: none"> -Standardized Tests -Standards -Student Assessments 	<ul style="list-style-type: none"> -Language Arts Coordinator -Assistant Principal -Principal -Teachers
Breakfast Club	<ul style="list-style-type: none"> -Teacher Development -Build Professional Community 	<ul style="list-style-type: none"> -Research Articles 	<ul style="list-style-type: none"> -Teachers -Language Arts Coordinator -Principal
School Improvement Planning (SIP)	<ul style="list-style-type: none"> -Identify Instructional Priorities & Resources 	<ul style="list-style-type: none"> -Previous Year SIP -District Guidelines -Test Score Data 	<ul style="list-style-type: none"> -Principal -Administration -Teachers (approved LSC)
Classroom Observations	<ul style="list-style-type: none"> -Teacher Development -Monitor Instruction -Accountability 	<ul style="list-style-type: none"> -School Protocol, -District Protocol 	<ul style="list-style-type: none"> -Principal -Assistant Principal
Real Men Read	<ul style="list-style-type: none"> -Student Motivation and Support 	<ul style="list-style-type: none"> -Books 	<ul style="list-style-type: none"> -Language Arts Co-ord. -Assistant Principal -Principal -Community Members

The Five Week Assessment

“We were just kind of casually saying that for the majority of teachers they all work very hard, but some of them get very low results when it comes to these achievement tests ... So this [Five Week Assessment] was a way to find out ‘Are they learning?’ ”

(Literacy coordinator, 5/15/00)

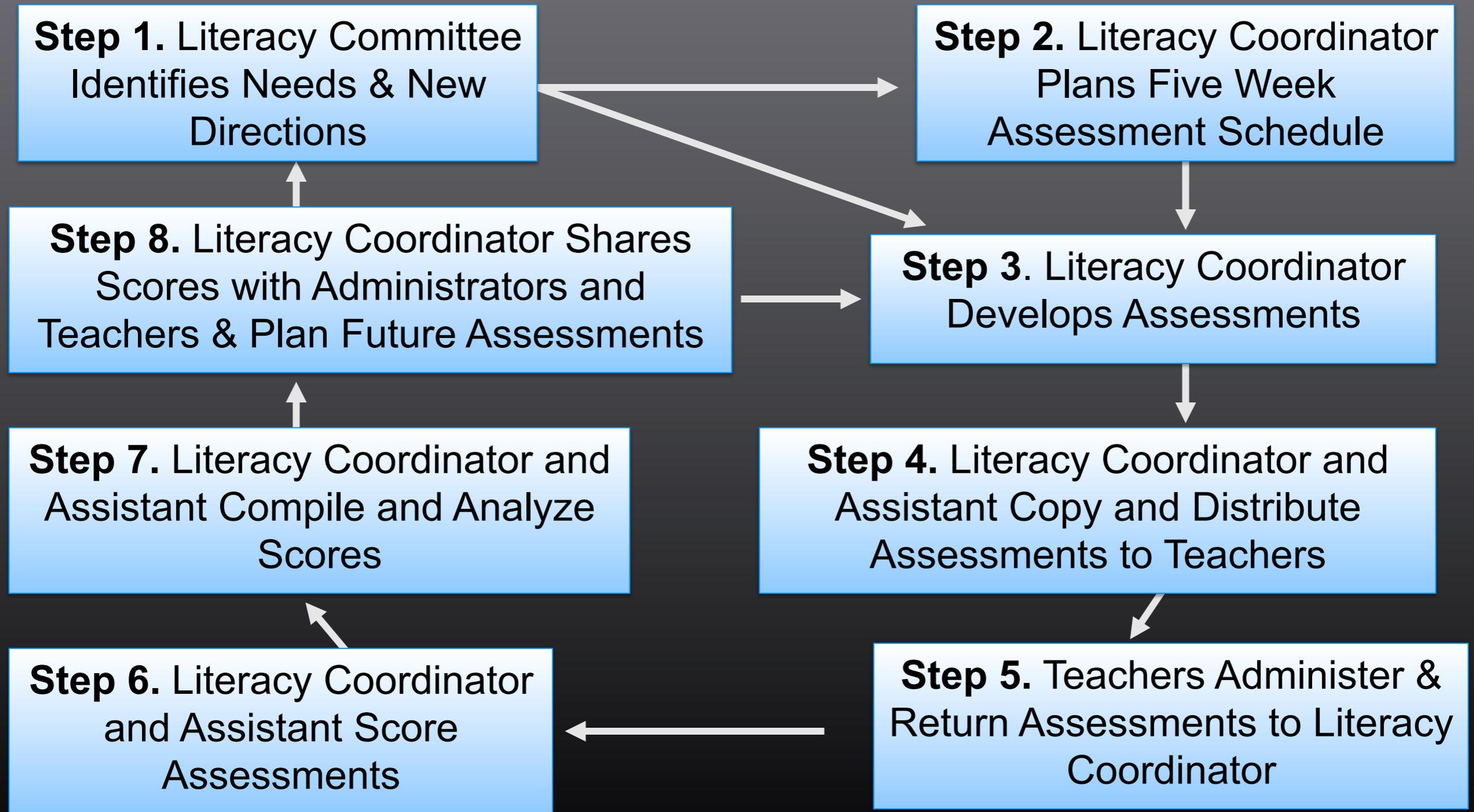
(Literacy coordinator, 10/23/00)

“The [standardized] tests ... didn’t give us much information about what we could do to improve our scores because we received the results well after we could do anything about it. We thought that a more frequent assessment ... would tell us where the children were”

“The Five Week Assessment enabled teachers to see assessment as a tool for letting them know what they need to work on in the classroom. That was the goal.”

(Principal Williams)

Five Week Assessment: Ostensive Aspect



Organizational Routines: Performative Aspect

Ms. Sally then switched the topic of discussion to a uniformed spelling program for the grade. She raised the point that it was important for the grade "to be following a sequence for instruction for phonics." Ms. Jill also wants to bring in one of her own favorite books into the curriculum which she claims has a "consistent format which is the most important because the students are missing a range of words. ... Ms. Dalia then raised the point that she would be concerned that the grade would not be following the standards of the Illinois State in reference to the [Jill's] book. [Grade Level Meeting at Baxter, 10/28/99]

Ms. Jones [mathematics teacher leader] remarks, "I don't too much worry about this one [kind of] question. But now if it's four or five questions [about the same content on the state test] I target in on that and I make sure my kids know that..." [Annual Kick-off Faculty Meeting at Adams, 8/31/01]

Changing Infrastructure, Changing Interactions

“Everybody did absolutely their own thing as far as literacy. Some people used the Basal series . . . we had different Basal series going in the building. A lot of people were going to a literature-based instruction. Nobody ever talked to each other. It was just—everybody went into their own room, closed the door and did their own thing. So we’ve tried to develop some common vocabulary and common ways of doing things.”

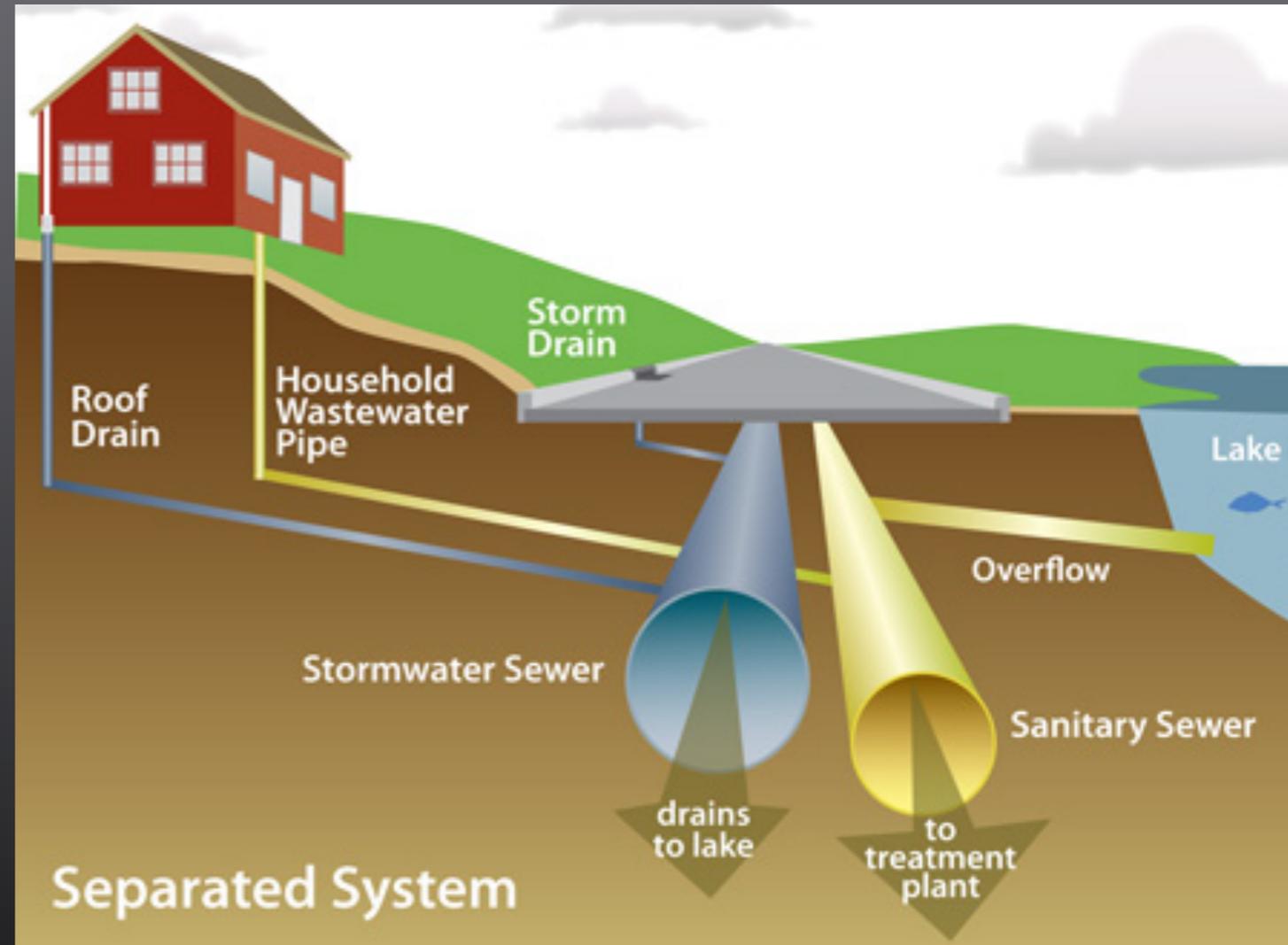
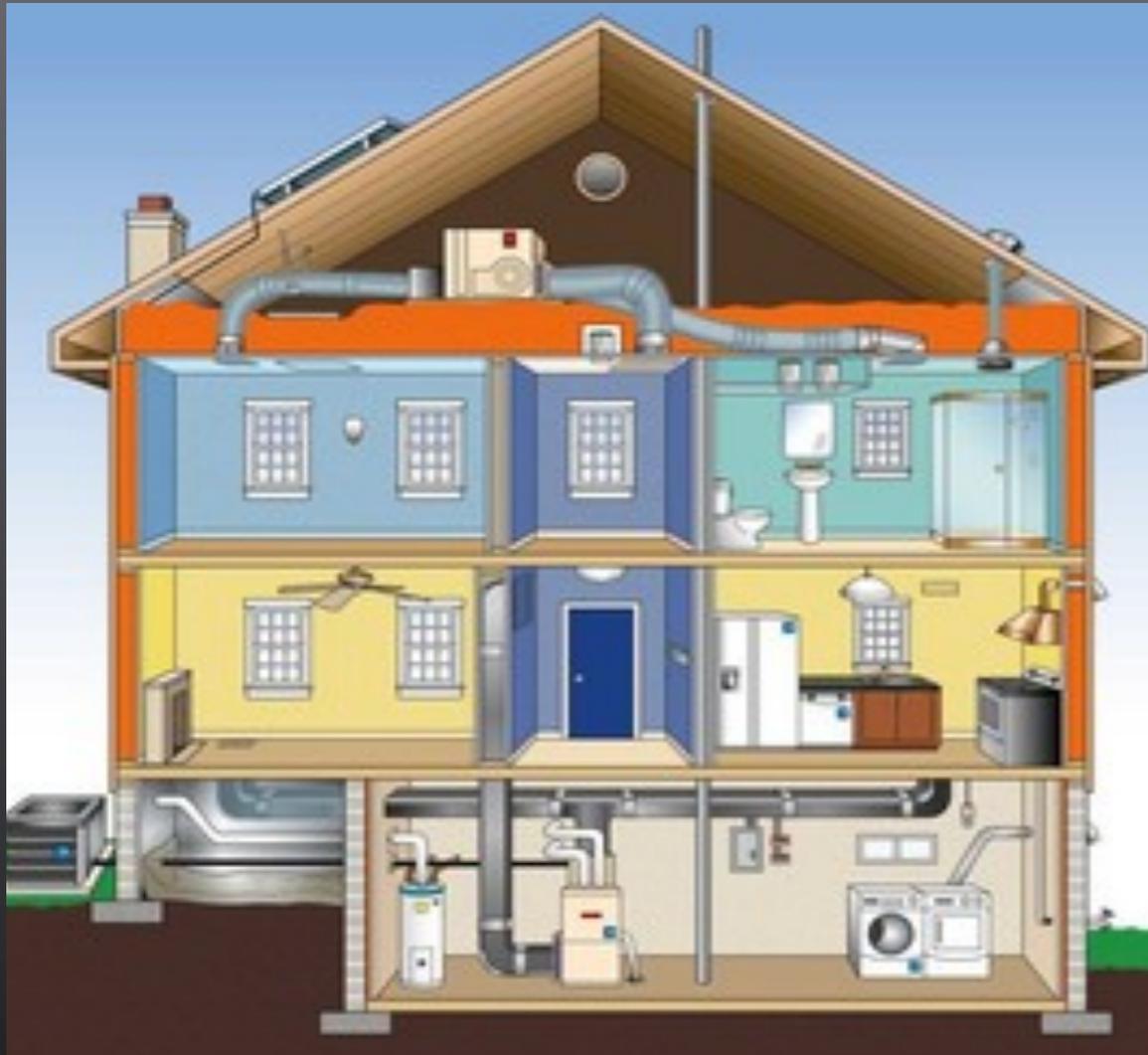
“You close your door. You do what you want. You don’t know what everybody else is doing and it’s fine. Nobody is interested. Nobody’s checking on you or even interested in what you are doing . . . but it changed since then. We work much closer together and I was a very quiet person. . . . Until I was probably elected to . . . chair cycle. First of all, we probably were forced to do some exchange of ideas in—when it first started. Then people found it’s very helpful and nobody keeping anything as a secret so we share freely. And it helps.”

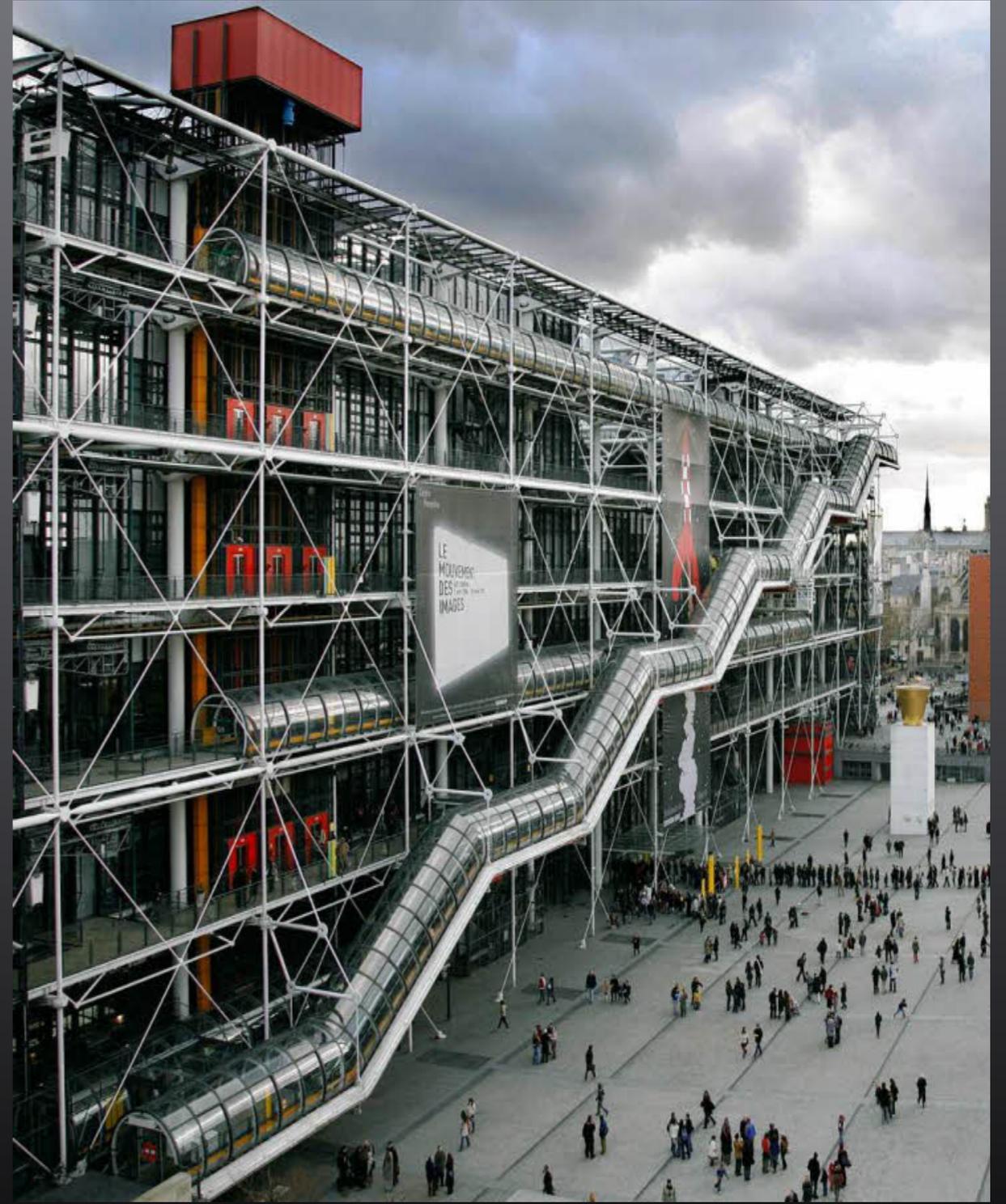
Teacher Interview

Organizational Routines Performative Aspect

	Adams	Baxter	Kosten	Kelly
Policy	72%	67%	80%	73%
Technical Core	100	88	93	82
Technical Core & Policy	72	67	73	73
Language Arts	62	62	24	46
Math	36	10	17	36
Science	17	10	7	9

Infrastructure





CONCEPTS NORMS SCRIPTS POLICIES SCRIPTS TOOLS FRAMES WORK
CONCEPTS NORMS PROCEDURES STRUCTURE WORK
CONCEPTS POSITIONS
ORGANIZATIONAL
FRAMES ROUTINES RULES
TOOLS NORMS REGULATIONS CONCEPTS PROTOCOLS FRAMES
STRUCTURE PROGRAMS WORK SCRIPTS PROCEDURES POLICIES ROUTINES
SCRIPTS RULES ORGANIZATIONAL

CONCEPTS
NORMS
SCRIPTS
POLICIES
SCRIPTS
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RULES
POSITIONS

Infrastructure

- *Anchoring in and Alignment with Instruction*
- *Cognitive adequacy*
- *Consistency*
- *Communicability, Corruptibility, and Correctability*
- *Authority and Power*

Does Infrastructure Matter?

A Study of Elementary School Mathematics

Study Design

14 elementary schools in Pleasantville, Nebraska.

School Staff surveys administered in Spring 2010, 2011, 2012, (& 2013).

Interviews with purposeful sub-sample in five schools in 2011 and 2012.

Survey Response Rate

2010: 311 staff, 89% response rate, ranging from 82% to 100%.

2011: 337 staff, 95% response rate, ranging from 93% to 100%.

2012: 375 staff, 94% response rate, ranging from 83% to 100%.

Research Question: How do infrastructure redesign efforts shape staff interactions?

Why Focus on Advice and Information Interactions?

Essential for Practice

On-the-job interactions are associated with the transfer of advice and information – essential in the development of new knowledge.

Social relations as source of resources such as trust, expertise, opportunities for joint sense-making, and incentives for innovation.

District Infrastructure Design for Teacher Leadership

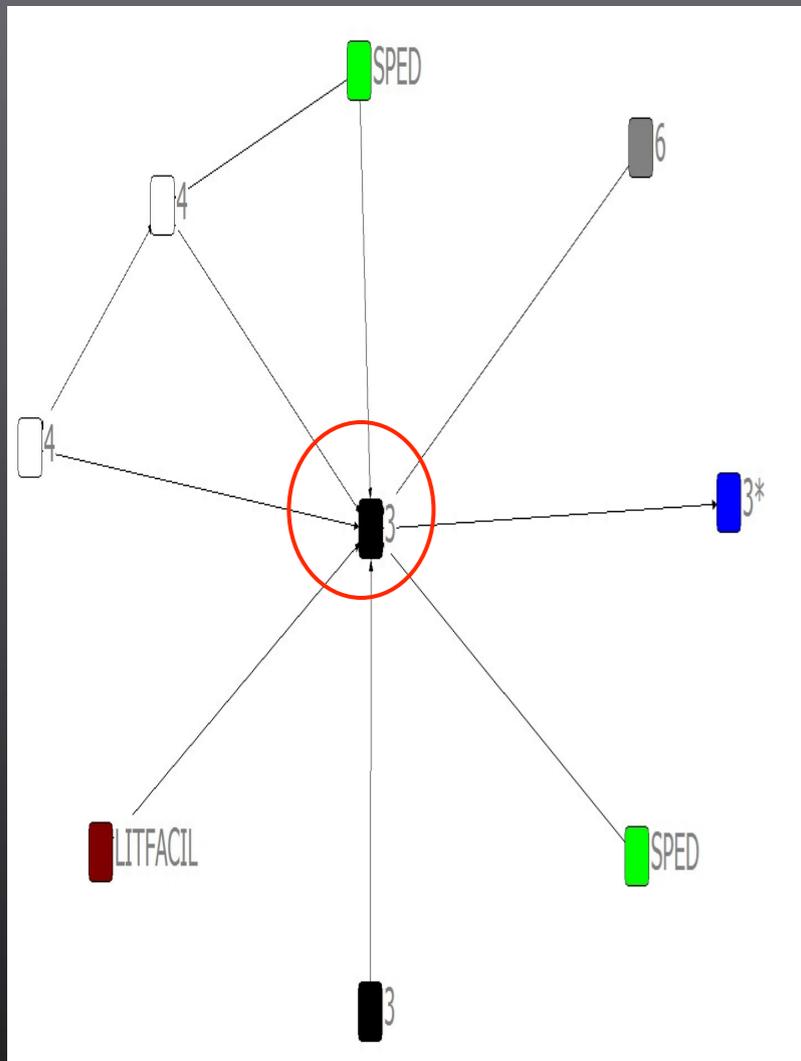
- Infrastructure for mathematics instruction
 - New Inquiry-Based Elementary School Mathematics **Curriculum**
 - **Resource and material** adoption (Investigations)
 - State **standards** alignment
 - Unit **assessment** development
- Infrastructure (re)design for teacher leadership
 - District-wide and school specific **organizational routines** (e.g., arrays, toolbox, PLCs).
 - Math **Coaches** in some schools
 - **Professional development** in math for select teacher leaders

Network Centrality Measures

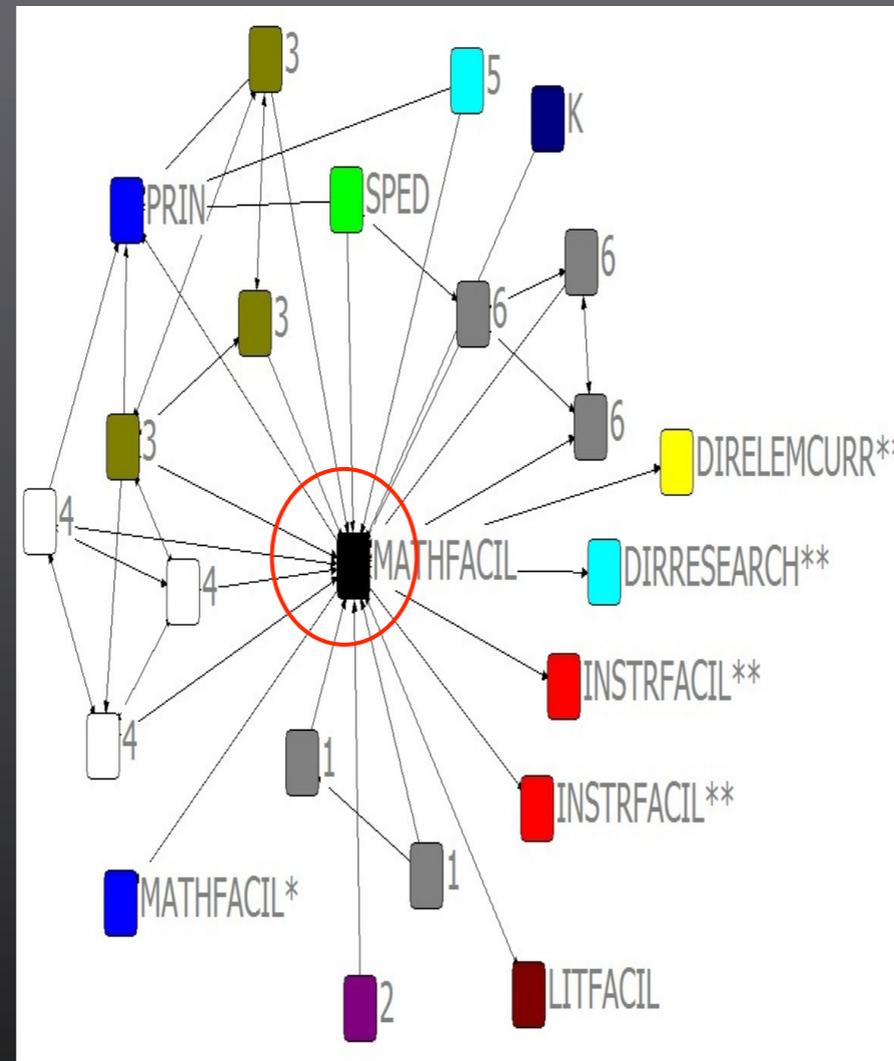
- Degree centrality
 - In-degree = the number of people who sought out an actor for advice or information
 - Out-degree = the number of people that actor sought out for advice or information
- Betweenness centrality = the extent to which an actor links two other actors in the network
 - A measure of **brokering**

$$C_B(n_i) = \frac{\sum_{j < k} g_{jk}(n_i)}{g_{jk}}$$

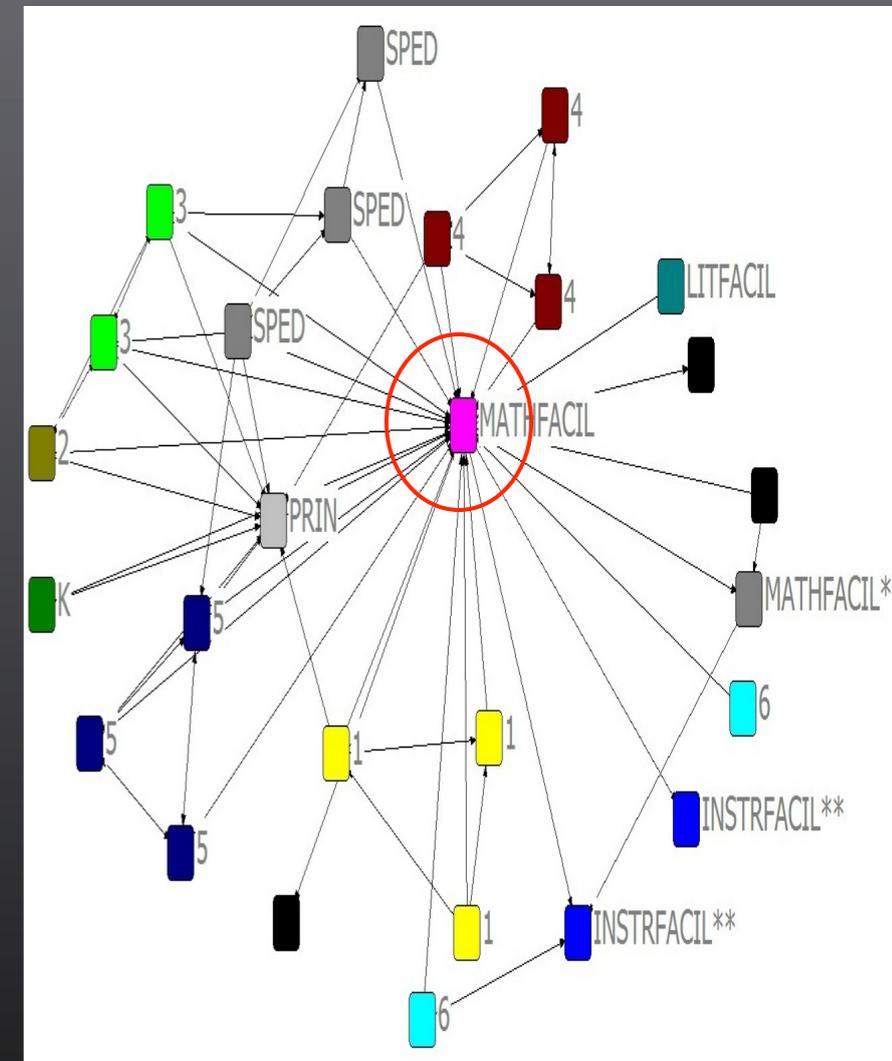
Math Coach (Emily) Facilitates Staff Interactions



2009-10



2010-11



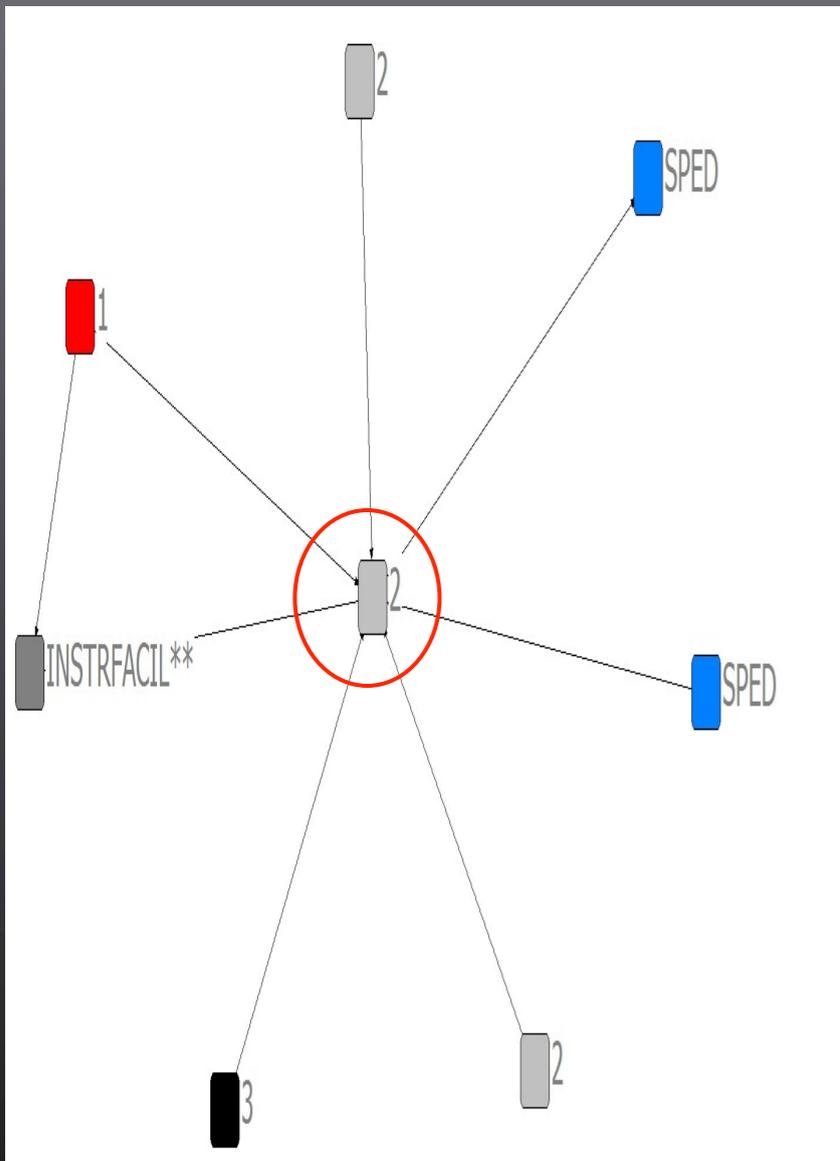
2011-12

Formal Position Promotes Advice Seeking

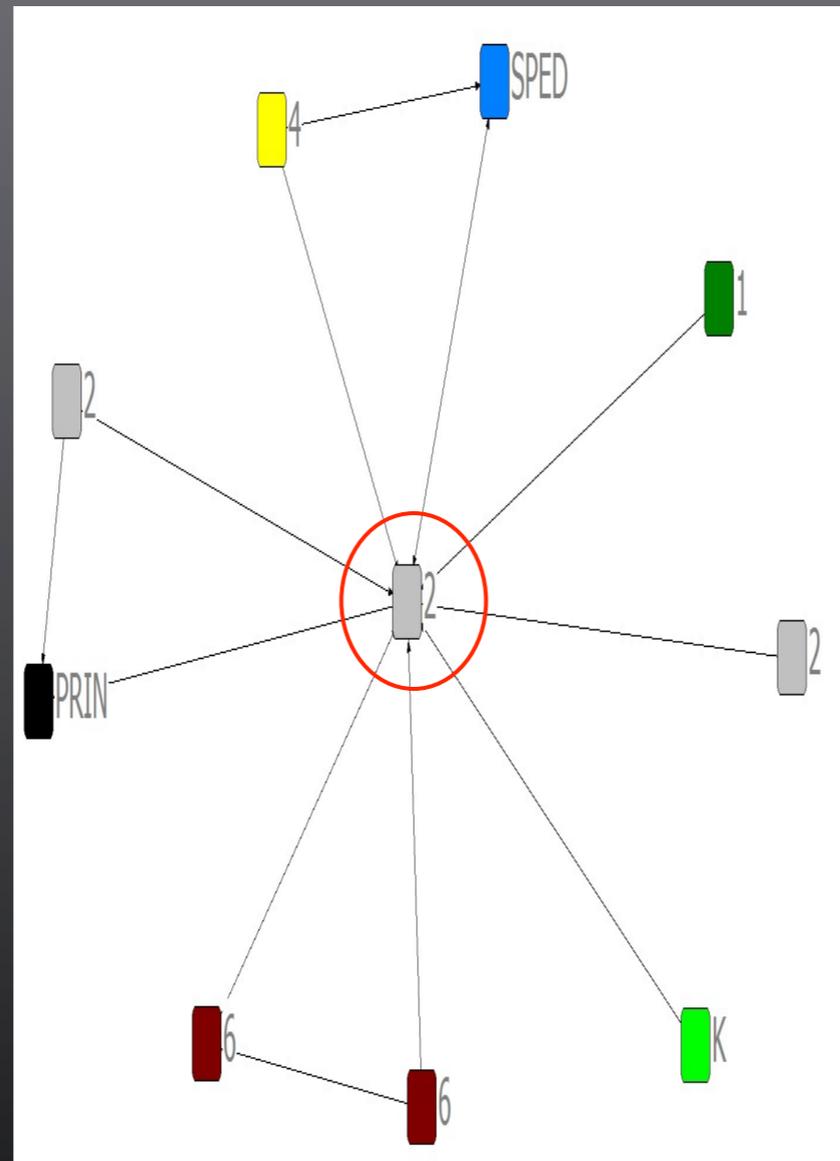
“[Emily] really wasn’t our facilitator [last year], though she was my co-worker, just a third grade teacher. I knew she had a wealth of knowledge, I just wasn’t in [her classroom] when she was teaching math. But, now that she’s moved into this math facilitator position, that’s different... She’s been trained in it. And, she’s gone to school for it and she’s a great coach. She knows a lot about math and I trust her that she has a lot of, a wealth of knowledge... She’s the go-to person.”

Angie, Special Education

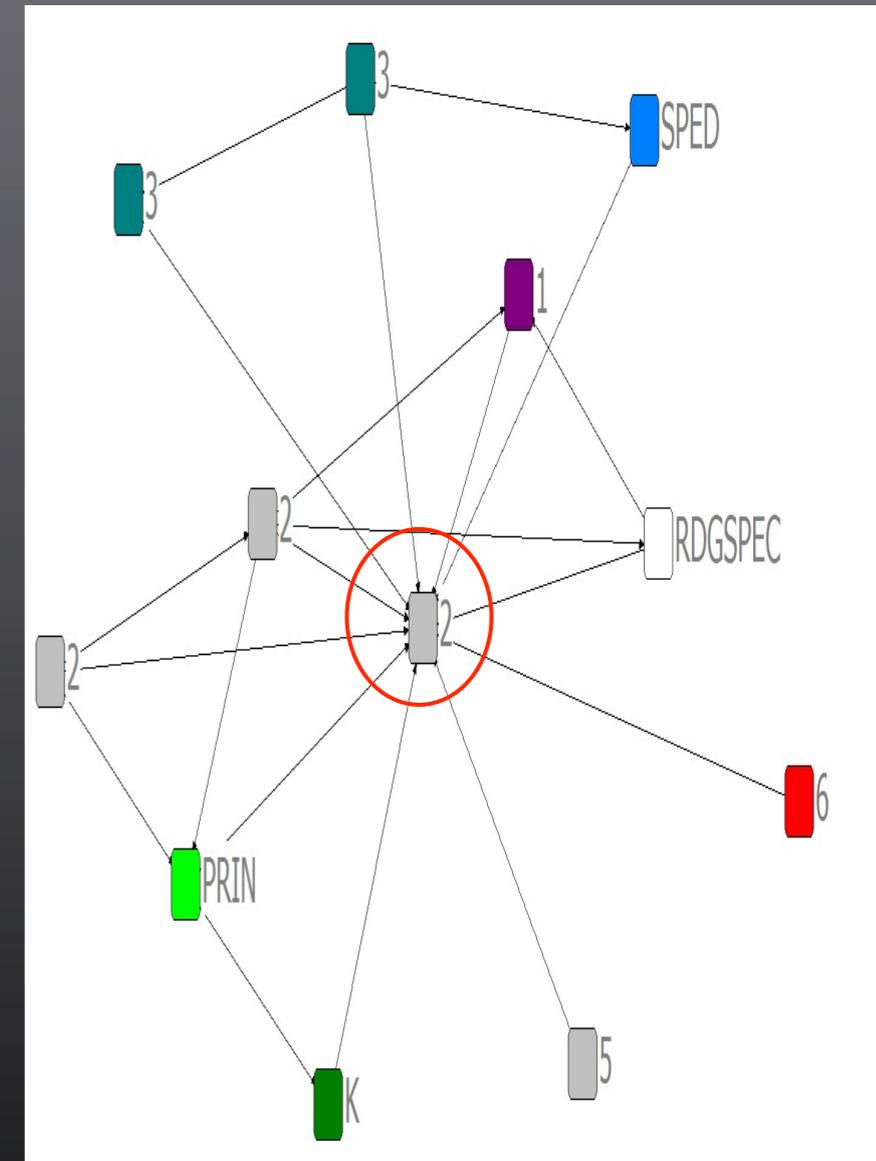
Professional Development Case (John)



2009-10



2010-11



2011-12

Training Also Serves as a Marker of Expertise

Karen (1st grade)

“Because he’s a second grade teacher....He’s kind of become the math person to see because he’s taken this extra training that nobody else in the building has done, and I know that he’s interested in math so, he’s just one that I’ve gone to that I know focuses very heavily on, I like his beliefs and the way that he has his room set up and the way that he carries himself.”

Infrastructure Redesign Promoted Advice and Information Seeking in Mathematics

Average In-Degree for Teachers Leaders and Other Teachers, Pleasantville School District

	2009-10	2010-11	2011-12
Toolbox Members (6)	1.60	2.80	2.67
Fundamental Math Participants (9)	4.33	6.00*	6.00
Math Coaches (3)	6.33	16.33**	18.00
Other Teachers (256)	1.54	1.60	1.36

*p<.05; **p<.01

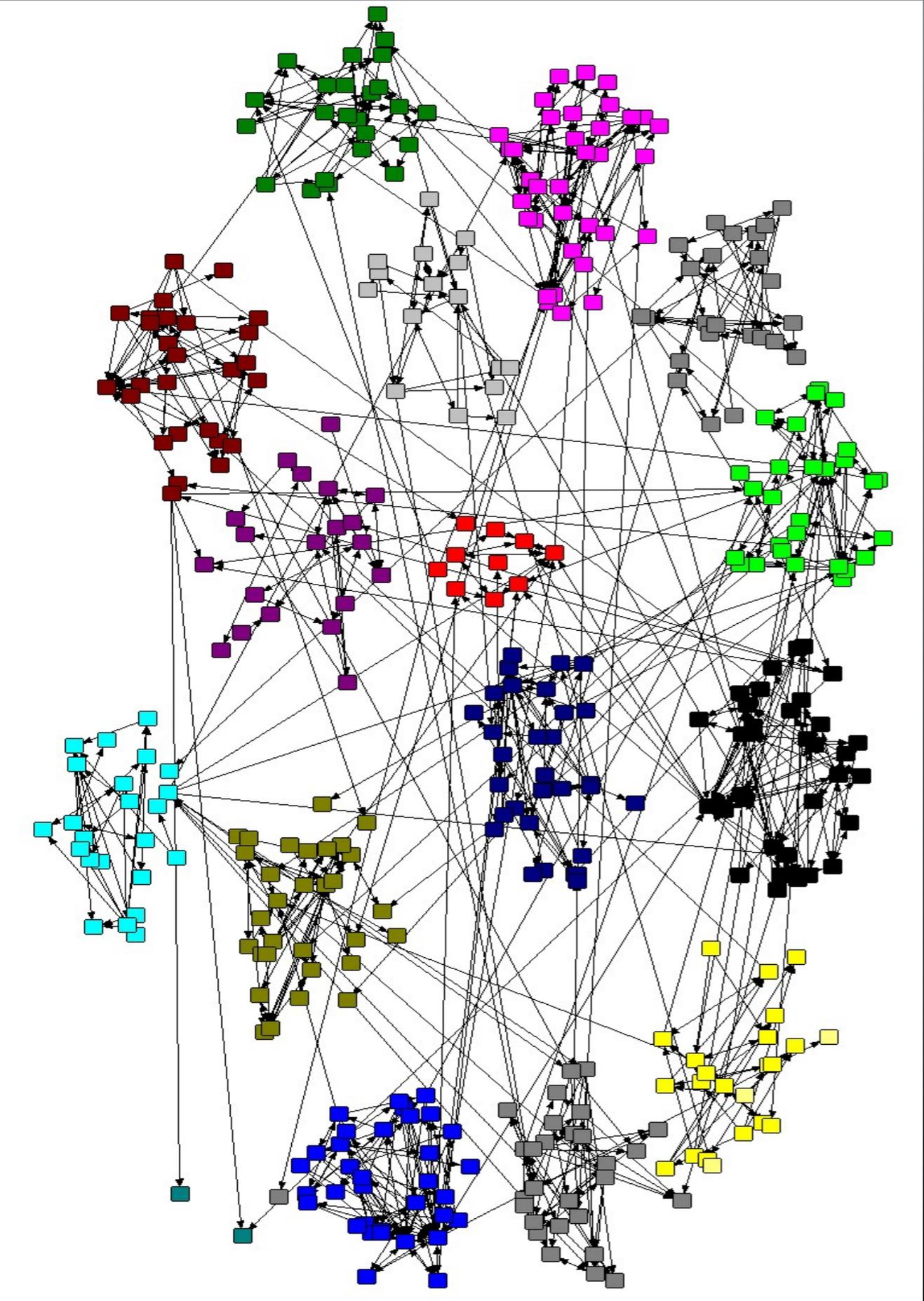
Infrastructure Redesign Promoted Brokering in Mathematics

Average Betweenness for Teachers Leaders and Other Teachers, Pleasantville School District

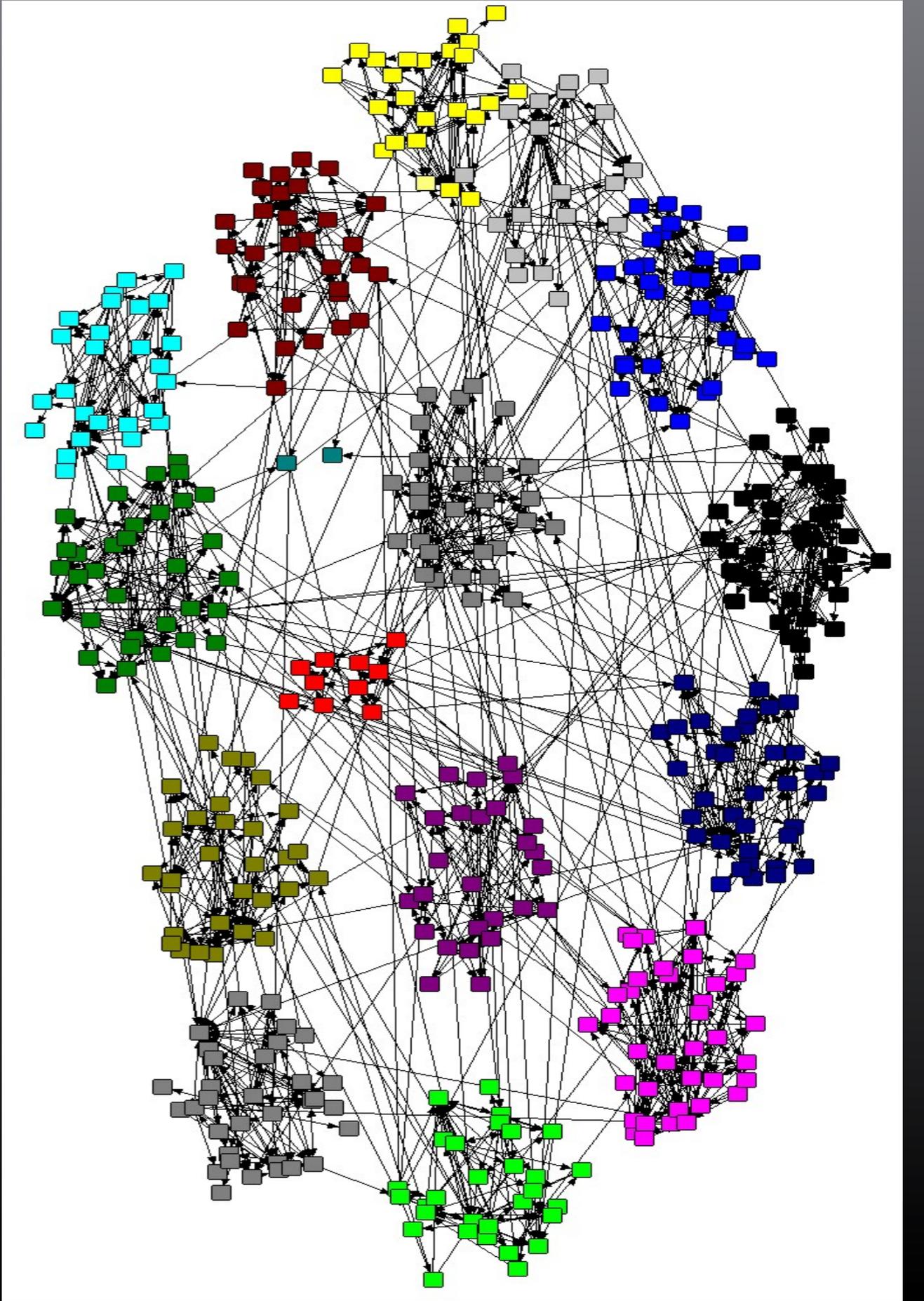
	2009-10	2010-11	2011-12
Toolbox Members (6)	5.00	75.80*	48.86
Fundamental Math Participants (9)	32.44	144.33*	115.42
Math Coaches (3)	38.67	248.67**	222.97
Other Teachers (256)	10.85	24.81*	11.90

*p<.05; **p<.01

Pleasantville District Math Network



Pleasantville District ELA Network



A Diagnostic and Design Mindset

**“We have one hunter and one gatherer ...
everyone else is a consultant”**



Rethinking Development in Education

- Get beyond an implementation mindset.
- Put diagnostic and design at the core of improving practice.
- Focus on the school system and organization as designed (formal) and as lived (informal) *in tandem*.

Framing Practice from a Distributed Perspective

School Leaders, Teachers, Students ...

School Work Practice

Situation

Tools, Routines, Positions ...

Teachers, Students ..



Diagnosis and Design

Diagnosis = identify nature or cause of something

Design = shaping things/objects/positions to purposes

Design

- System and organizational [infra]structure
 - designing infrastructures to support instruction and its improvement
 - preparing school leaders to diagnosis and design
- School administrative practice and the resources that enable it
 - Getting at the the micro processes of school administrative practice while not losing sight of macro structures
- Beyond the school principal to other formal leaders (full- and part-time)

Asking Design Questions

What is the theory of action behind the routine/tool?

What arguments explain and evaluate the routine/tool?

Why should it work?

Why might it not work?

What are the advantages of this routine?

What are the disadvantages of this routine?

How does it connect with classroom teaching and learning?



Lesson Study: Ostensive Aspect?

- *teacher-directed, select overreaching goal and research question*
- *Teachers design, collaboratively, detailed lesson plan*
- Teacher teach lesson in a real classroom as other others observe
- Teachers together discuss their observations of the lesson and redesign lesson
- Another teacher teaches redesigned lesson and group critique
- Lesson should be both relevant and useful for teachers when examining their practice.

'Kernel' Organizational Routines

- *Propagate and seed* new forms of school practice
- Key characteristics:
 - focused on teaching and student learning
 - anchored in both intended curriculum and enacted curriculum
 - build common understanding among school staff
 - build trust among staff members
 - enable mutual access to information among staff and build routes for new information to enter the school
 - facilitate tailoring of the routine by school staff to local circumstances

Publications and Presentations available online: www.distributedleadership.org

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