Leadership & Learning: Social Capital in Human Capital Development

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Northwestern University

Trondheim, Norway. February 2019

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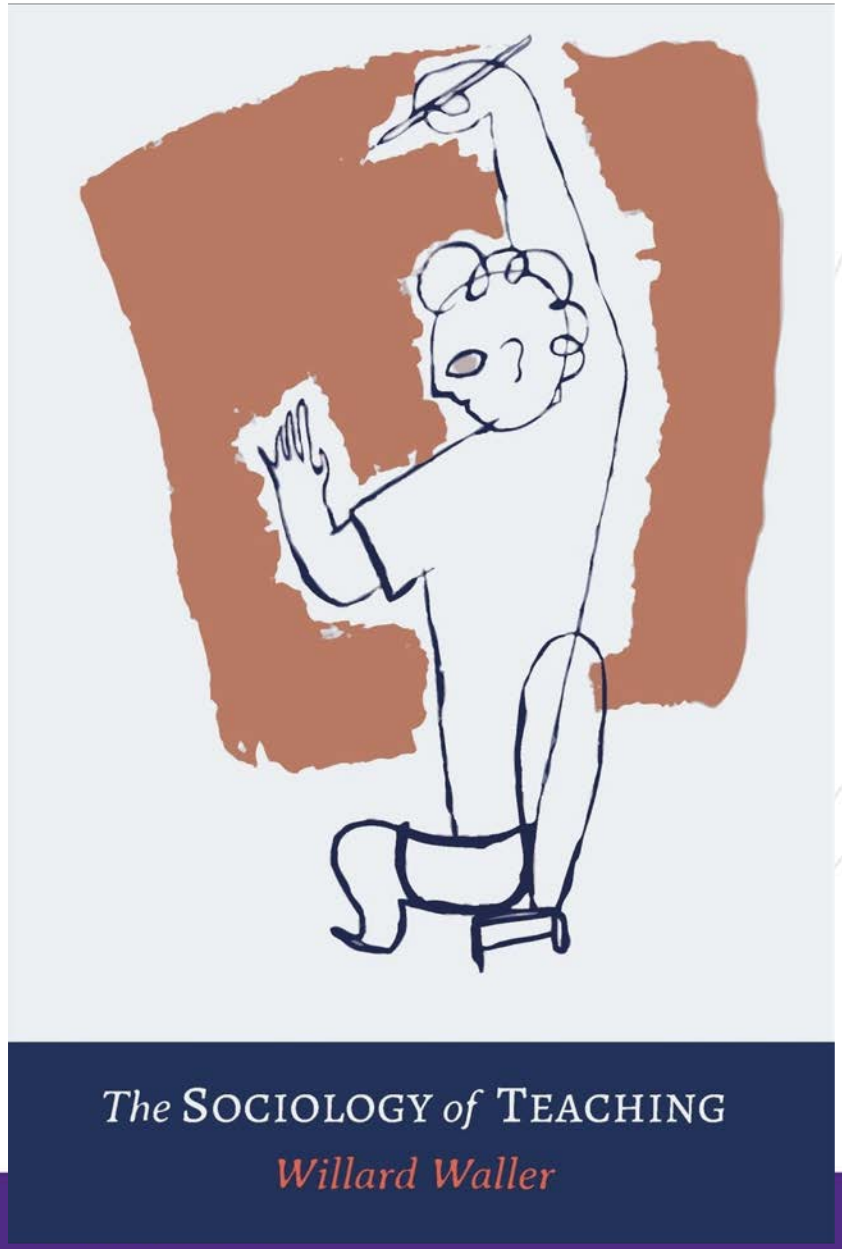
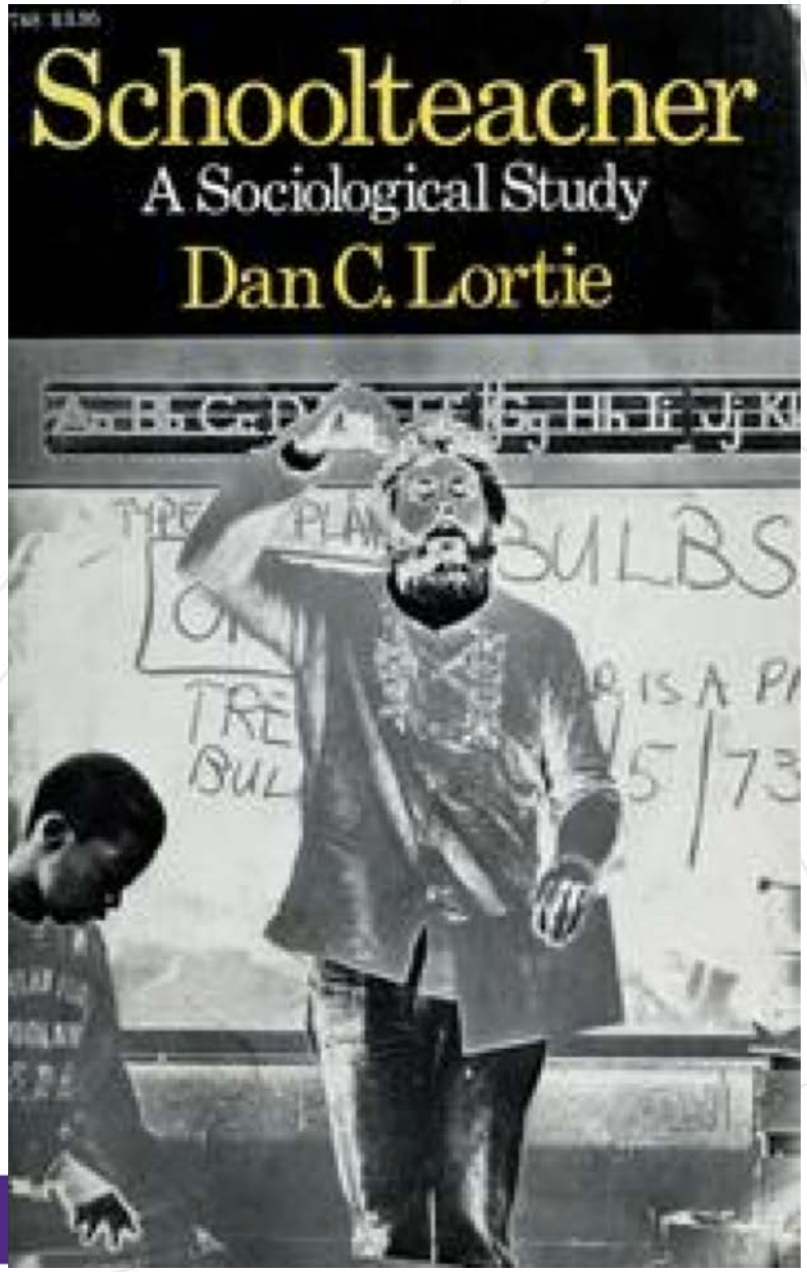
Northwestern

The Distributed Leadership Studies
http://www.distributedleadership.org

Funded by National Science Foundation, Spencer Foundation, Institute for Education Sciences, & Carnegie Corporation


The SOCIOLOGY of TEACHING
Willard Waller


Schoolteacher
A Sociological Study
Dan C. Lortie

Lost Opportunity

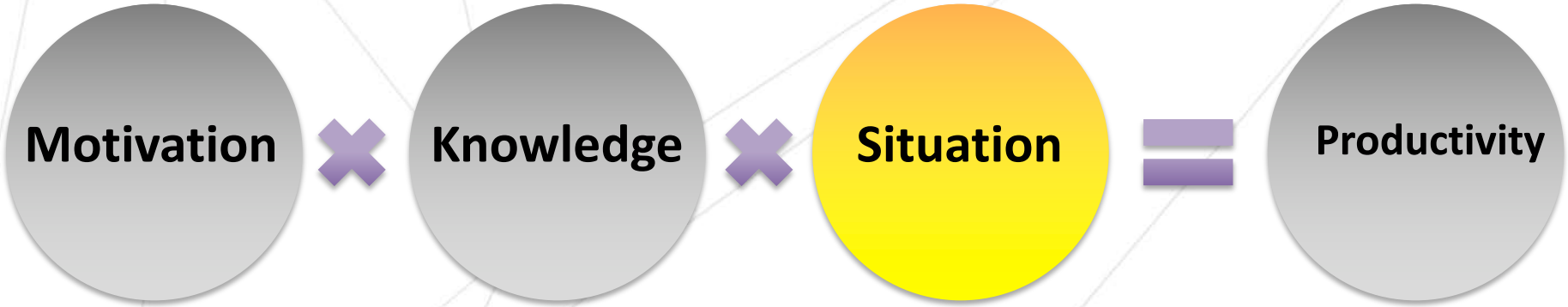
- Teaching as knowledge intensive work
- Teachers often lack the knowledge to recognize *that (*and *what)* they need to learn.
- Teachers can learn from ’seeing’ each other teach and talking about what they ‘see’.
- Teachers working together to plan lessons, discuss student work, and problem solve.

The Argument

- Considering the returns to social capital, investing in developing social capital in school systems is worthwhile.
- We can design **school systems' and schools'** educational infrastructure to influence interactions about teaching in ways that contribute to the development of social capital.
- Two critical challenges in this design work:
  - Getting the components of an educational infrastructure to **work together** in practice in ways that enable interactions about teaching among teachers and leaders
  - Attending to **multiple levels** of school systems **simultaneously** – classroom, grade/department, school, and system
- Preparing educational leaders with a 'design mindset" rather than an 'implementation mindset' is critical.

Empirical and Conceptual Anchors

Instructional Productivity



Social Capital

- Social capital—real or potential resources for action attained *through relationships* (Lin, 2001; Bourdieu, 1980, 2001; Coleman, 1988)

- Resources accessed through social relations including advice, information, materials, and support.

Research on Teacher Interactions

- Teachers' interactions with peers can inform their teaching practice.
- Teacher collaboration positively associated with student achievement.
- 20% of teachers' instructional productivity accounted for by interactions with more effective peers (Jackson & Bruegmann, 2009).

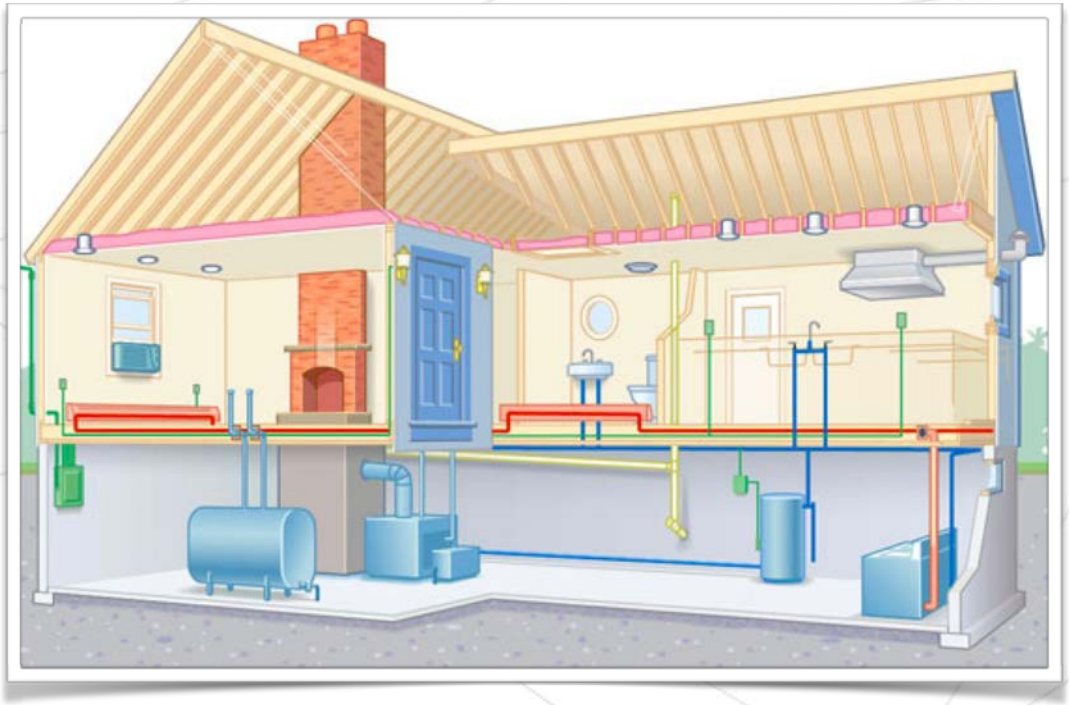
Underlying Assumptions

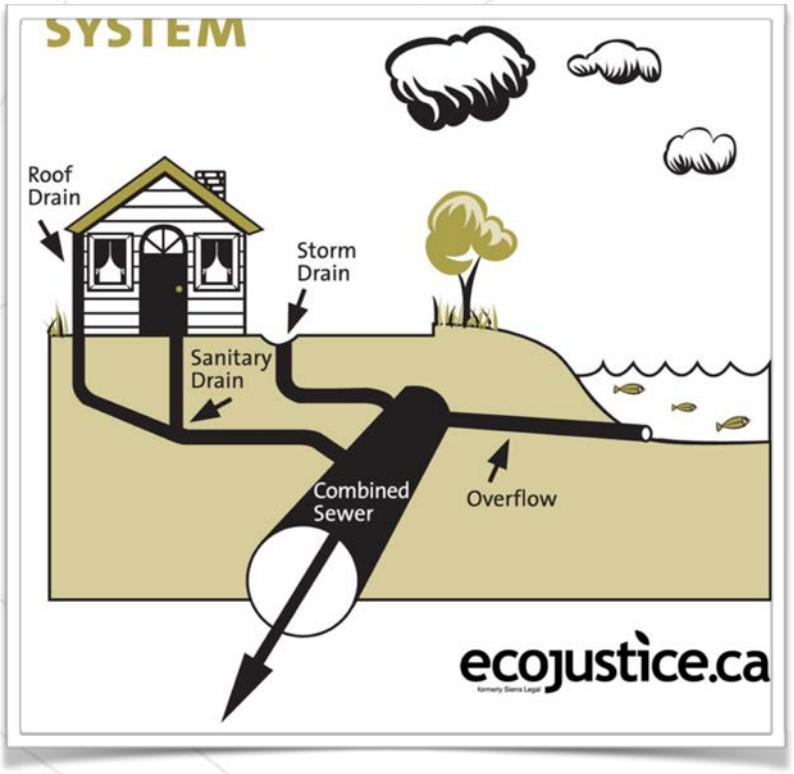
- Knowledge development key to improving teaching
- Advice and information building blocks of new knowledge
- Social relations are a source for advice and information
- On-the-job interactions enable transfer of advice and information

Blau, 1957; Bryk & Schneider, 2002; Coburn, 2001; Daly & Finnigan, 2010; Elmore, 1996; Eraut & Hirsh, 2007; Frank, Zhao, & Borman, 2004; Hill, 2004; Little, 2002; Smylie, 1995; Spillane, 2004

"Collaboration would be a lot easier if it weren't for all those collaborators."

Infrastructure





Educational Infrastructure

Educational Infrastructure

- Educational Infrastructure refers to structures and resources that school systems and schools mobilize to support teaching, maintain teaching quality, and lead improvement in teaching.

- Educational Infrastructure includes:
  - the instruments and tools that are the materials of instruction such as curriculum, curricular materials, and student assessments
  - the formal positions, routines, procedures, and rules for guiding professional learning, maintaining teaching quality, and enabling teaching improvement.
  - professional norms, values, and cognitive scripts that infuse the work.

Cohen, D., Spillane, J. P., & Peurach, D. (in press). The dilemmas of educational reform. *Educational Researcher*.

Hopkins, M., Spillane, J. P., Jakopovic, P., & Heaton, R. M. (2013). Infrastructure redesign and instructional reform in mathematics: Formal structure and teacher leadership. *Elementary School Journal, 114*(2), 200-224.

Research Approach


New Hampshire
Vermont
Massachusetts
Maine
Washington
Montana
North Dakota
Minnesota
Oregon
Wisconsin
South Dakota
Idaho
Michigan
New York
Wyoming
Rhode Island
Nebraska
Iowa
Pennsylvania
Connecticut
Nevada
Utah
Illinois
Indiana
Ohio
New Jersey
Colorado
Delaware
Kansas
Missouri
Virginia
Maryland
California
Kentucky
West Virginia
North Carolina
Tennessee
Arizona
Oklahoma
Arkansas
South Carolina
New Mexico
Alabama
Georgia
Mississippi
Texas
Louisiana
Florida
Alaska
Hawaii

Auburn Park: A Case of School System Educational Infrastructure Redesign

- New mathematics curriculum (Investigations) & revised math assessments
- System Data Dashboard on student achievement
- Professional development for 'teacher leaders'
- Strategic selection of teacher leaders
- Creation of math teacher leader and coach position
- System and school organizational routines
  - System level Mathematics Leadership Committee
  - Professional Learning Communities & team meetings at grade level

Research Approach

- **Research Site:**
  - Auburn Park, 5,900 students in 14 Elementary/Primary Schools

- **Data Collection:**
  - Annual survey of staff in all schools (2010, 11, 12, 13, & 15) with response rates of 81%, 95%, 94%, 94%, and 96%.

  - Semi-structured interviews with purposeful sample of staff in 5 elementary schools in 2011-12 and again in 2014-15 (N = 33, 31).

  - Administrative records including student achievement and school architectural plans.

Findings

American Educational Research Journal
Month XXXX, Vol. XX, No. X, pp. 1–40
DOI: 10.3102/0002831217743928

School District Educational Infrastructure and Change at Scale: Teacher Peer Interactions and Their Beliefs About Mathematics Instruction

James P. Spillane
Northwestern University
Megan Hopkins
University of California, San Diego
Tracy M. Sweet
University of Maryland

While current reform efforts press for ambitious changes to teachers' instructional practice, teachers' instructional beliefs are also consequential in such efforts as beliefs shape teachers' instructional practice and their responses to instructional reforms. This article examines the relationship between teachers' instructional ties and their beliefs about mathematics instruction in one school district working to transform its approach to elementary mathematics education. Quantitative results show that while teachers' beliefs did not predict with whom they interacted about mathematics instruction, teachers' interactions with peers about mathematics instruction were associated with changes in their beliefs over time. Qualitative analysis confirms and extends these findings, revealing how system-level changes in the district's

Teachers' Beliefs About Mathematics Teaching

- 60% of teachers more inquiry-oriented beliefs over time.
- 30% of teachers less inquiry-oriented beliefs over time.
- 10% of teachers - no change in their beliefs about mathematics instruction.

A Shift in Teachers' Beliefs

Results From Multilevel Models for Change in Teachers' Beliefs (n = 222)

		Model A	Model B	Model C
Fixed effects				
Composite model	Intercept (initial status)	−0.142	−0.053	−0.296
		(0.076)	(0.107)	(0.138)
	Year (rate of change)	0.051*	0.024	0.023
		(0.022)	(0.031)	(0.030)
	Access to peer beliefs		0.076*	0.081*
			(0.032)	(0.032)
	Years of experience			−0.017**
				(0.006)
Variance components				
Level 1	Within-person	0.371	0.377	0.377
		(0.024)	(0.028)	(0.028)
Level 2	In initial status	0.554	0.622	0.588
		(0.074)	(0.100)	(0.097)
	In rate of change	0.011	0.001	0.001
		(0.006)	(0.008)	(0.008)
Goodness-of-fit statistics				
	Akaike Information Criterion	1,952.57	1,580.32	1,574.89
	Bayesian Information Criterion	1,976.02	1,607.03	1,606.05

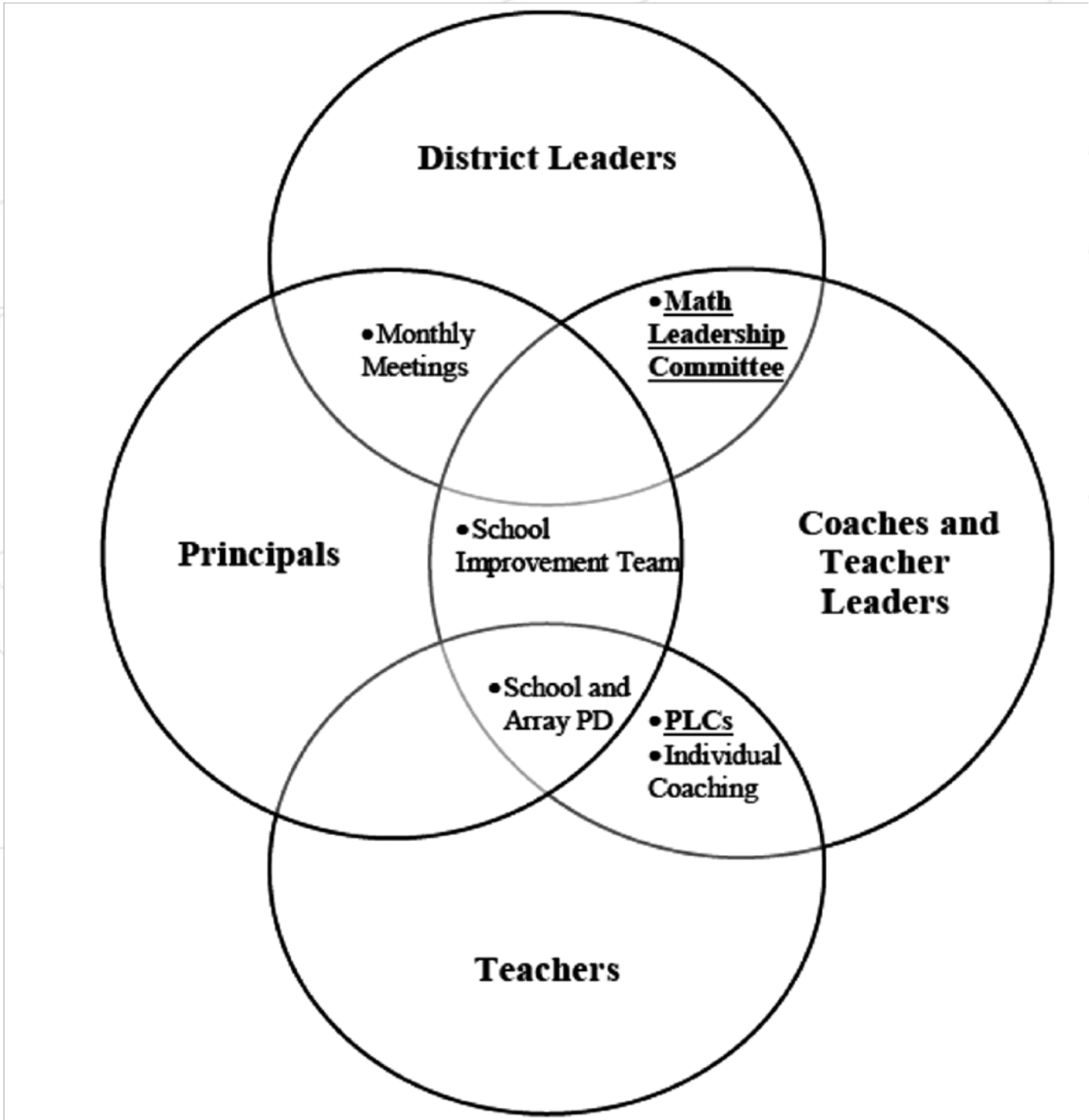
Note. Standard deviations in parentheses.
*$p < .05$. **$p < .01$.

Why?

- Teachers indicated more inquiry-oriented beliefs when they interacted with peers who indicated more inquiry-oriented beliefs in previous year.

- Teachers indicated less inquiry-oriented beliefs when they interacted with peers who indicated less inquiry-oriented beliefs in previous year.

- Teachers' instructional beliefs about mathematics were **not** predictive of who they sought out for advice and information about mathematics.


District Leaders
•Monthly Meetings
•Math Leadership Committee
Principals
•School Improvement Team
Coaches and Teacher Leaders
•School and Array PD
•PLCs
•Individual Coaching
Teachers

Organizational Routines Support Boundary Practice

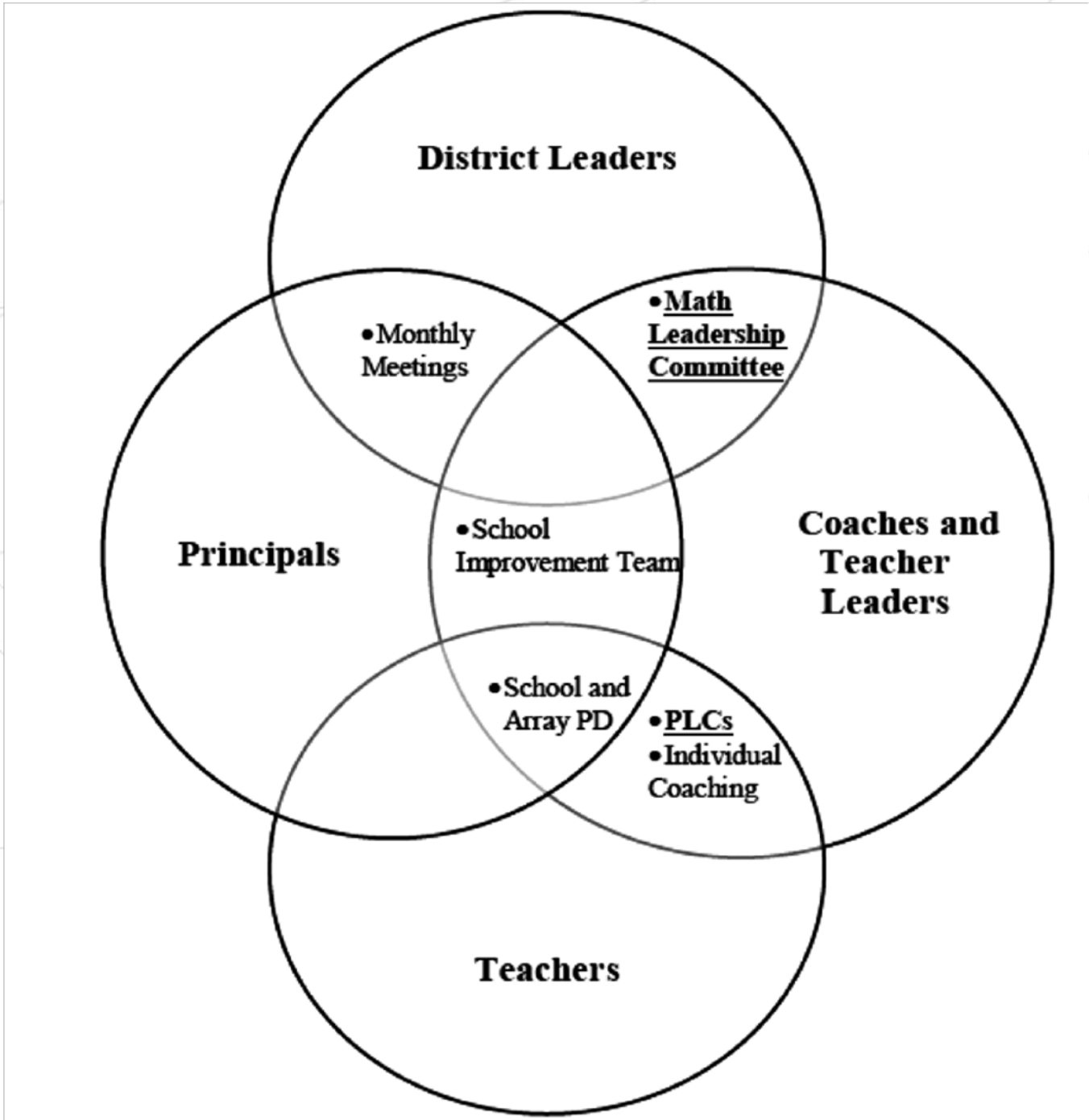
Jodie, Special Education Teacher

We're given a lot of training in the committee that we're expected to bring back to the buildings, and so we hear about a lot of things . . . I think that deepens the understanding and kind of the light bulb goes on of, "These are things I need to be doing.

Boundary Practice and Boundary Spanners

Katie 6th grade teacher

I talk to . . . the other sixth grade teacher because she is on the committee . . . that's who I go to because she's kind of the lifeline to the curriculum department at central office. I'll tell her that I really struggled with [the curriculum unit].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Teachers

Boundary Spanners and Practices

We have had that benefit of having [Gabrielle] on the [district] math leadership [routine] and so she was looked upon as you know more of an expert. And she would come back and share everything with us...we kind of felt more in the math loop than maybe some of the other teams

Clarissa, 1st grade

Our [grade] team plans and we get to collaborate together... our math coach [Mary]... when we're planning together if we have a question she's always there to help... she knows a lot..."

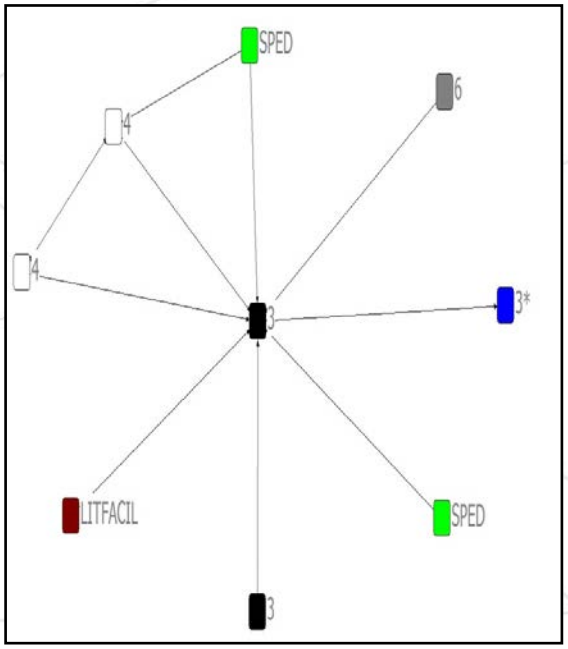
Rachel, Kindergarten

Coach as Boundary Spanner

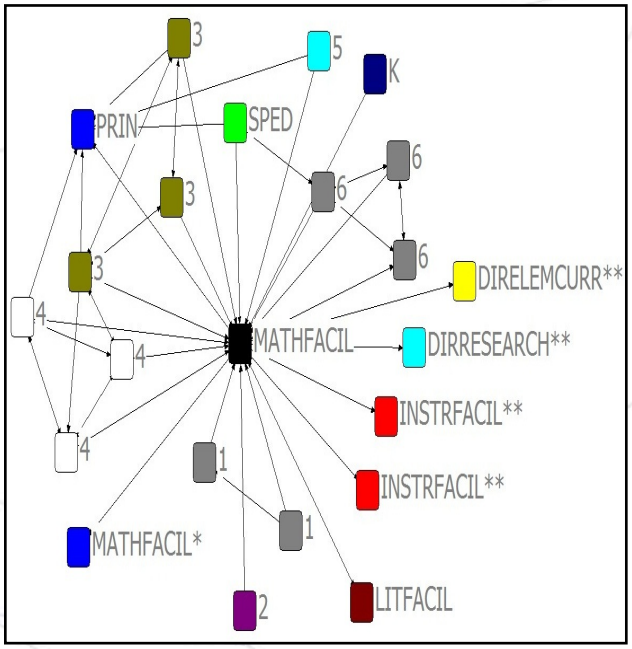
Angie, Special Education

"[Emily] ... was my co-worker, just a third grade teacher. … 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."

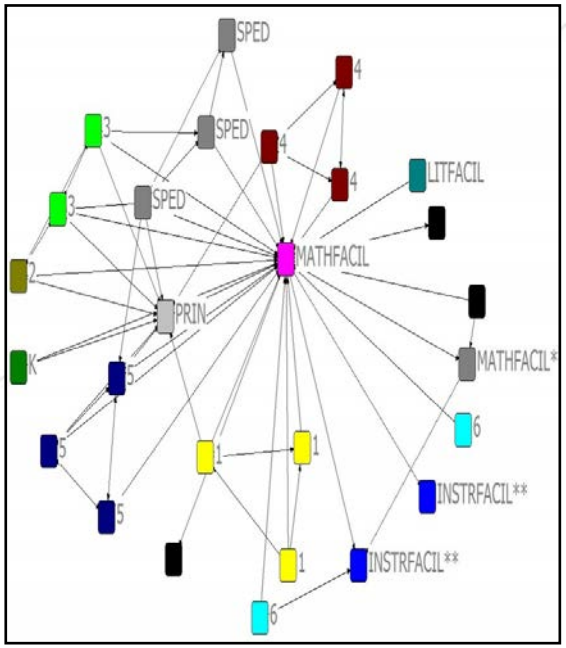
Creation of Coach Position Transforms Interactions *about Mathematics*



2009-10



2010-11



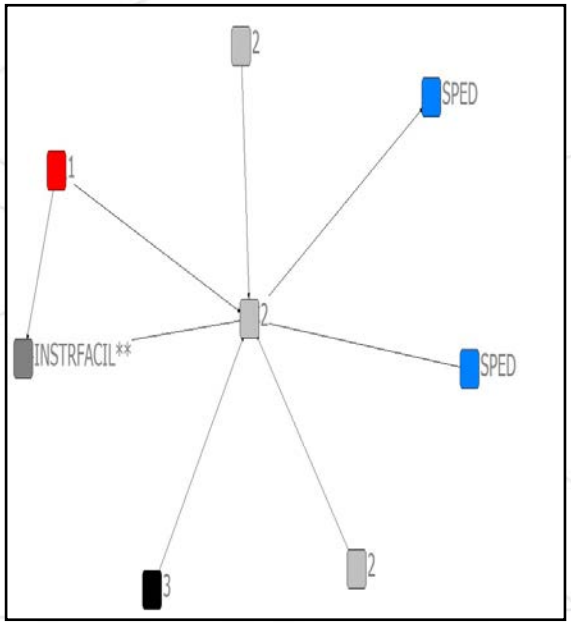
2011-12

Math Teacher Leader as Boundary Spanner

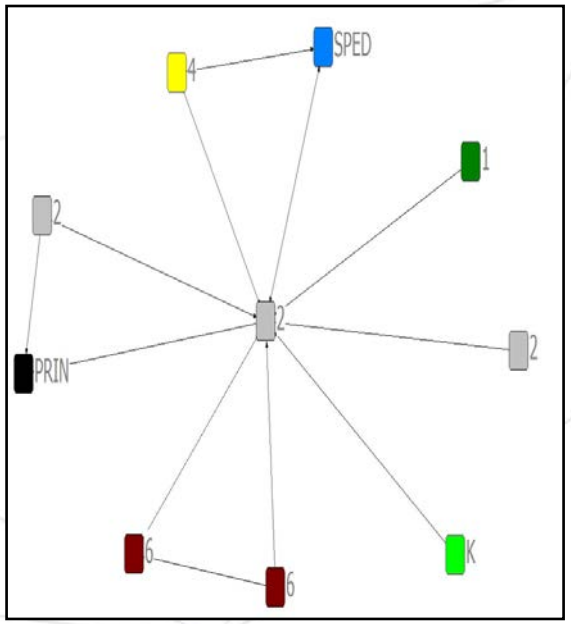
Karen (1st grade)

"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."

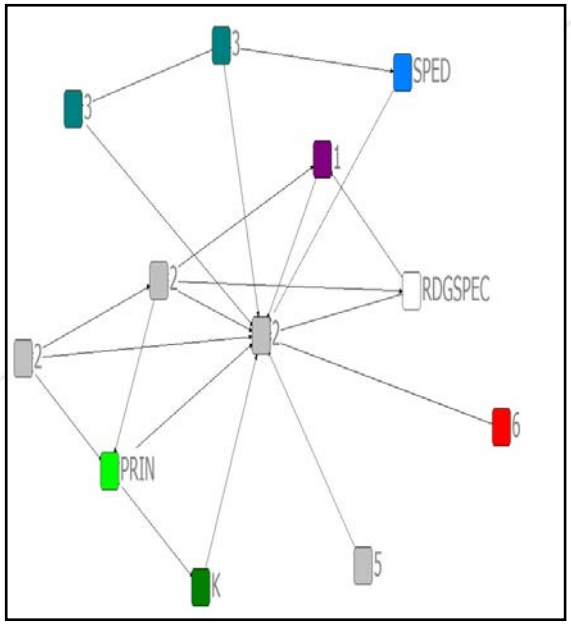
Math Teacher Leaders as Boundary Spanners



2009-10



2010-11



2011-12

Curriculum as Boundary Object

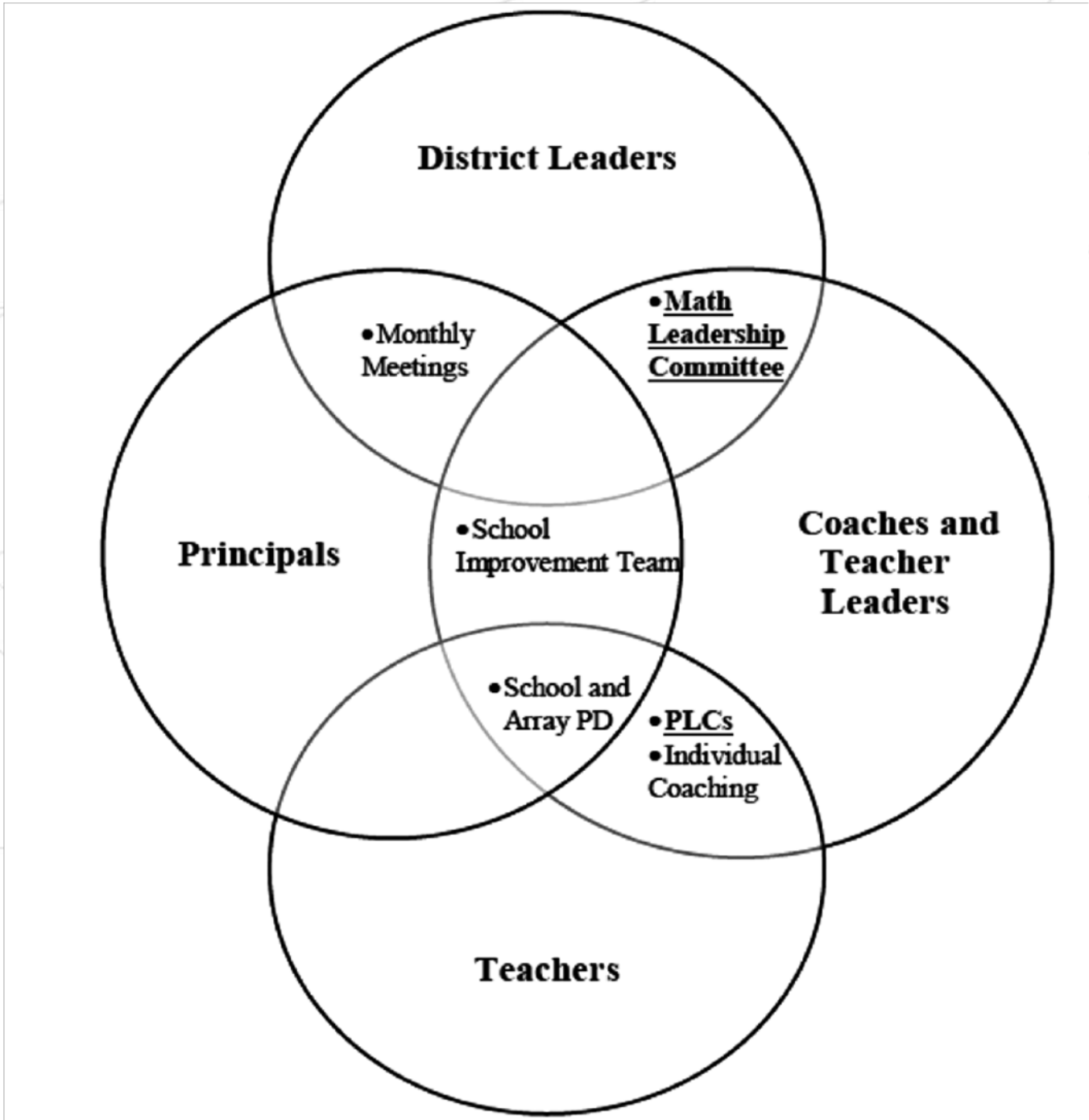
Lucy,
Kindergarten
teacher

When we had just the regular curriculum, there really wasn't much to discuss. We were both on page 20. Whereas now there's so many different strategies and things people are doing to help emphasize Investigations. I definitely think there's more room for discussion than there used to be.

Student Assessment Responses: As Boundary Object

Carmen,
Grade 5

They're helping me think through, "Is this an appropriate response for a fifth grader?" Sometimes I think it's not, but she'll point out, "But they did this and this" and I'll have not thought about that . . . helping me analyze student responses and just show understanding.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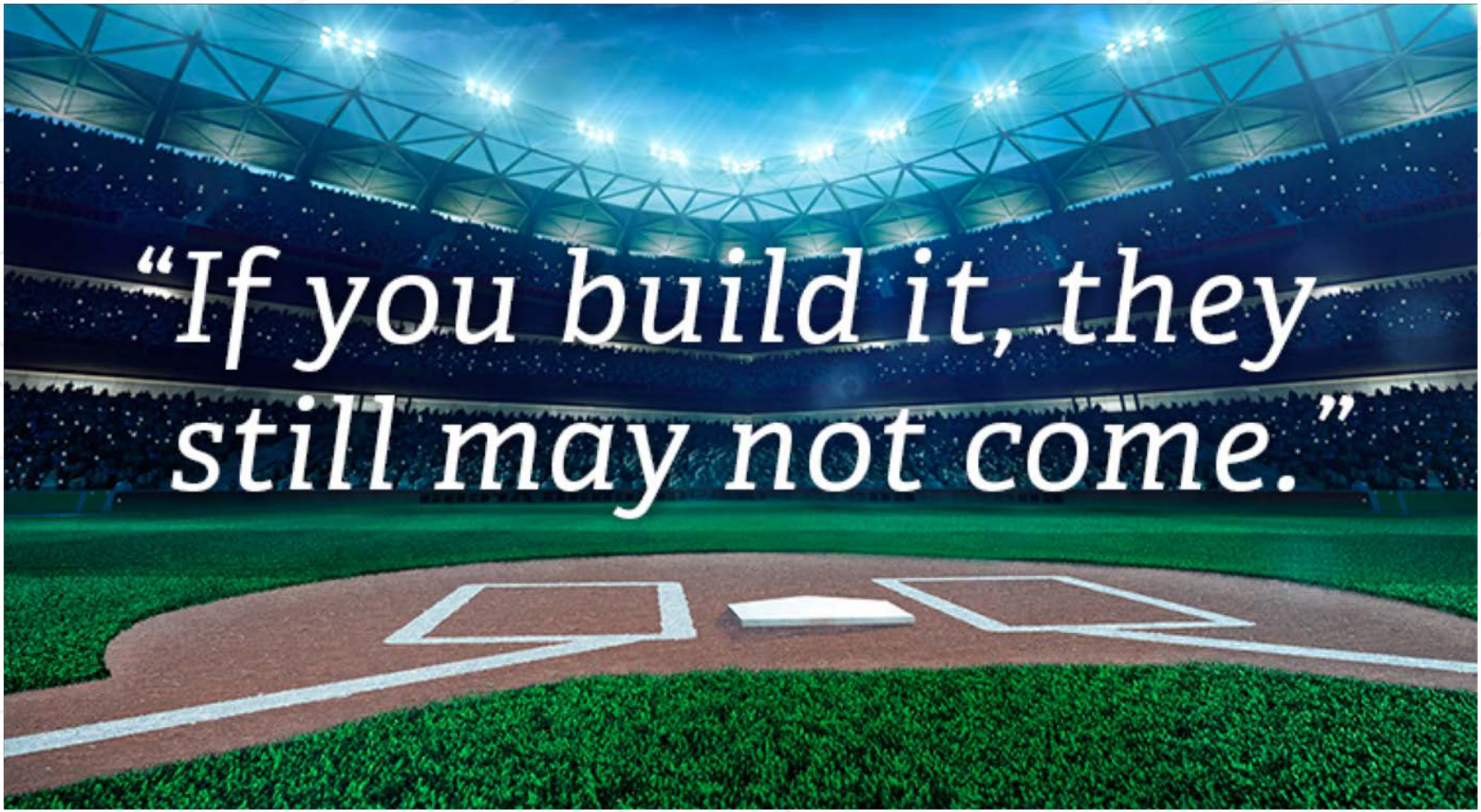
Infrastructure Redesign Promoted Brokering in Mathematics

	2009-10	2010-11	2011-12
Math Leadership Committee Member (6)	5.00	75.80*	48.86
Teacher Leaders (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

* $p < 0.05$, ** $p < 0.01$


“If you build it, they
still may not come.”

Bureaucratic (Control) Arrangements

Evelyn, Special Education

"It's been in a way mandated by the school district. It's kind of been like, 'You will work as a team whether you want to or not. This is your team so figure it out.'"

Collegial (Commitment) Arrangements

Brenda, Kindergarten Teacher

Leading the Professional Learning Community meeting depends on what the theme for it is. We all put in our ideas and then kind of come together it's a collaborative effort.

Bureaucratic & Collegial Over Time

Georgia, principal

Over the years it's changed as we first moved into the [PLC] process. I was a lot more involved as far as setting up what they would talk about, leading the discussions. …. And the teams, their capacity to work as purposeful teams has really grown over time so they develop their own agendas …it's left up to them. They have ownership.

Educational Infrastructure

Educational Infrastructure and 'On the Job' Interactions about Teaching

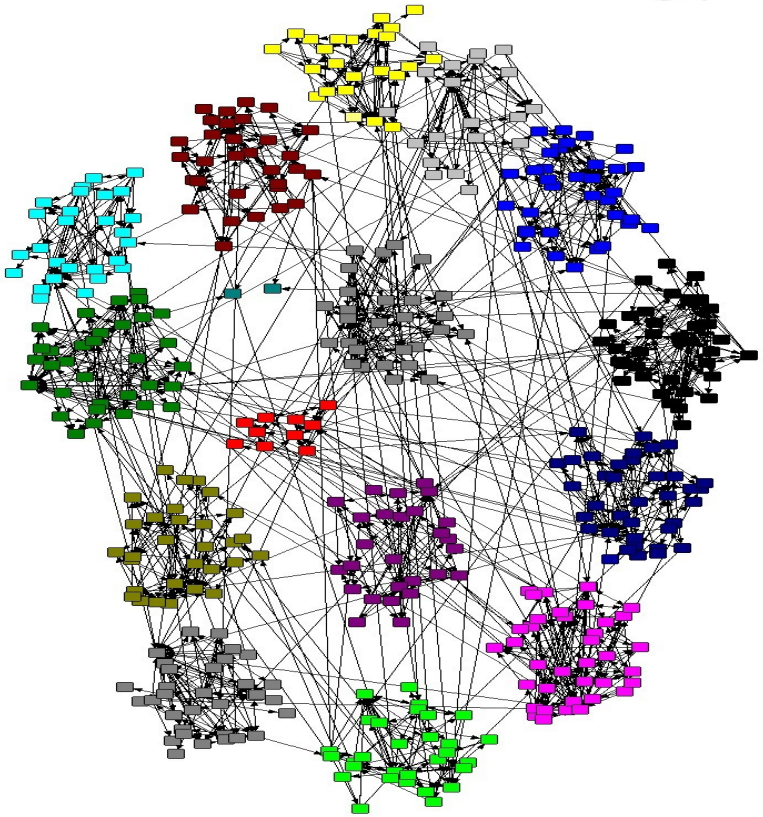
- The **school system's** educational infrastructure enables (and constrains) interactions about mathematics instruction – the who, the what, and the how of school staff talk about teaching.

- To understand how educational infrastructure works to shape interactions among school staff it is necessary to:
  - attend to how educational infrastructure **components** work in **interaction with one another,** rather than in isolation
  - attend to **multiple levels simultaneously** – classroom, grade/department, school, and system levels

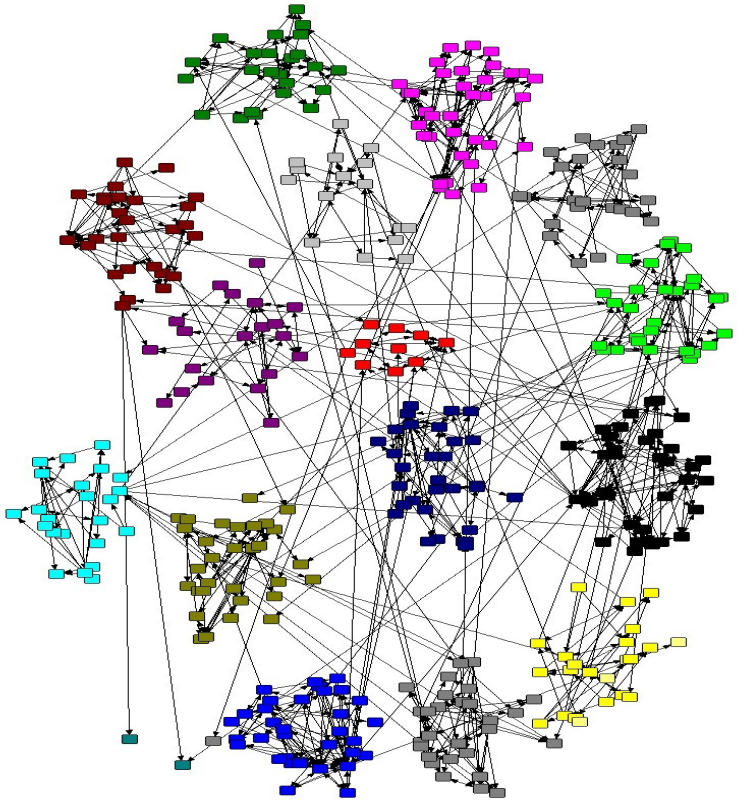
- School and system **leadership** critical in **designing**, **implementing**, **institutionalizing** and **maintaining** educational infrastructure.


Centre
Pompidou
P

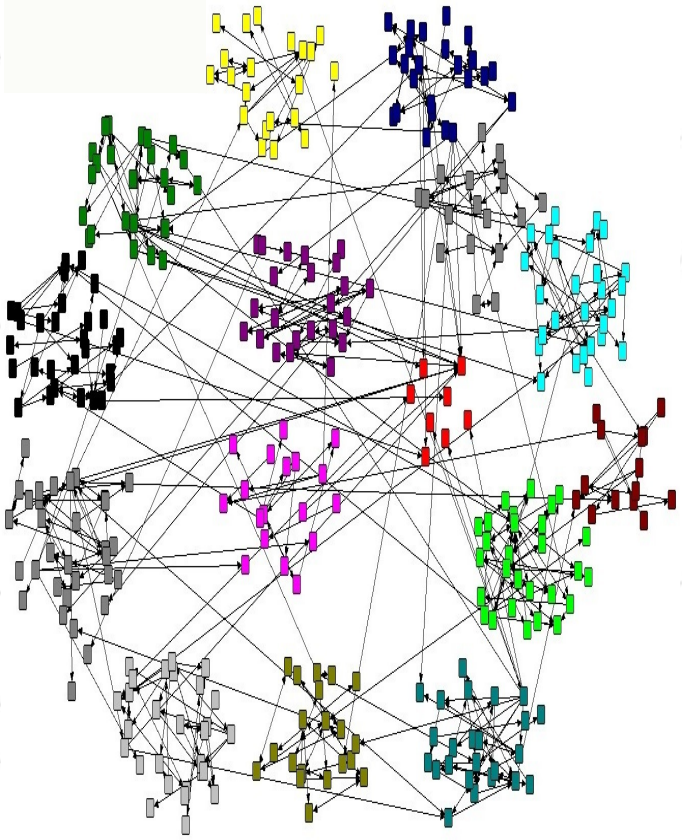
Systemwide Instructional Advice and Information Interactions about English Language Arts



Systemwide Instructional Advice and Information Interactions about Mathematics



Systemwide Instructional Advice and Information Interactions about Science



Spillane, J. P., & Hopkins, M. (2013). Organizing for instruction in education systems and school organizations: How the subject matters. *Journal of Curriculum Studies, 45*(6), 721-747.

Physical Infrastructure Matters

Research Article

AMERICAN SOCIOLOGICAL ASSOCIATION

Sociology of Education
XX(X) 1–23

DOI: 10.1177/0038040717696151
http://soe.sagepub.com
SAGE

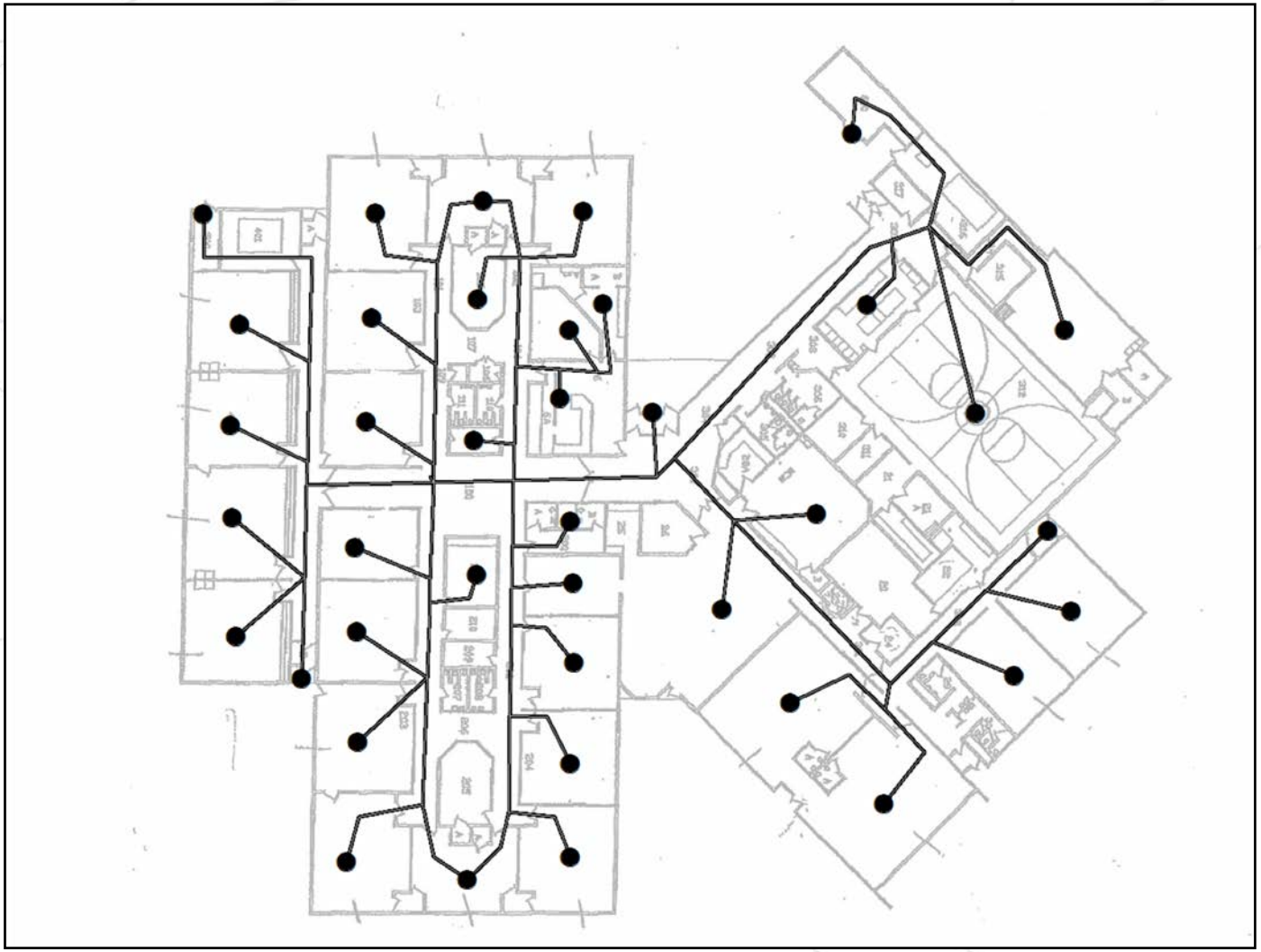
The Elephant in the Schoolhouse: The Role of Propinquity in School Staff Interactions about Teaching

James P. Spillane[1], Matthew Shirrell[2], and Tracy Sweet[3]

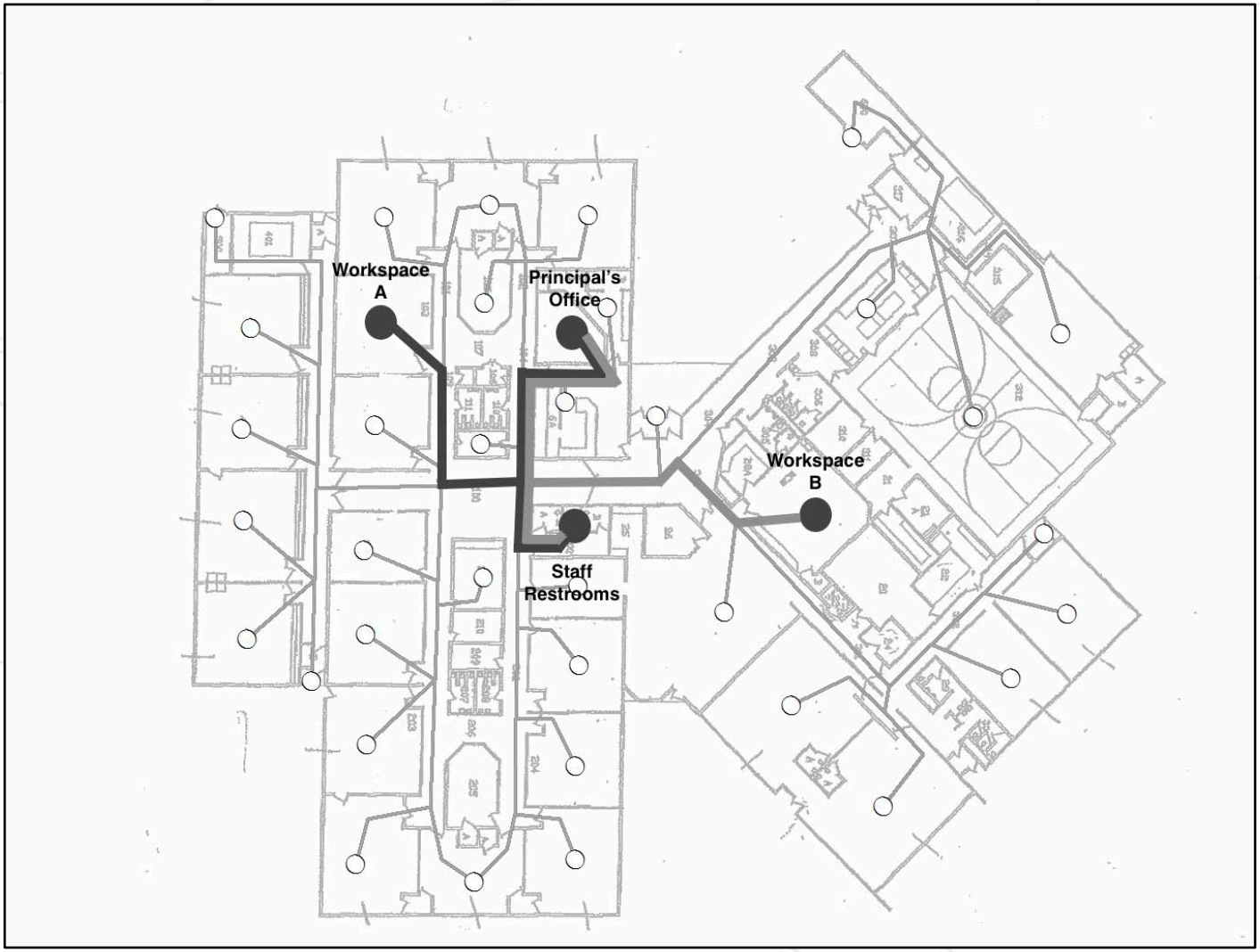
Abstract

Although the physical arrangement of workspaces can both constrain and enable interactions among organizational members, sociological research in education has not extensively examined the role of physical proximity in determining work-related social ties among school staff. Using social network analysis, this article explores the relationship between physical proximity and instructional advice seeking among school staff in all 14 elementary schools in one U.S. school district over four years. Results show that school staff whose workspaces are located closer to one another, and whose paths likely cross more frequently in their day-to-day work within the school building, are more likely to talk with one another about their work. Findings argue for more careful consideration when assigning school staff to workspaces, as the physical proximity of school staff appears to play a significant role in who talks to whom about instruction.

Measuring Walking Distance using Georeference maps



Functional Zone Overlap: Using ArcGIS to Trace Walking Routes



Reduced Effort and Cost of Interaction

Our kindergarten team is kind of spread out but I'm **right next door** to [Arianna] and she teaches kindergarten. And so she's a given that I always, **I always go to her first… it's kind of easy** to be like, 'OK, so my kids are doing this today in math.

Rachel,
Kindergarten teacher

Chance Encounters

Carol,
first grade teacher

We were doing a graphing activity and the students graphed and we [other teachers in her grade level] were **discussing the graph out in the hallway** and um, **she happened to walk by** and she just kind of sat down and joined us and **so then I just asked her**… some feedback on, you know, how my conversation went and what I could have [done] to... deepen the kids' understanding.

Encounters by Functional Zones

"[A colleague's] room is kind of on the curve as you go down to the lounge, so in my, in my planning time when I go to check my mailbox and come back and I've seen the kids on the floor and I see that they're interacting, that's kind of when **I kind of just popped in**, peeked in."

Karen,
first grade
teacher

Educational Infrastructure and Social Capital Development

- A **school system's** educational infrastructure can shape interactions among teachers about teaching in ways that contribute to the development of social capital.
- Attention to how different educational infrastructure components **interact** in practice to enable professional learning on the job.
- Attention to **multiple levels** of the school system **simultaneously** – classroom, grade/department, school, and school system.
- Critical role of school and system **leadership** in designing and implementing educational infrastructure.
- Beyond an implementation mindset; cultivating a **design mindset** in preparing and developing educational leaders.

Focusing on the Social Side of Capability in School Systems

- Building social capital in order to develop human capital.
- Embracing new conceptions of expertise as distributed and engaging with their entailments.
- Recognizing the affective dimension of human learning.
- Recognizing that the school subject matters in efforts to develop social capital.

Moving Forward: Learning by Comparing

- Taking the 'school system in environment' as the unit of analysis.
- Comparing educational systems in similar and different (national) environments:
  - how they *define* teaching;
  - how they design their educational infrastructures
- Purposeful sample of six school systems – public, private, hybrid systems.

More At:

- **http://www.distributedleadership.org**

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