Friday, April 8, 2016 | 10:00 am – 5:30 p.m.
Washington Court Hotel | 525 New Jersey Ave, NW | Washington, D.C.

THE SOCIAL SIDE OF EDUCATION:

How Social Aspects of Schools and School Systems Shape Teaching and Learning

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School Organizational Contexts, Teacher Turnover, and Student Achievement

Matthew A. Kraft

Brown University

The whole is greater than the sum of its parts.

– Aristotle, Metaphysica.

Overview of Two Studies

How Context Matters in High-Need Schools

(Johnson, Kraft & Papay, 2012)

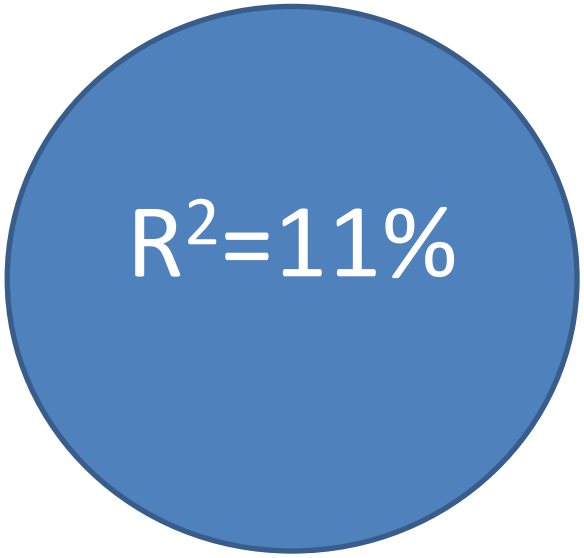
- Compare relationship between school climate, turnover rates and student achievement across schools in Massachusetts

School Organizational Contexts, Teacher Turnover, and Student Achievement

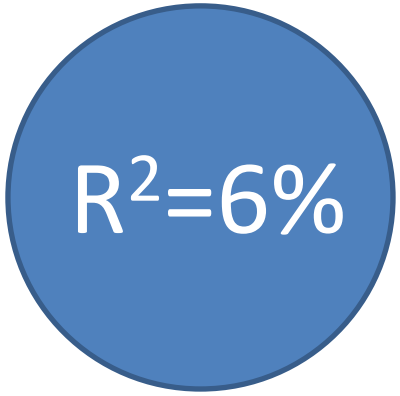
(Kraft, Marinelle & Yee, 2015)

- Compare how changes in school climate over time correspond to changes in turnover and achievement in NYC middle schools

Working conditions explain more variation in teacher satisfaction than student characteristics

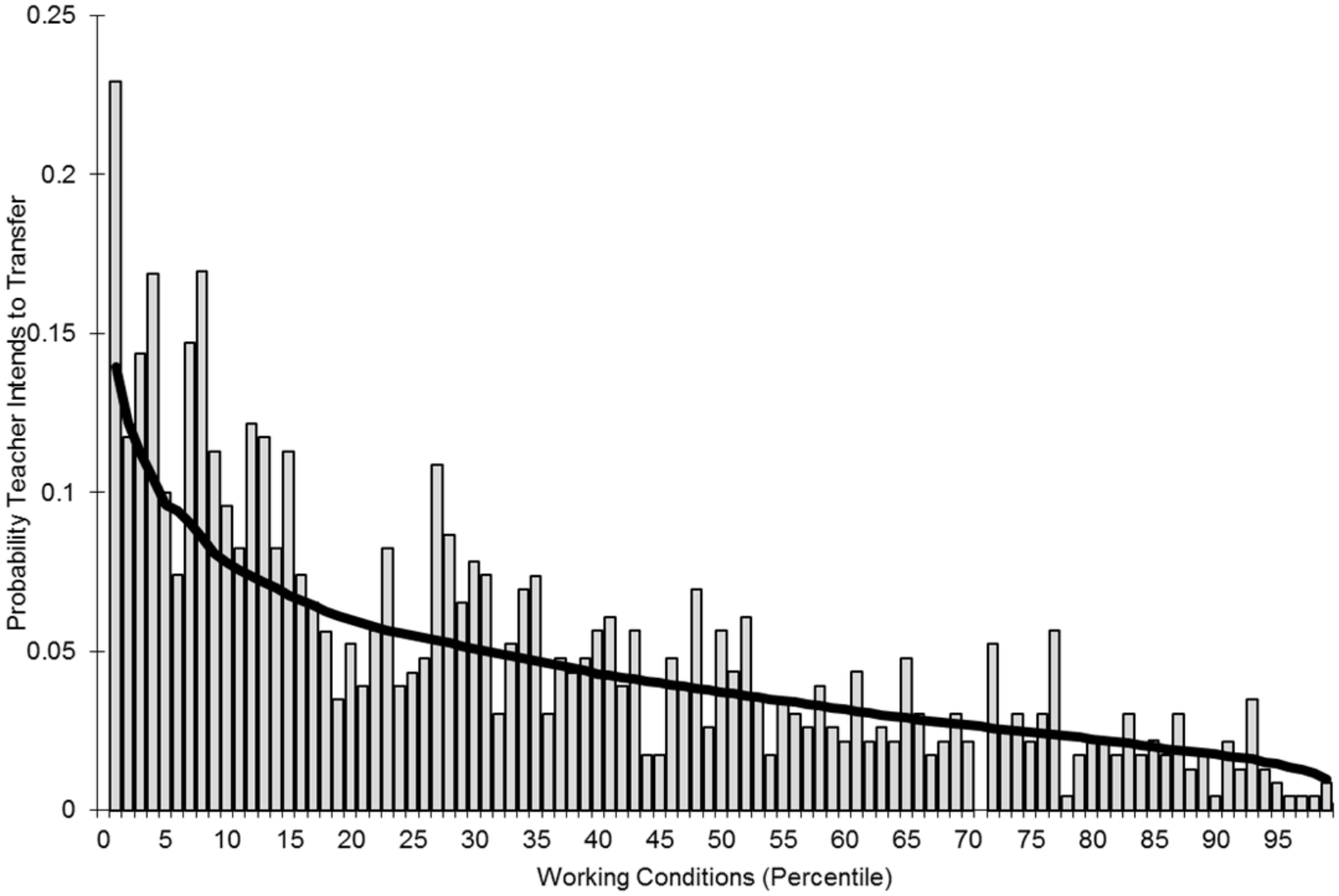


Overall Working Conditions (teacher survey responses)

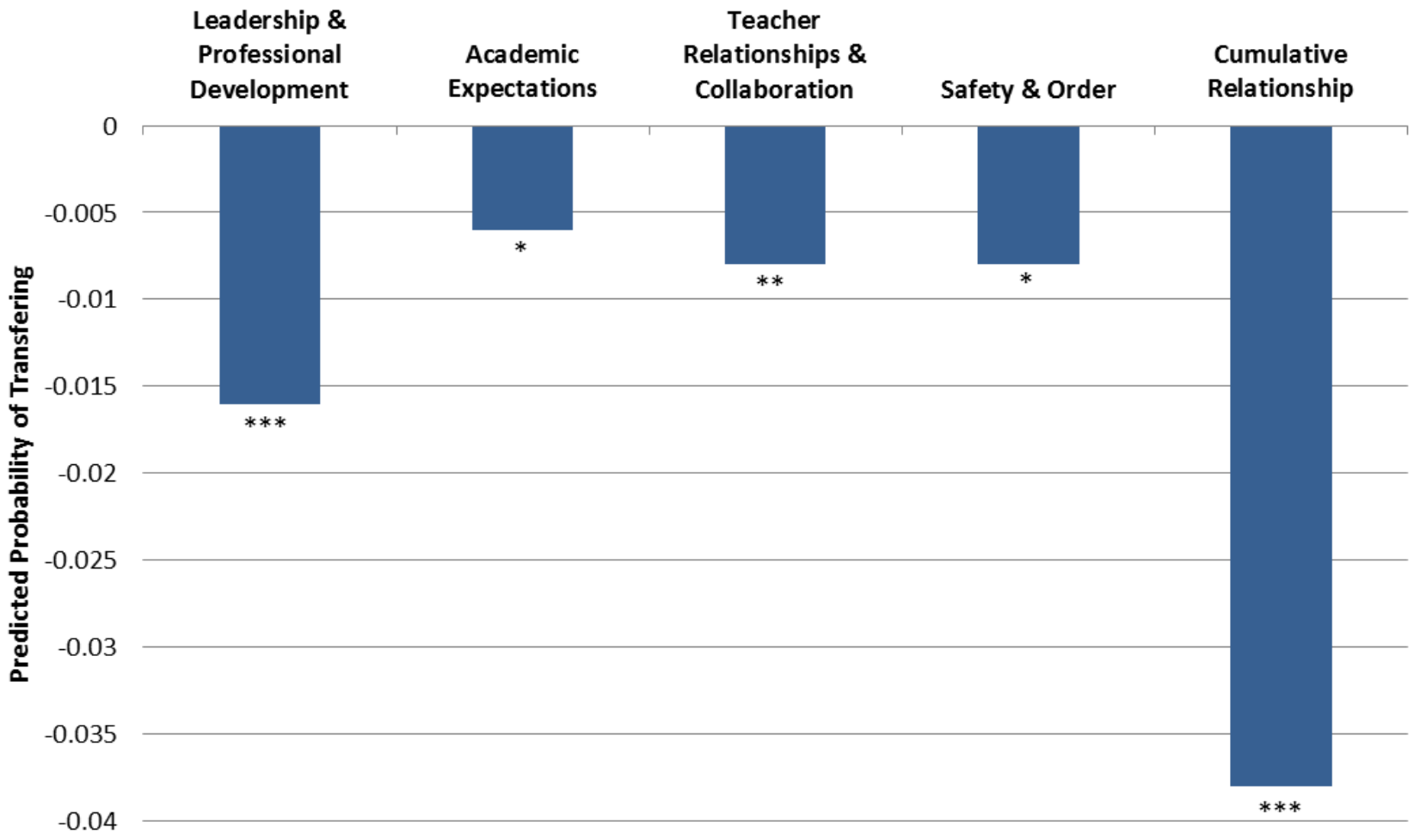


Proportion Low-Income
Proportion Minority Students
Avg. Student Demographics

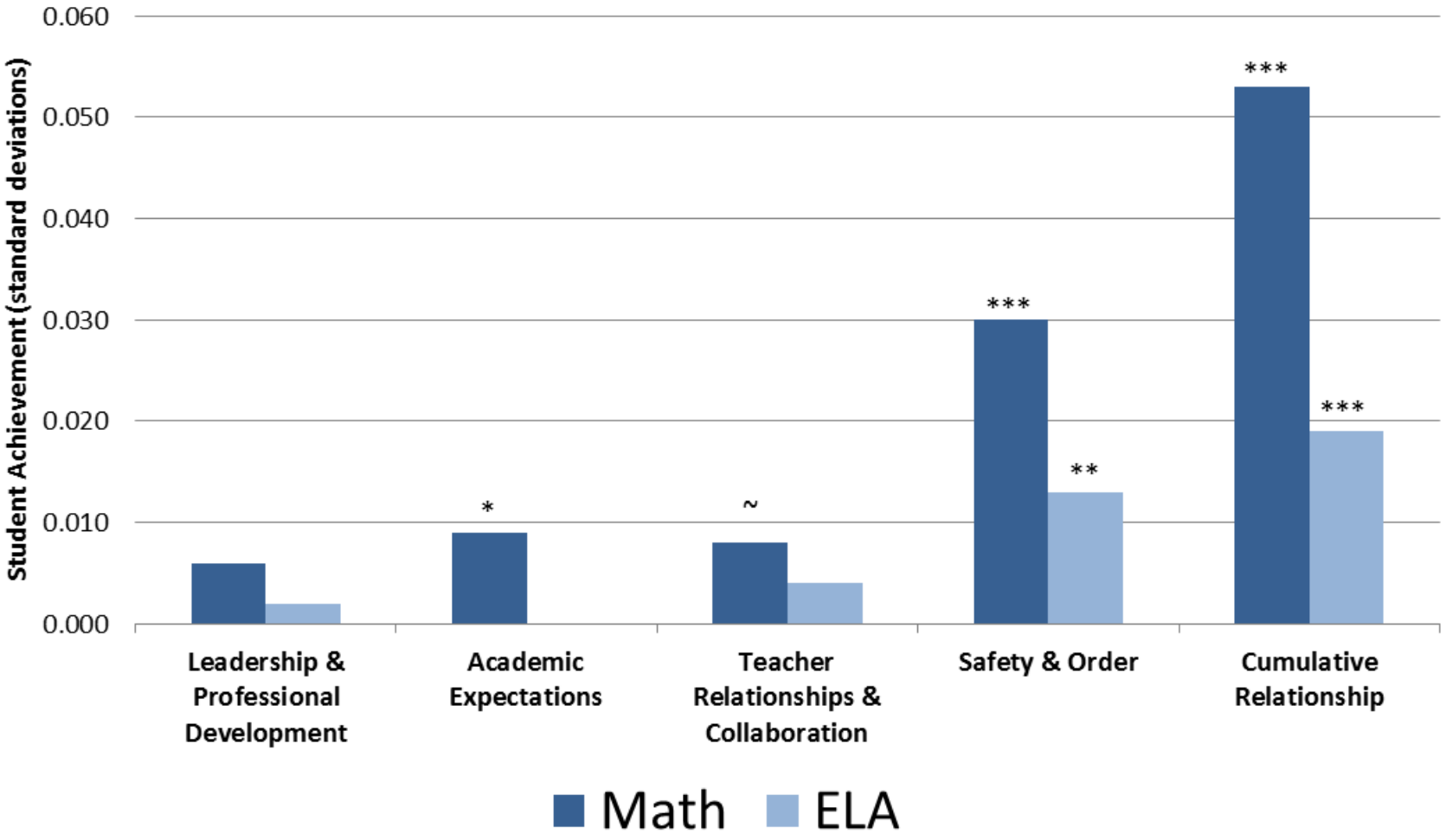
Teachers are much more likely to intend to transfer out of schools with poor working conditions



Increases in school climate correspond with decreases in turnover



Increases in school climate correspond with increases in student achievement



Big Takeaways

- Working conditions, more so than student characteristics, shape teachers' career decisions.
- Many of the working conditions that matter the most are those least responsive to legislation or administrative regulation.
- Principals play a key role in establishing conditions for a strong climate but maintaining supportive environments requires collective effort.
- Successful school turnaround efforts require a focus on both individual teacher effectiveness and organizational capacity. Strong school climates can support or constrain individual efforts.
- Real potential to use data from school climate surveys to inform targeted improvement efforts.
- Still lack causal evidence on the effect of interventions intended to improve school climates and organizational capacity.

Thanks!

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References:

Johnson, S.M., Kraft, M.A., & Papay, J.P. (2012). How context matters in high-need schools: The effects of teachers' working conditions on their professional satisfaction and their students' achievement. *Teachers College Record, 114*(10), 1-39.

Kraft, M.A., Marinell, W.H. & Yee. D. (2015). School organizational contexts, teacher turnover, and student achievement: Evidence from panel data. Brown University Working Paper.

Toward a Broader Conceptualization of Teacher Quality: How Schools Influence Teacher Effectiveness

John P. Papay
Brown University

Setting the context: Teacher quality policy

- Policymakers seem to view teacher effectiveness narrowly – as a portable, fixed characteristic of an individual
  - We talk about "teacher quality"

- In this framework, the solution to the teacher quality problem is attracting "high-quality" individuals to teaching and removing "low-quality" individuals from the classroom

- We argue for a broader view

Overview

- (1) Teacher effectiveness* depends on characteristics of:
  - The teacher
  - The context (e.g., school)
  - The match
- (2) Teacher effectiveness develops over time
- (3) This development depends on:
  - The teacher
  - The context
  - The match

1. Teacher effectiveness is broader than the attributes of an individual teacher

- Clearly, characteristics of the individual matter
  - Academic skills
  - Pedagogical content knowledge
  - Teacher preparation

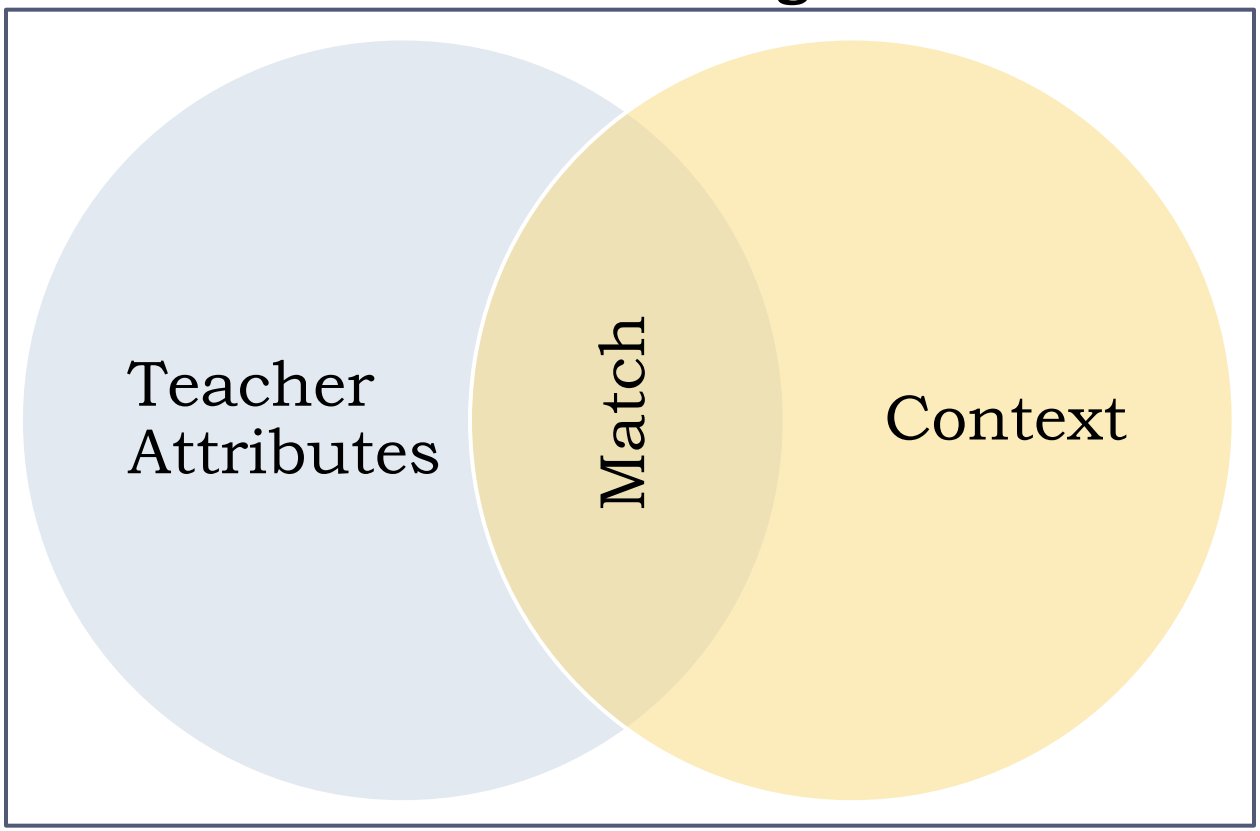
- But, they are not the only thing that matters
  - Context
  - Match

School context & teacher effectiveness: An example

- Effective student discipline (Kraft et al., 2016)
  - "While I was teaching at [my old school], it was very challenging because I was working with a lot of kids that were court-involved, and one day I would have 32 students in my classroom and the next day that number [was] down to 20. And as I tried to get to know the kids better, I'd find that a lot of them are in and out of jail, or in and out of DUIs, or there were many issues that were interfering with their learning. And some of them lost interest in learning anything that I had to present because, well, the next day they had to appear in front of a judge and chances are they were going to be away for a while. [At my new school,] we have the same group of kids. [But, with] the support that is in place ... we give the kids a certain environment that they want to come back to, even though they may have a court date coming up. ... It's a positive environment for them to be, so they keep coming."

1. Teacher effectiveness is broader than the attributes of an individual teacher

A Framework for Understanding Teacher Effectiveness

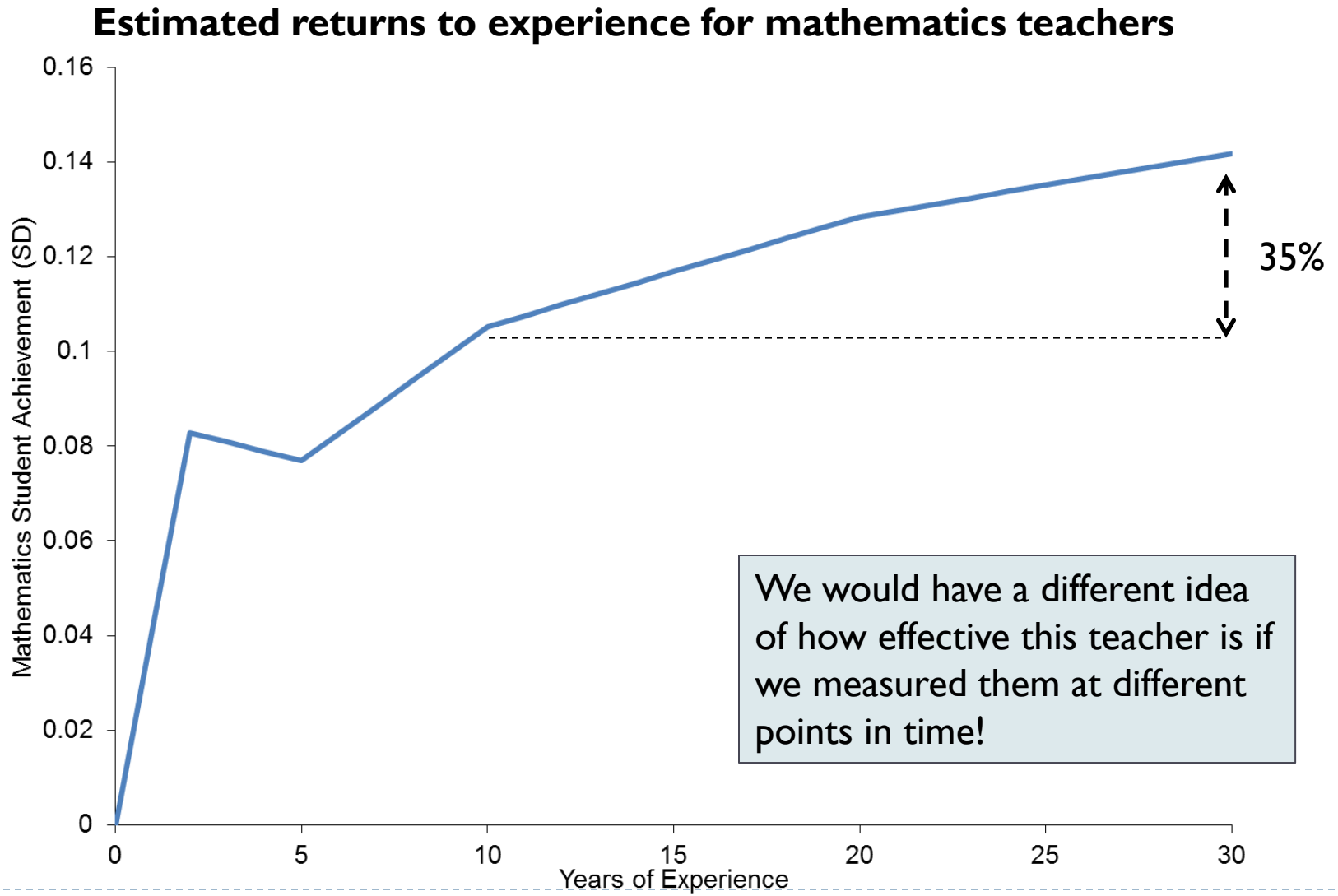


2. Teacher effectiveness develops over time

- That teachers "plateau" is an engrained idea:
  - "Once somebody has taught for three years, their teaching quality does not change thereafter"
  - "How do we ensure that teachers continue to grow and develop their skills … rather than plateauing after 4-5 years in the classroom as research has consistently shown?"

- There are methodological challenges in (any) study of the "returns to teaching experience" (Papay & Kraft, 2016)
  - Past solutions have tended to create this plateau pattern
  - Relaxing these assumptions, though, suggests improvement throughout the career

2. Teacher effectiveness develops over time



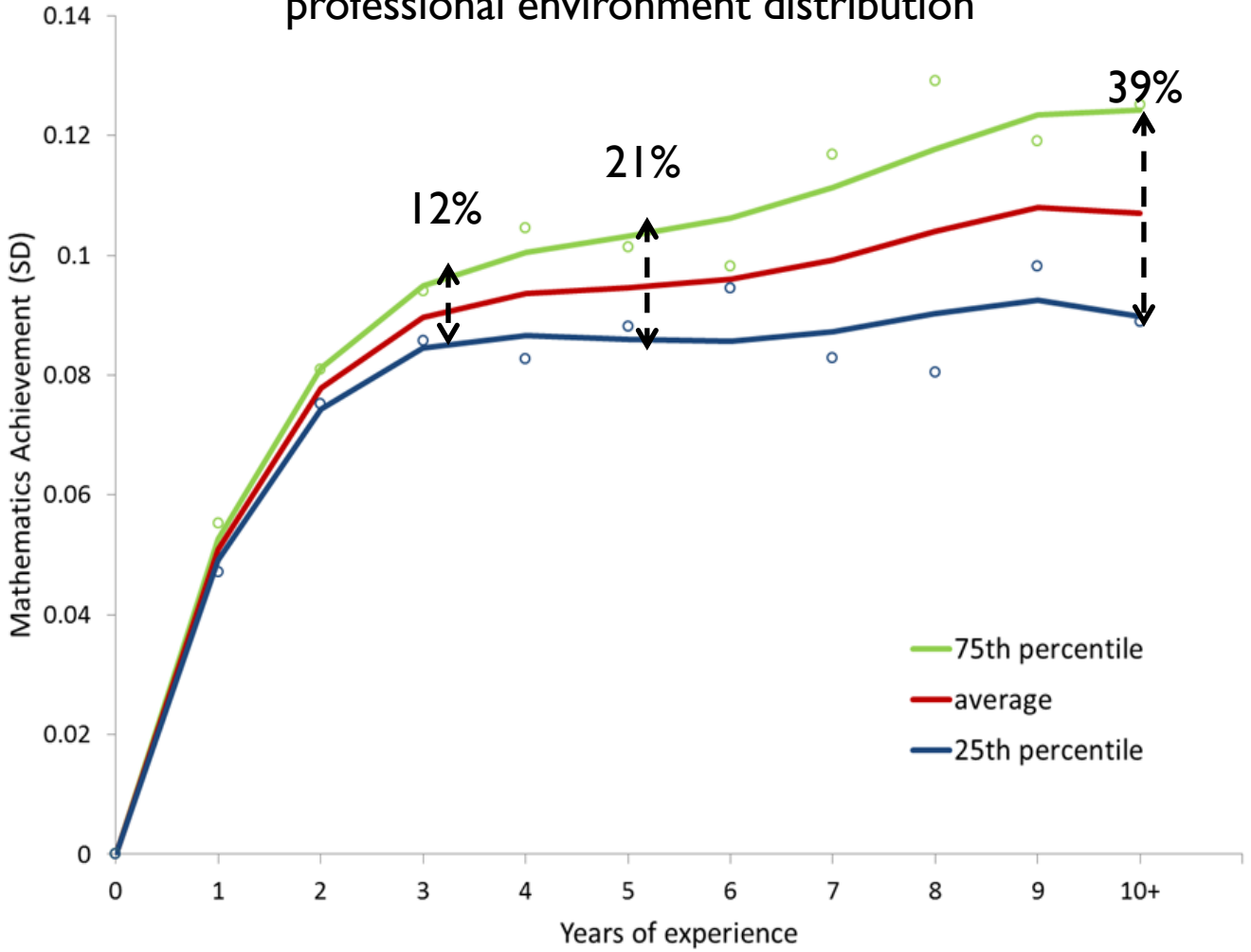
Source: Papay & Kraft, 2016

3. The school context plays an important role in the **development** of effectiveness

- Some teachers improve at greater rates than others (Kraft & Papay, 2014)
- Part of this is attributable to individual teachers, but a substantial part is attributable to the school
- Supportive environments are related to improvements in teacher effectiveness

3. The school context plays an important role in the **development** of effectiveness

Estimated returns to experience for teachers in schools at different points in the professional environment distribution



Source: Kraft & Papay , 2014

School context & teacher development: An example

- Instructional Partnership Initiative in Tennessee
  - Low-performing "target" teachers matched with a high-performing "partner" who works at the same school using teacher evaluation data
    - 19 teaching skills each scored 1-5 in classroom observations
  - Pairs asked to work together for the year to improve practice

- Randomly assigned school to (or not to) get IPI
  - Students in treatment schools scored 0.06σ (student standard deviations) higher on math and reading/language arts tests
  - Improvements concentrated among low-performing "target" teachers' students—0.12σ gains

Putting this together

Mrs. Smith
Blue Elementary School
Providence, RI
"Highly Effective"

Mrs. Jones
Red Elementary School
Providence, RI
"Ineffective"

	Teacher	T-C Match	Context
Level of Effectiveness	+	+	+
Degree of Improvement	+	+	+

Thank you

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The Schools Where Teachers Stay, Grow & Succeed: Teachers in Context

C. Kirabo Jackson

Northwestern University & NBER

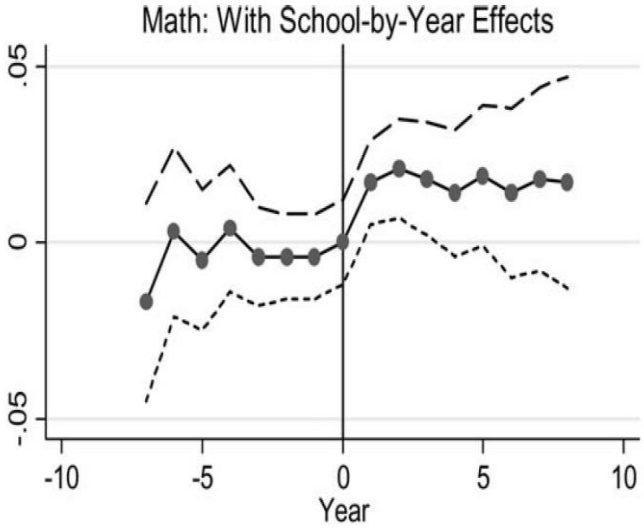
Overview

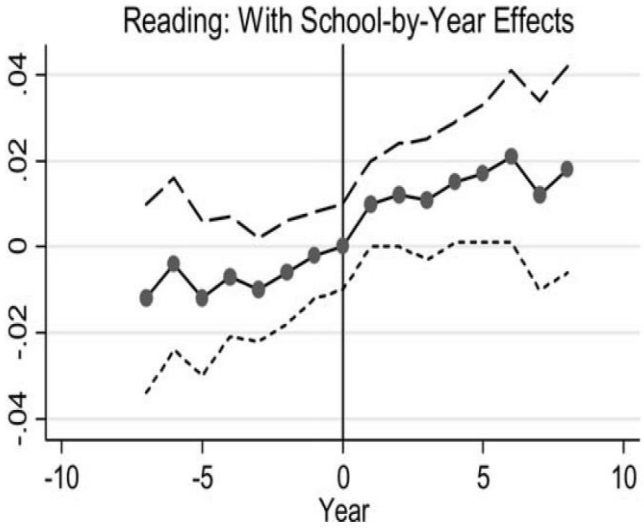
1. The LEGO block (egg crate) model of teachers is pervasive.
   - Teachers are interchangeable units.
   - The context (schools, other teachers) is irrelevant for teacher effectiveness.
2. Two papers to test the model.
   - Does teacher effectiveness (value-added) vary across schools?
   - Can effectiveness (ability to increase value-added) be learned from colleagues?

How teacher efficacy varies across contexts has implications for the most efficient and equitable distribution of teachers across schools.

The extent of skill spillovers across teachers has important implications for equitable distribution of teachers across schools and also for policies that may promote of reduce peer interactions.

Paper 1: The Importance of Context (Match)





- Relative to their performance prior to switching schools, teachers tend to improve after a switch.
  - This is true after accounting for school differences and student characteristics.
- In traditional models of job search in economics, this is evidence of "match" being important.
  - Teachers know if they are poorly matched and tend to look for other schools at which match should be better.

Match Quality and Teacher Mobility

	Exit Teaching	Switch Schools
	1	2
	Logistic	
Match Effect Math BLUP	**0.942***	**0.669***
	(0.00)	**(0.00)**
Teacher Effect Math BLUP	**0.880***	**1.102+**
	(0.00)	**(0.09)**
School Effect Math BLUP	**0.964***	**0.884***
	(0.00)	**(0.00)**
OR for match	0.942	0.67
Teacher FX	N	N
School FX	N	N
Year FX	Y	Y
Observations	74,676	74,676

Robust pval in parentheses

- Teachers at good schools are less likely to switch schools.
- Teachers who are better teachers (in general) are much less likely to exit teaching and more likely to switch schools.
- Teachers who are well matched much less likely to switch schools.

Paper 2: The Role of Colleagues

Do Teachers Perform Better when the Have Better Colleagues

School 1

	4th Grade	5th Grade
2000	Teachers A B C	Teachers X Y Z
2001	Teachers A B D	Teachers X Y Z

- The difference in outcomes for teacher A between 2000 and 2001 reflects a time effect specific to school 1 and a change in peer quality due to the replacement of teacher C with teacher D in 4^{th} grade.
- The difference in outcomes for teacher X between 2000 and 2001 reflects only the time effect specific to school 1.
- One can isolate the effect of peers by Diff-in Diff.

Regression Results

Own Effect: Being a teacher at the 85th percentile versus average (estimated in previous years).
Peer Effect: Having all other teachers in same grade and year at the 85th percentile versus the average.

	Math Test Score			Reading Test Score		
	1	2	3	4	5	6
	School Fixed Effects	Student Fixed Effects	Teacher-Student Fixed Effects	School Fixed Effects	Student Fixed Effects	Teacher-Student Fixed Effects
	OLS	OLS	OLS	OLS	OLS	OLS
Teacher Effect	0.1268 [0.0031]**	0.1689 [0.0062]**		0.0547 [0.0027]**	0.0785 [0.006]**	
Mean Teacher Peer Effect	0.0522 [0.0037]**	0.0604 [0.0076]**	[0.0049]**	0.0262 [0.0035]**	0.0346 [0.0044]**	[0.0050]**

Evidence of Learning from Colleagues

(1) Learning requires investment, so teachers with greater labor-force attachment and less experience should be more likely to invest in learning and more sensitive to peer quality.
  - Stronger effects for early career teachers and regular licensure teachers.

(2) Learning is cumulative, so students should be affected by the composition of their teacher's past peers.
  - Peers the previous year have a stronger effect than contemporaneous peers.

(3) Because teaching ability is a combination of innate and learned skills, historical peer quality should explain some of the own-teacher effect.
  - Historical peers can explain about one-quarter of the teachers effect.

BETTER COLLABORATION, BETTER TEACHERS

Matthew Ronfeldt, University of Michigan School of Education

Shanker Institute Talk:
The Social Side of Education (AERA 2016)

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MOTIVATION

- Teaching historically isolated work
- In recent years, push to transform schools as places to work collectively on instruction
- Does collaboration improve performance of teachers and schools?

DATA

- Online surveys of all Miami-Dade County Public School (MDCPS) Teachers
- About 10,300 respondents across two years
- Teachers were linked to district administrative information about them and their schools (N=336)

COLLABORATION QUALITY FACTORS

- 16 survey items about extensiveness and helpfulness of collaboration about different instructional domains

- "General" Collaboration Quality Factor
  - *All 16 items load positively*

- "Domain-Specific" Collaboration Quality Factors
  - *Collaboration about Instructional Strategies & Curriculum*
  - *Collaboration about Students*
  - *Collaboration about Assessment*

- Teacher & School Factors

SCHOOL LEVEL: DO SCHOOLS WITH BETTER COLLABORATION HAVE BETTER MATH VAM?

VARIABLES	Model 1	Model 2	Model 3	Model 4
IC General	0.2439*			
	(0.100)			
IC Instruction		0.2508*		
		(0.112)		
IC Students			-0.0271	
			(0.068)	
IC Assessment				0.1585*
				(0.075)
N	335	335	335	335
R-squared	0.3691	0.3734	0.3355	0.3508
School Controls	x	x	x	x

*~ p<0.10, * p<0.05, ** p<0.01, *** p<0.001*

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CAUSAL?

- Not necessarily, unobserved factors (e.g., retention)
- Assuming it is, how? Likely through improving instruction of those who participate in collaboration
- If so, then we'd expect:
  - *Teachers who report engaging in better collaboration to outperform teachers who report engaging in worse*
  - *Teachers to improve more quickly when working in schools with better collaboration*

DOES THE QUALITY OF A TEACHER'S OWN COLLABORATIONS (OR THAT OF HER COLLEAGUES) PREDICT HER EFFECTIVENESS AT RAISING MATH ACHIEVEMENT?

	Model 1	Model 2	Model 3	Model 4
General (Tch)	0.088~			
	(0.049)			
General (Sch)	0.153*			
	(0.071)			
Instruction (Tch)		0.009		
		(0.045)		
Instruction (Sch)		-0.027		
		(0.064)		
Students (Tch)			0.012	
			(0.046)	
Students (Sch)			0.174*	
			(0.074)	
Assessment (Tch)				0.145**
				(0.050)
Assessment (Sch)				0.161*
				(0.070)
N	544	544	544	544
Teacher Chars	x	x	x	x
School Chars	x	x	x	x

*~ p<0.10, * p<0.05, ** p<0.01, *** p<0.001*

DO TEACHERS IMPROVE AT FASTER RATES WHEN THEY TEACH IN SCHOOLS WITH BETTER AVERAGE COLLABORATION?

	Model 1	Model 2	Model 3	Model 4
General*Experience	0.065*			
	(0.027)			
Instruction*Experience		0.019		
		(0.026)		
Students*Experience			0.033	
			(0.024)	
Assessment*Experience				0.054*
				(0.024)
N	6682	6682	6682	6682
Teacher Fixed Effects	x	x	x	x
School Controls	x	x	x	x
Year Indicators	x	x	x	x

*~ p<0.10, * p<0.05, ** p<0.01, *** p<0.001*

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IN-SERVICE LITERATURE

- Certain kinds of schools seem to promote instructional effectiveness = those with stronger …
  - Teacher collaboration (work environments)
    - *Bryk et al. (2010); Goddard et al. (2007/2010); Kraft and Papay (2014); Ronfeldt et al. (2015)*
  - Prior achievement gains
    - *Loeb et al. (2012); Jackson & Bruegmann (2009)*
  - Teacher retention
    - *Allensworth et al. (2009); Guin, 2004; Johnson & Birkeland (2003); Ronfeldt, Loeb and Wyckoff (2013)*

- Do the kinds of schools that promote instructional effectiveness among **in-service** teachers also promote it among **pre-service** teachers?

DESIGN

- Large, urban district
- Three years of district-wide surveys
  - *Over 18,000 surveys completed across years*
  - *Asks where completed student teaching (FPS)*
- Link teachers to data on schools in which they completed their pre-service student teaching experiences

ARE TEACHERS MORE EFFECTIVE AT RAISING MATH ACHIEVEMENT WHEN THEY LEARN TO TEACH IN DIFFERENT KINDS OF FIELD PLACEMENT SCHOOLS?

	M1	M2	M3	M4	M5	M6
Math VAM	0.12*			0.09		
	(0.06)			(0.06)		
Collab Quality		0.09*			0.09*	
		(0.04)			(0.04)	
Tch Retention			0.04			0.07~
			(0.04)			(0.04)
N	1196	1497	1497	1098	1370	1370
School-Level Indicators	x	x	x	x	x	x
Year Indicators	x	x	x	x	x	x
Teacher Characteristics	x	x	x	x	x	x
Preparation Features				x	x	x

~ p<0.10, * p<0.05, ** p<0.01, *** p<0.001

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CONCLUSIONS

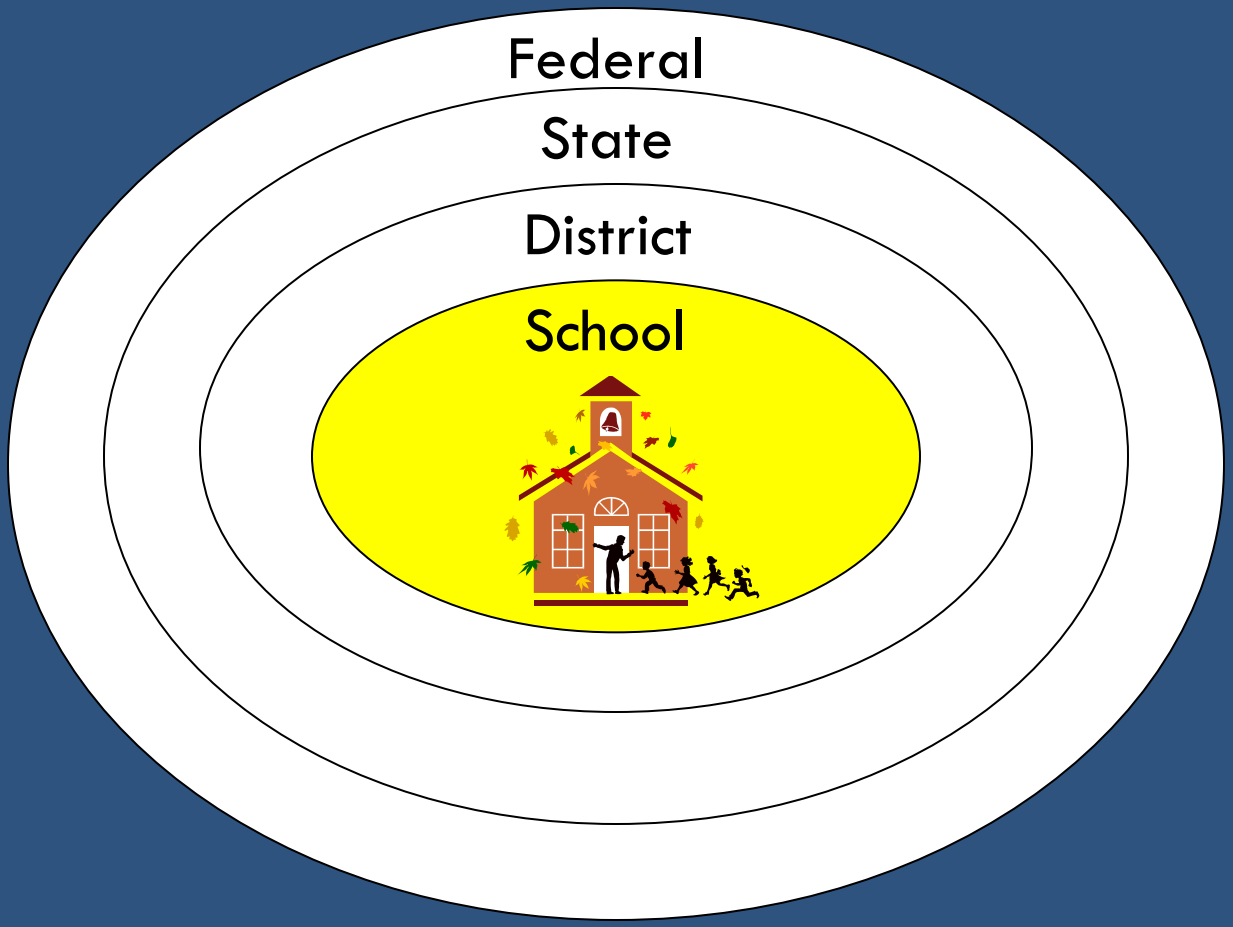
- Teachers who learned to teach in better functioning schools -- with stronger collaboration, prior achievement gains, and (to lesser degree) retention -- had better performance

- HOWEVER, these kinds of schools were LESS likely to be used as field placement sites

- Build stronger TEP – district partnerships to recruit promising placement sites; mutually beneficial

Systems That Support and Develop Teachers In Successful High-Poverty Schools

Susan Moore Johnson
The Project on the Next Generation of Teachers
Harvard Graduate School of Education.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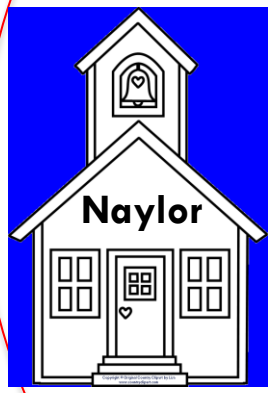
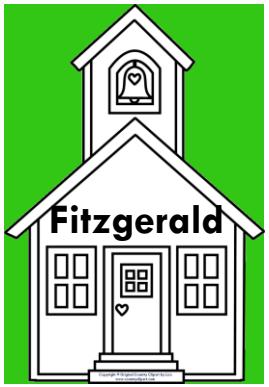
Charter Schools

District Schools

Restart School Run by non-

Former Turnaround Schools





All 6 schools at the highest level on state accountability rating system

Schools Invested Strategically in Supports for Teachers

- **Key human capital systems included:**
  - **Hiring**
  - **Teacher Teams**
  - **Supervision and evaluation**

Implementing a Two-Way, Information-Rich Process: *A Multi-Step, School-Based Process*

- Application Review & Pre-Interview Screening
- Administrator Interview
- Teaching Demonstration … & Debrief
- Meeting with Current Teachers
- Reference Checks

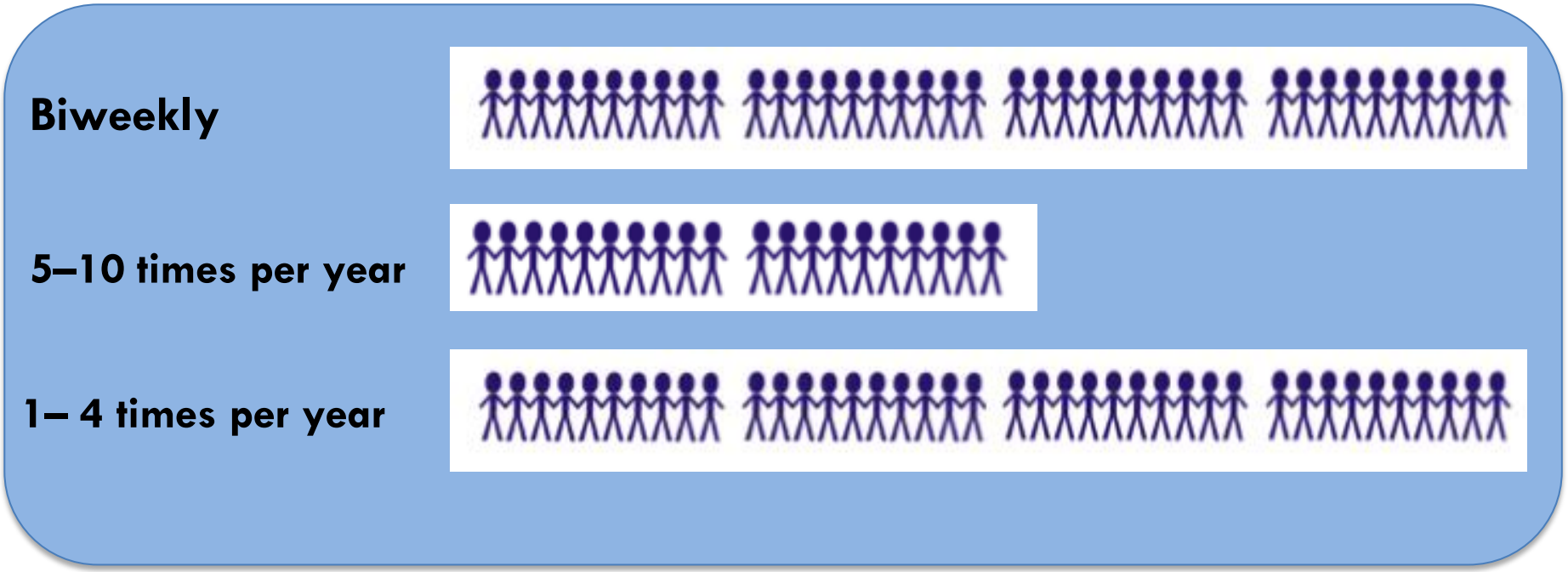
Courting the Candidate

Teams: Central to Improvement in 5 Schools

- All teachers met weekly (or more) with a team of colleagues. Their purpose was clear.
  - ***Content*** teams focused on curriculum, instruction, and lesson planning, also monitoring evidence of students' learning.
  - ***Cohort*** teams focused on individual students, group behavior, and the culture of the cohort.
  - Team time was inviolable.
  - In three schools, teacher leaders facilitated teams.
  - Principals remained informed and engaged, but did not micromanage the teams' work.

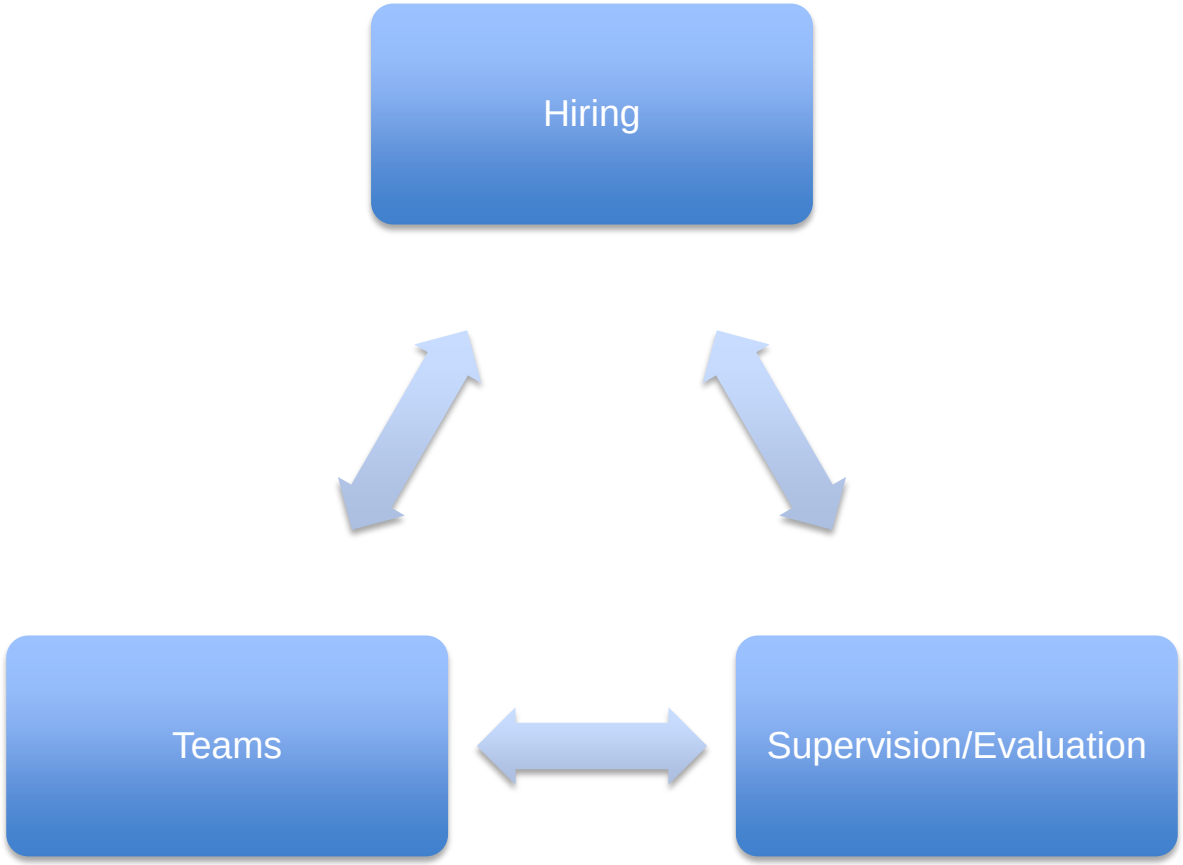
Supervision and Evaluation Was an Ongoing, Improvement Process

- Committed to developing their teachers
- Frequent observations and feedback to teachers



- Sound evaluations emerged from ongoing feedback.

These Three Practices are Mutually Reinforcing



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