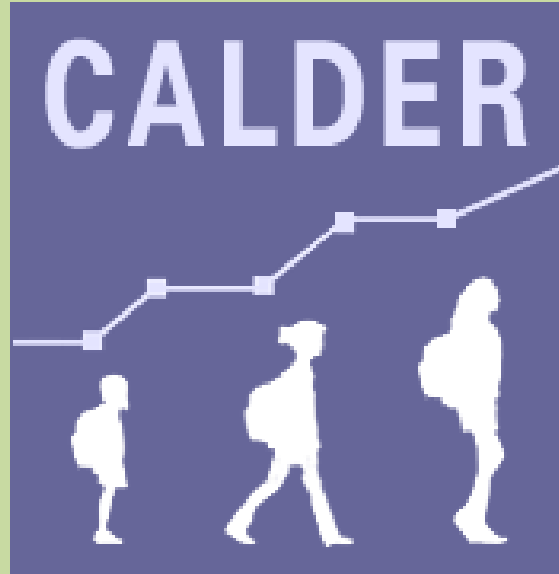


National Center for Analysis of Longitudinal Data in Education Research



Principal Effectiveness and Leadership in an Era of
Accountability: What Research Says

3rd Annual CALDER Conference

December 11, 2009

The Importance of Organizational Management for Principal Effectiveness

Initial findings from a study of urban schools

Susanna Loeb

Tara Beteille, Jason Grissom, Eileen Horng,
Demetra Kalogrides, & Daniel Klasik

Stanford University

Motivation

- Principals linked to teacher satisfaction and career choices
- Principals linked to student outcomes
- Principals central actors in most recent school reforms (accountability, school-based budgeting, charter schools)
- Increased policy attention on attracting and preparing effective school leaders
- Lack understanding of principal qualities to look for when hiring or to target development as well as lack of organized systems for recruiting and developing leaders (in most places)

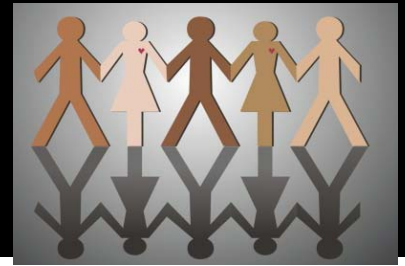
Our approach: exploratory

1. What do Principals do?
 - How do these tasks vary across schools?
 - In particular, do principals in schools that are high performing as measured by student test score gains, as well as, teacher and parent assessments of the schools
 2. What skills do principals need to do these tasks?
 - How do these tasks vary across schools?
 3. Given the findings above, explore in more detail the relationship between school leadership and student learning
-
4. Do principals, like teachers, demonstrate preferences for working in some schools and not in others?

1. What do principals do?

- Developed list of 47 tasks that principals might do based on:
 - Research literature
 - Discussions with principals and
 - Piloting and shadowing in local California schools
- Collected observational time use data
 - Observed each principal for one full day
 - Recorded time use on 47 (later 50) tasks every five minutes
- Sample
 - All high school principals in Miami-Dade County Public schools (plus 6 elementary and 6 middle school principals)
 - All schools serving 6th graders and above in Milwaukee Public Schools
 - All schools in San Francisco
 - Today focus only on Miami-Dade County schools
- Link responses and observations to administrative data (employment, student test scores), other survey data (original and district-collected), and interviews

School Leadership Tasks



Administr.

- Fulfilling compliance requirements
- Managing school schedules
- Managing student discipline
- Managing student services
- Managing student attendance
- Preparing and implementing standardized tests
- Supervising students
- Fulfilling Special Education requirements

Organization Management

- Managing budgets, resources
- Hiring personnel
- Dealing with concerns from teachers
- Managing non-instructional staff
- Networking with other principals
- Managing personal schedule
- Maintaining campus facilities
- Developing and monitoring a safe school environment

Day-to-Day Instruction

- Informally coaching teachers to improve instruction
- Formally evaluating teachers
- Conducting classroom observations
- Implementing required professional development
- Using data to inform instruction
- Teaching students

Instructional Program

- Developing an educational program across the school
- Evaluating curriculum
- Using assessment results for program eval and development
- Planning professional development for teachers
- Planning professional development for prospective principals
- Releasing or counseling out teachers
- Planning or directing supplementary or after school instruction
- Utilizing school meetings

Internal Relations

- Developing relationships with students
- Communicating with parents
- Interacting socially with staff about non-school related topic
- Interacting socially with staff about school-related topic
- Attending school activities
- Counseling staff
- Counseling students and/or parents
- Informally talking to teachers about students, not related to instruction

External Relations

- Working with local community members or organizations
- Fundraising
- Communicating with the district office to obtain resources (initiated by principal)
- Utilizing district office communications (initiated by district)

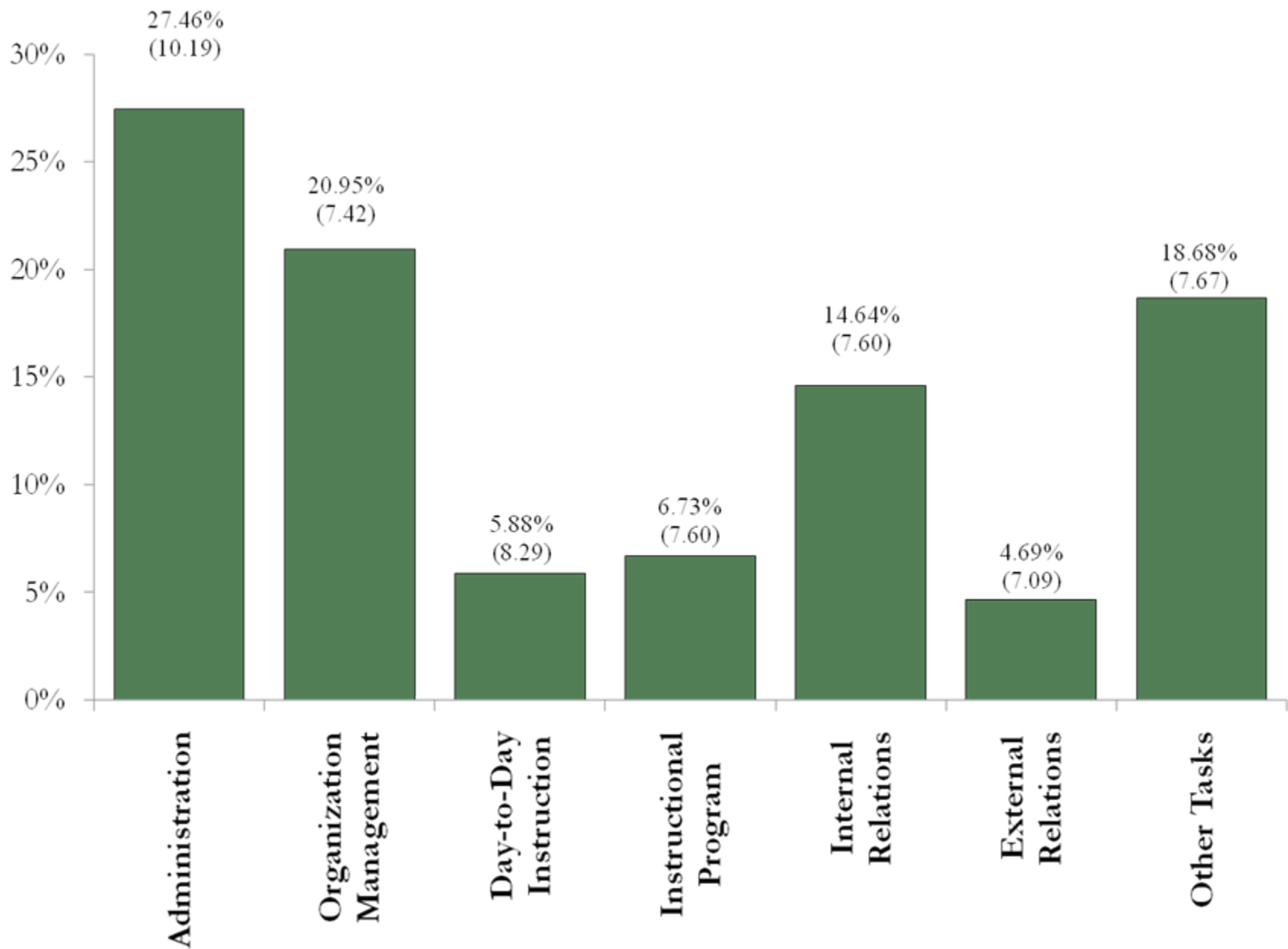
Findings: principal time-use

Most Time Spent On:

- Disciplining students
- Supervising students
- Observing classrooms
- Internal relationships
- Compliance requirements
- Managing budgets

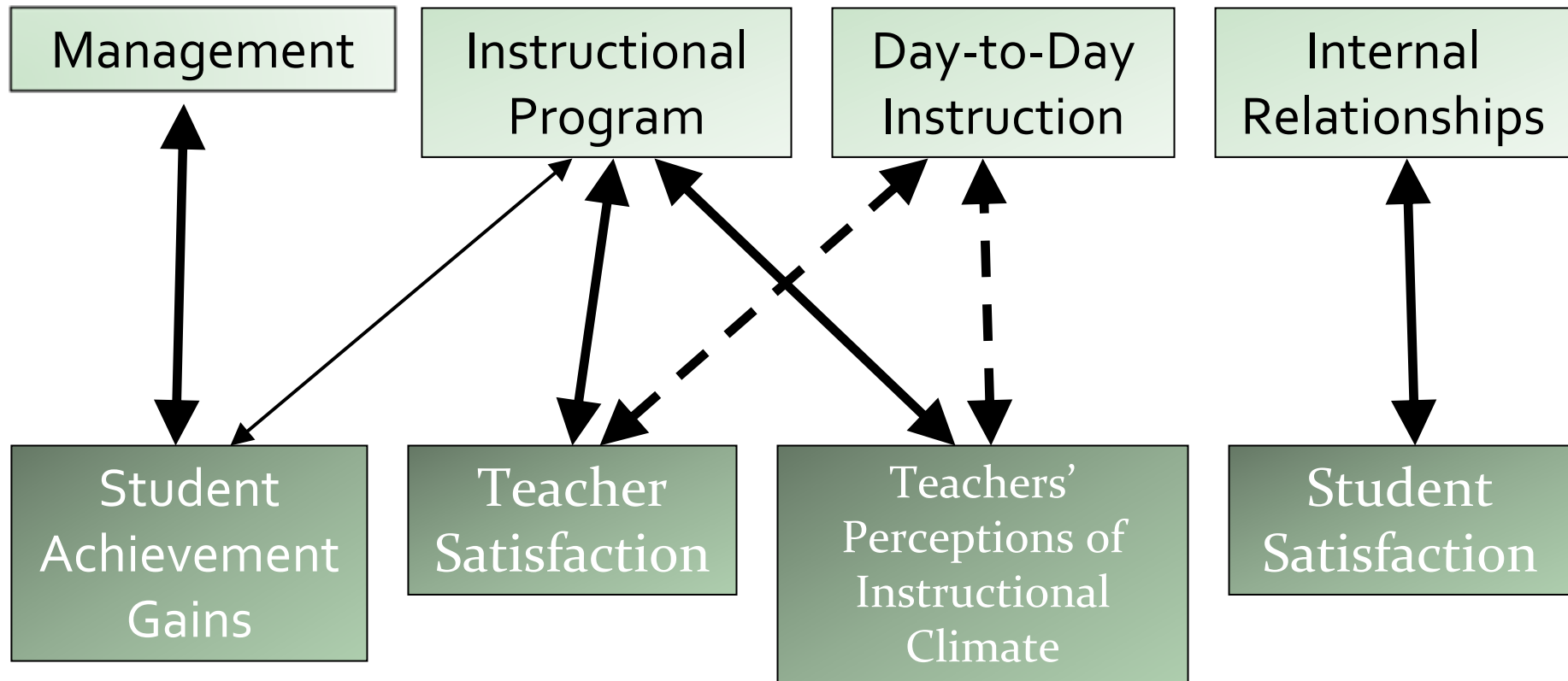
Least Time Spent On:

- External relationships
- Coaching teachers
- Using data and assessments
- PD for teachers
- PD for themselves
- Teaching students



No significant differences across schools by school or principal characteristics except less administration for experienced principals

Principal Time-Use and Outcomes



—— positive relationship - - - negative relationship

2. What skills do these reflect?

- Surveyed all principals, assistant principals and teachers
 - Principals in M-DCPS (n = 314; 89% response)
 - Assistant principals (n = 585; 85%)
 - Teachers (n = 15,842; 83%) -- satisfaction
- Asked principals how effective they felt at each of the tasks
- Asked assistant principals how effective their principals were at each task
- Identify groupings of self-assessed task effectiveness reflecting underlying skills
- Link responses and observations to administrative data, other survey data, and interviews to assess the relationship between skills and school outcomes

Principal Task Effectiveness: 5 Primary Dimensions

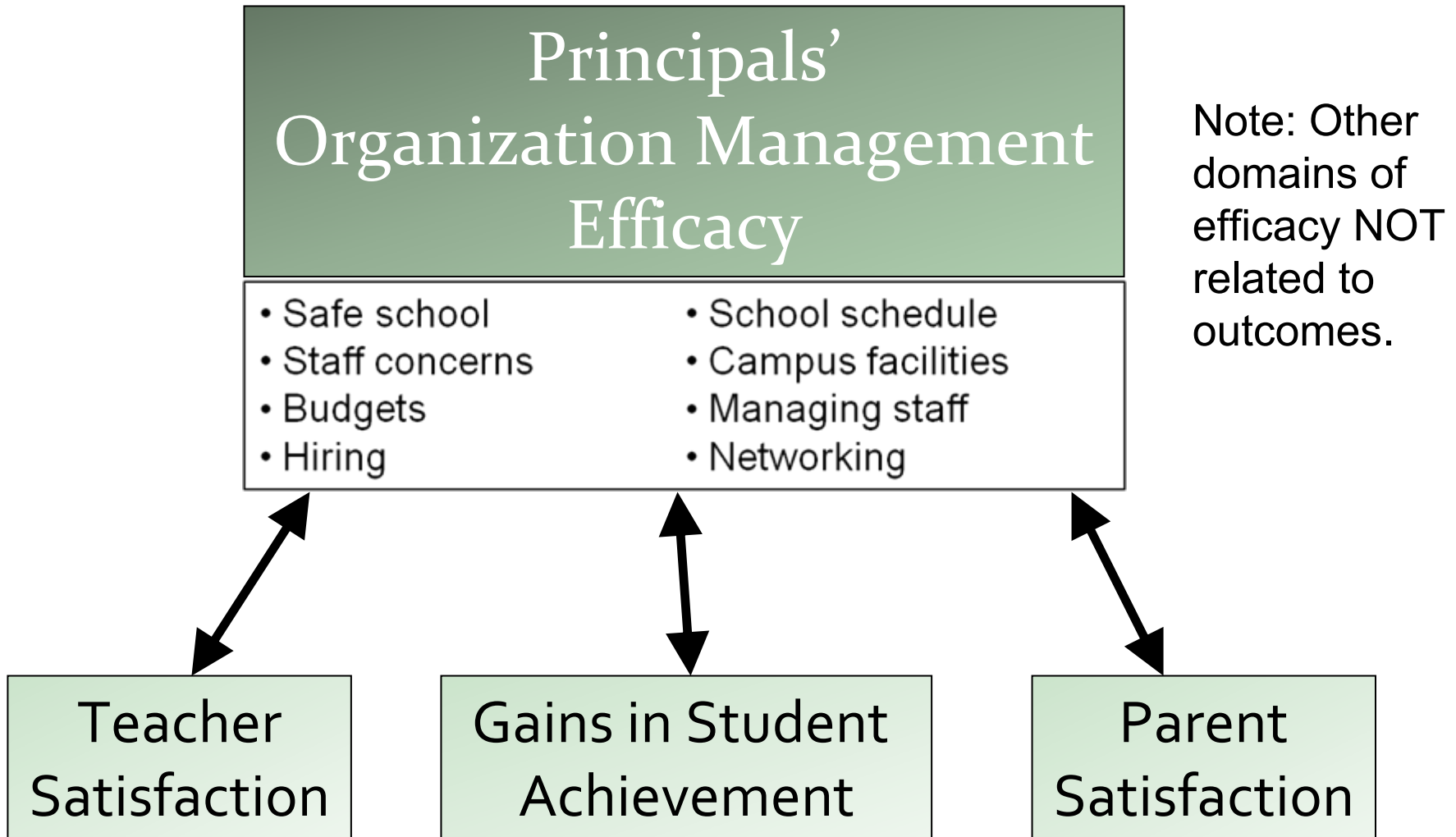
- Exploratory factor analysis of the 42 items uncovered 5 underlying factors based on standard criteria
- After varimax rotation, we identify these dimensions as:
 1. Instruction Management ($\alpha = 0.90$)
 2. Internal Relations ($\alpha = 0.82$)
 3. Organization Management ($\alpha = 0.83$)
 4. Administration ($\alpha = 0.82$)
 5. External Relations ($\alpha = 0.73$)
- Each principal given score on each dimension (std)

Principal Task Effectiveness: 5 Primary Dimensions

1. **Instruction Management:** Skills for promoting and improving the implementation of curricular programs in classrooms
 - Using assessment results, providing instructional feedback, implementing PD
2. **Internal Relations:** Skills for building strong interpersonal relationships within the school
 - Handling staff conflicts, counseling students and teachers
3. **Organization Management:** Skills employed to maintain a highly functioning organization
 - Maintaining facilities, budgeting, hiring personnel
4. **Administration:** Skills related to compliance and regulatory tasks
 - Maintaining records, fulfilling special ed requirements, managing attendance
5. **External Relations:** Skills for working with outside stakeholders
 - Communicating with the district office, fundraising, working with the community



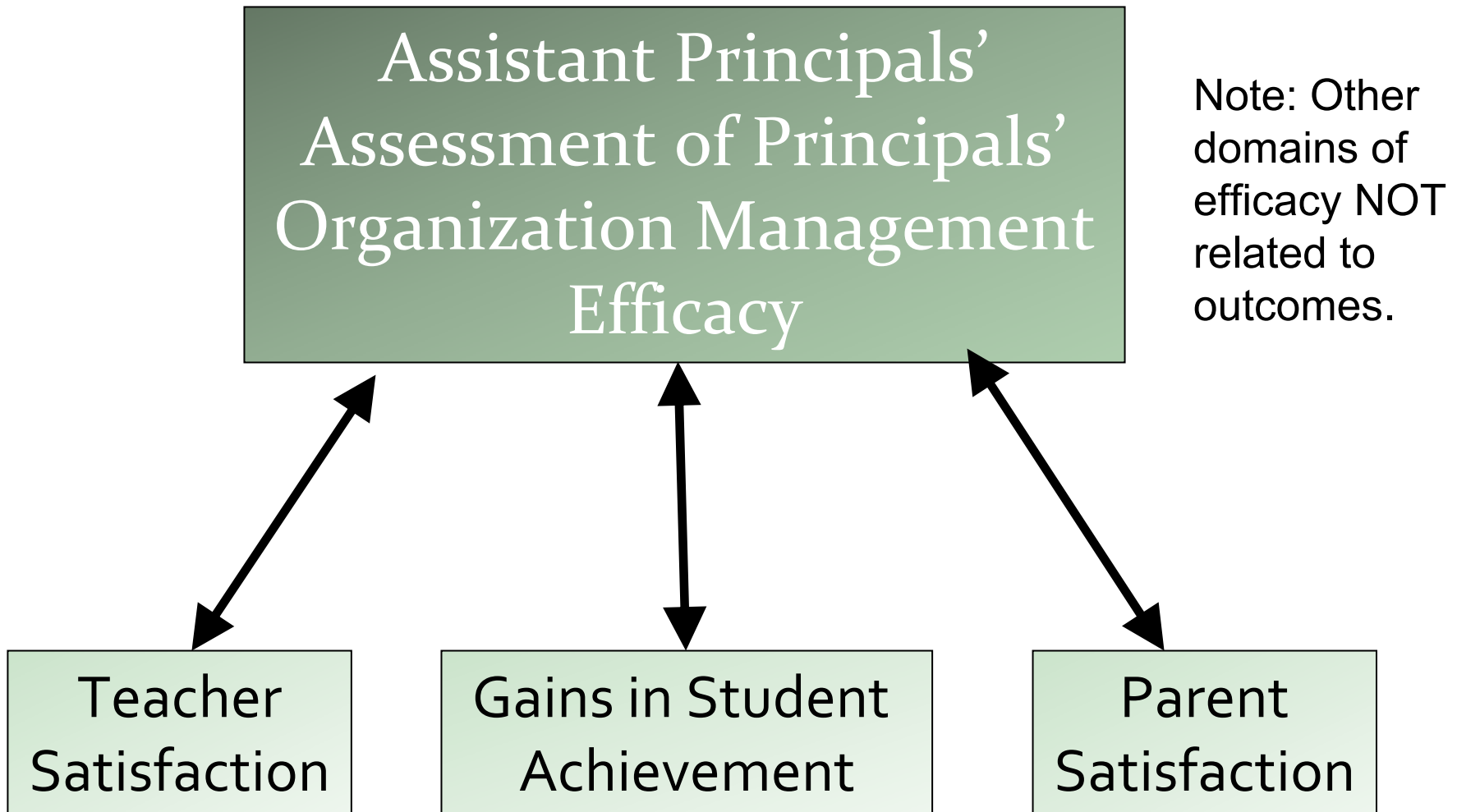
Principal efficacy and outcomes



Corroboration using AP inventory

- Principal self-assessments may not be the best way to measure task effectiveness
 - Principals can't be objective about themselves
- Administer the same inventory to their APs (multiple per school) and look for the same patterns
- Uncover 3 factors from AP responses: Instruction, Internal Relations, Operations

Principal Efficacy and Outcomes



3. Given importance of Org. Manag., explore personnel in more detail

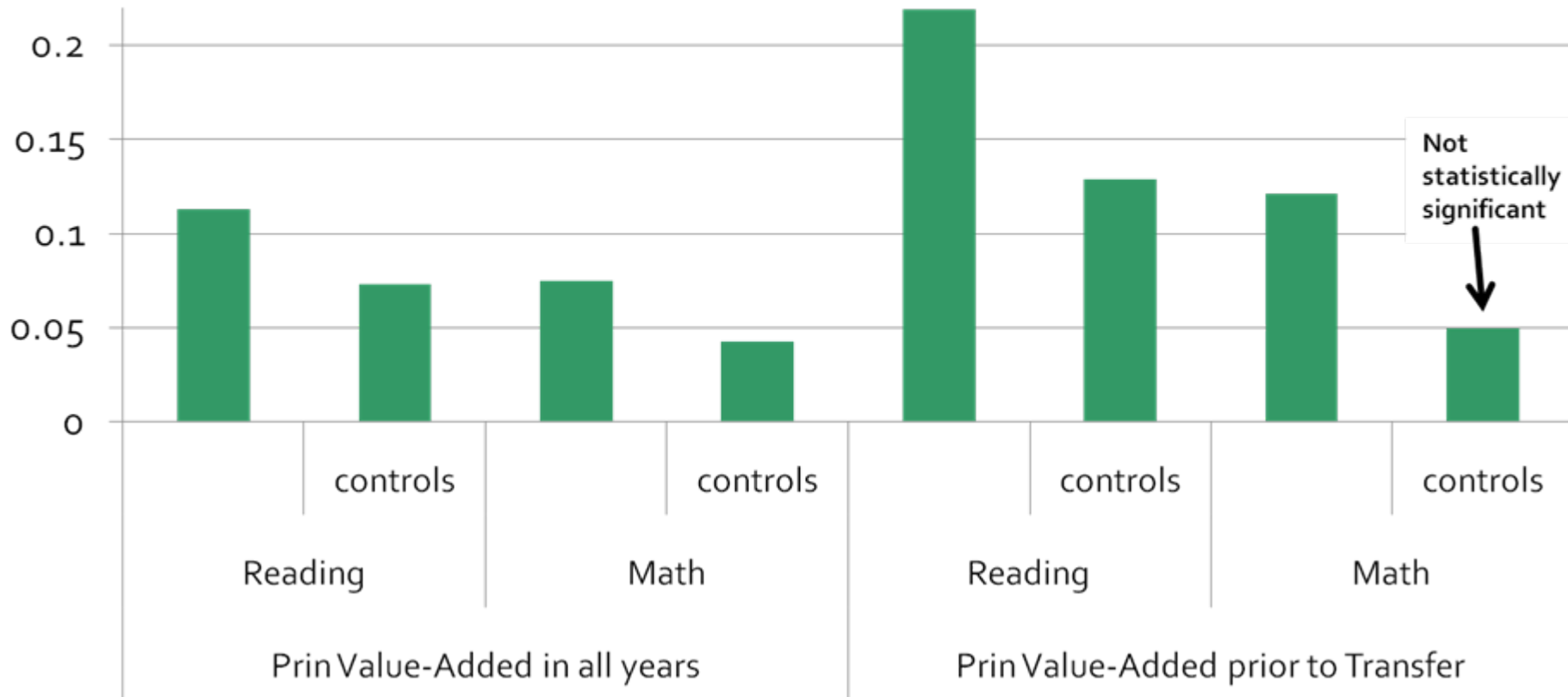
- DRAFT
- Hypothesize goals of personnel management
 - recruitment and hiring of effective teachers
 - strategic retention of effective teachers (lower retention of less-effective teachers)
 - teaching supports to increase teacher effectiveness
- Use administrative data that links principals, teachers and students
- Create measures of teacher effectiveness by comparing the test score increases of each student as he/she moves through classes with different teachers (student fixed-effects)
- Similarly, create measures of principal effectiveness- currently assessing a variety of different options

3 questions

- a. Do higher value-added principals hire higher value-added teachers?
 - b. Do higher value-added principals differentially retain higher value-added teachers?
 - c. Do teachers improve more in schools with higher value-added principals?
- Caveat – we don't really know whether the school improvement is due to the principal or another school factor

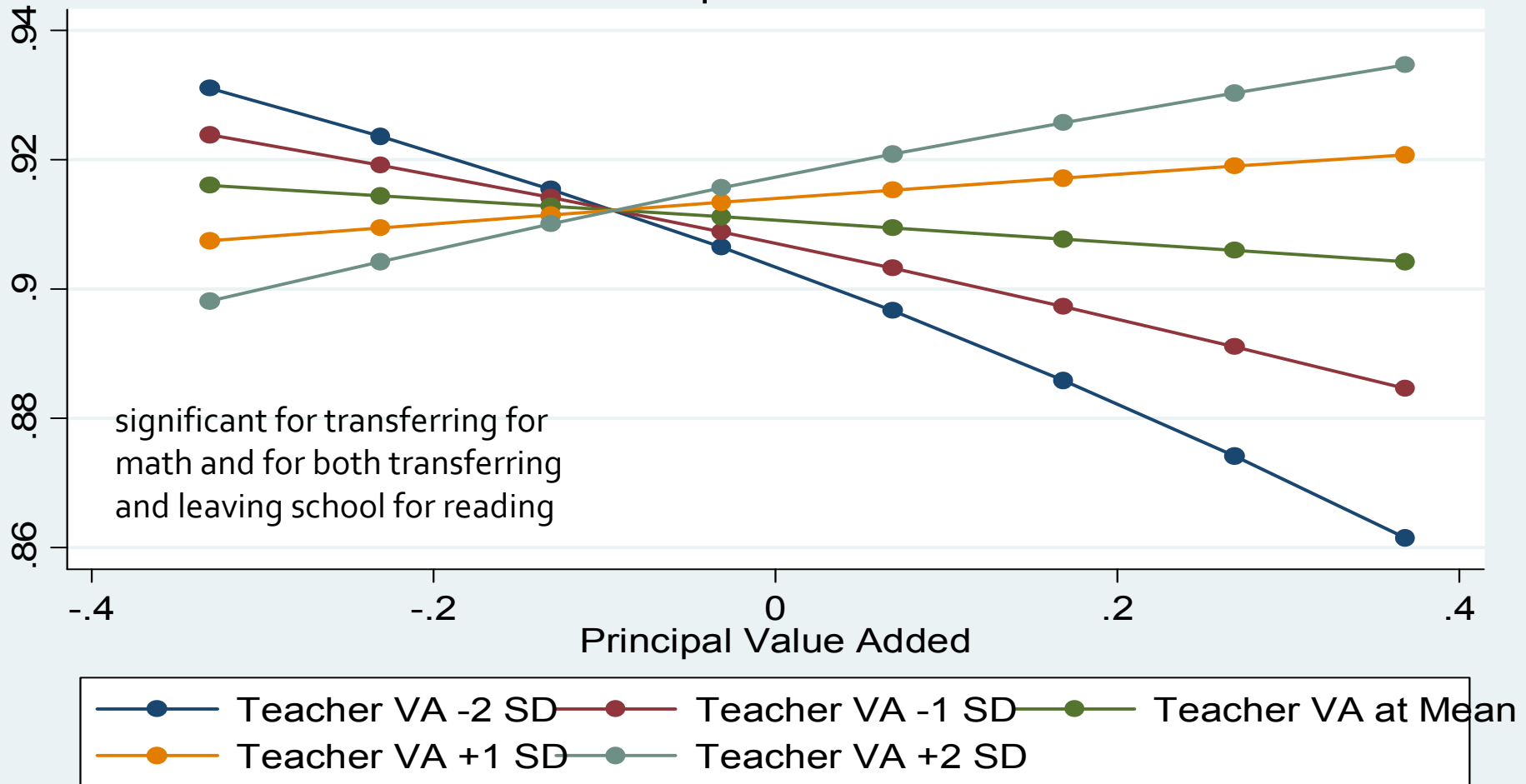
a) Hiring: hire higher VA transfers

Principal Value-Added of the School Teachers Transfer to as a function of Teacher Value-Added



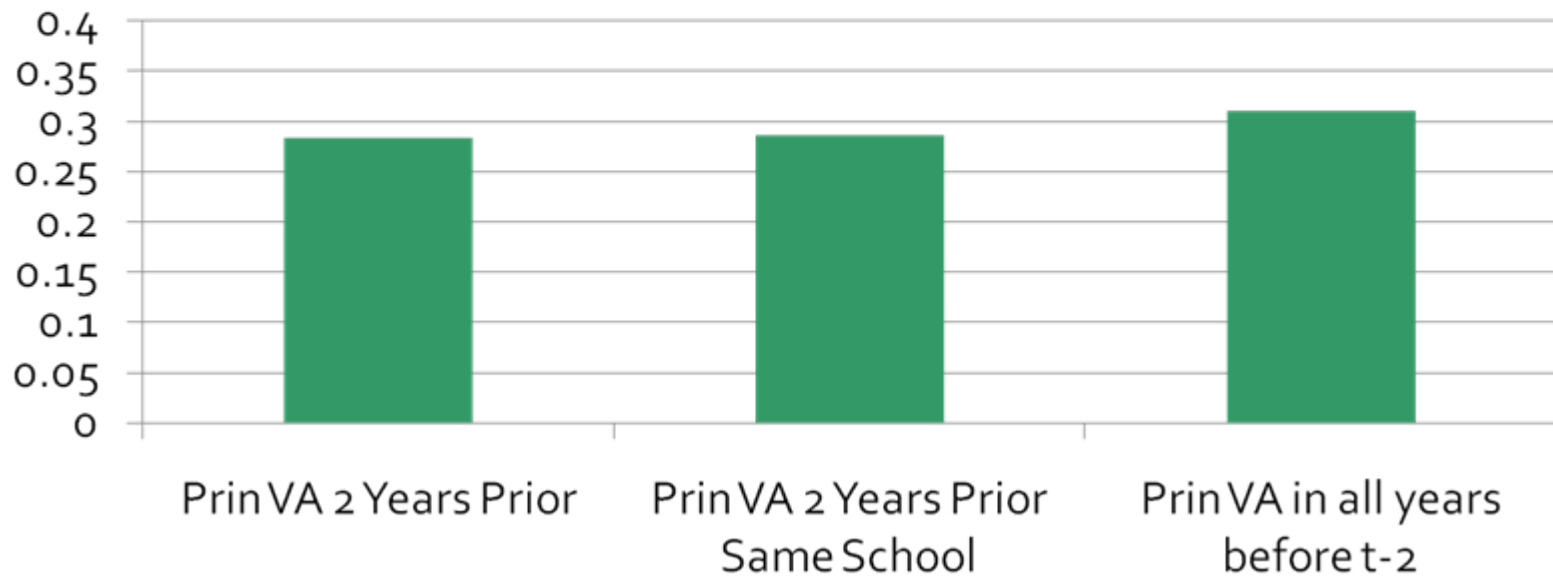
b) Retention: keep relatively higher VA teachers

Teacher Probability of Staying in Same School Teacher & Principal Value Added in Math



c) Improvement

Principal VA and Changes to Teacher VA



Notes: Standard errors are clustered at the teacher level. Outcome is teacher value-added in the current year. The models include teachers in 2006 and 2007 with the available lag scores. Models also control for school year and the lag of teacher experience which is entered as dummy variables and top coded at 20 years.

Summary

- A first look – exploratory
- Principals spend substantial time on administration and also on day-to-day instruction (especially classroom visits)
- However, time spent on **organizational management** tasks and skills in this dimension are more common in seemingly more effective schools
- In particular, personnel management include **hiring, retention** and **supports** for teacher improvement appear important for student learning

The Importance of Organizational Management for Principal Effectiveness

Initial findings from a study of urban schools

Susanna Loeb

Tara Beteille, Jason Grissom, Eileen Horng,
Demetra Kalogrides, & Daniel Klasik

Stanford University

Extras

student performance

	School Grade (Ordered Probit)		Total Accountability Points Earned (OLS)	
	school controls	plus prior score	school controls	plus prior score
Organization Management %	1.125*** (2.756)	1.169*** (2.865)	3.724*** (1.003)	1.651** (0.634)
Day-to-Day Instruction %	1.120* (1.816)	1.113 (1.473)	4.158*** (1.239)	0.936 (1.019)
Instructional Program %	0.998 (0.0607)	1.041 (0.804)	0.759 (0.890)	0.313 (0.679)
Internal Relations %	0.979 (0.509)	0.96 (0.800)	-0.184 (1.021)	-0.0236 (0.759)
External Relations %	0.991 (0.163)	1.056 (0.894)	2.546* (1.263)	0.308 (0.802)
Other Tasks %	1.058 (1.147)	1.114* (1.854)	3.005*** (0.935)	1.230* (0.706)

additional outcomes (mixed)

- Teacher satisfaction
 - internal relations positive with satisfaction with teaching at this schools
- Staff assessment of the school
 - positive with organization management and instructional program
- Parent assessment of the school
 - some positive with organization management
 - some negative with day-to-day instruction and internal relations

correlations with school performance

- Estimate school performance measures as a function of principal task effectiveness and school characteristics

$$O_i = \beta(\textit{Effectiveness factors})_j + \lambda S_j + \kappa T_i + \varepsilon_i$$

- (S)chool: Race composition, poverty, school level, size
 - Lagged performance
- (T)eacher: gender, race, experience, age, MA (when applicable)
- Multiple outcome measures
 - School accountability grade (student performance)
 - Teacher satisfaction (school-level clustering)
 - Parent assessments of school

school accountability grade in 2008

	Levels		Gains	
	All schools (1)	All schools (2)	Elementary schools (3)	Middle and high schools (4)
Instruction Management	0.019 (0.048)	0.036 (0.042)	0.003 (0.064)	0.117* (0.066)
Internal relations	-0.008 (0.049)	-0.005 (0.043)	0.015 (0.060)	0.057 (0.070)
Organization Management	0.121** (0.050)	0.093** (0.045)	0.102* (0.061)	0.102 (0.076)
Administration	0.063 (0.047)	0.059 (0.042)	0.026 (0.066)	0.056 (0.059)
External relations	0.003 (0.049)	0.022 (0.044)	0.067 (0.071)	0.016 (0.060)
School grade, 2005		0.409*** (0.052)	0.296*** (0.068)	0.770*** (0.102)
Constant	4.457*** (0.327)	2.841*** (0.388)	3.890*** (0.481)	1.720** (0.779)
Observations	244	242	147	82
Adjusted R-squared	0.616	0.693	0.569	0.790

Standard errors in parentheses. * p<0.10, ** p<0.05, *** p<0.01. School characteristics included.

teacher and parent satisfaction

	<i>Dependent Variable:</i>			
	Teacher satisfaction		Parent climate grades	
	(1)	(2)	(1)	(2)
Instruction Management	-0.012 (0.012)	-0.017 (0.012)	-0.073 (0.060)	-0.067 (0.054)
Internal relations	0.023 (0.016)	0.025* (0.015)	0.036 (0.056)	0.048 (0.057)
Organization Management	0.027* (0.015)	0.016 (0.014)	0.249*** (0.059)	0.180*** (0.060)
Administration	-0.019* (0.011)	-0.021* (0.011)	0.059 (0.053)	0.035 (0.050)
External relations	-0.009 (0.012)	-0.007 (0.012)	0.082 (0.055)	0.074 (0.053)
School grade, 2008		0.071*** (0.022)		0.466*** (0.079)
Constant	3.539*** (0.109)	3.289*** (0.130)	7.585*** (0.505)	5.629*** (0.500)
Observations	9838	9651	248	242
Adjusted R-squared	0.059	0.063	0.688	0.732

Standard errors in parentheses. * $p < 0.10$, ** $p < 0.05$, *** $p < 0.01$. School characteristics included. Teacher-level models include controls for teacher characteristics (gender, race, experience, age, and MA degree).

Corroborating Principal Task Effectiveness Using AP Inventory

	Grades	Teacher Satisfaction	Parent Climate
Instruction Management	-0.009 (0.047)	0.01 (0.018)	-0.055 (0.052)
Internal Relations	0.005 (0.045)	0.028* (0.016)	0.031 (0.053)
Organization Management	0.103** (0.048)	0.034** (0.015)	0.070* (0.043)

Models include all controls including performance in prior years for the grades and in current year for other outcomes

Table 7. Predicting Principal Value-Added of the Schools to Which Teachers Transfer (Only Includes Teachers who Transfer)

	Principal Reading VA				Principal Math VA			
	1		2		1		2	
<i>Average Principal Value-Added</i>								
Teacher Value Added	0.113	***	0.073	***	0.075	***	0.043	**
	(0.015)		(0.013)		(0.013)		(0.013)	
N	1544		1544		1345		1345	
<i>Principal Value-Added by Year [for year prior to teacher's transfer decision]</i>								
Teacher Value Added	0.219	***	0.129	***	0.121	**	0.050	
	(0.039)		(0.025)		(0.040)		(0.035)	
N	1552		1552		1323		1323	
Teacher Controls	---		X		---		X	
Current School Controls	---		X		---		X	
Principal Controls	---		X		---		X	

Standard errors are clustered at the principal level.

PRINCIPAL VALUE-ADDED AVERAGED OVER ALL YEARS

	<u>Teacher Left Current School</u>				
	1	2	3	4	
<i>Math Value Added</i>					
Principal Value Added	-0.028 (0.198)	-0.133 (0.268)	0.139 (0.362)	-0.757 (0.616)	
Teacher Value Added			-0.220 (0.143)	-0.320 (0.141)	*
Principal*Teacher Value Added			-1.049 (1.201)	-2.050 (1.293)	
N	83400	85903	17913	18143	
<i>Reading Value Added</i>					
Principal Value-Added in Reading	-0.266 (0.262)	-0.288 (0.356)	1.190 (0.595)	* 2.976 (0.881)	***
Teacher Value Added			-0.077 (0.164)	-0.117 (0.155)	
Principal*Teacher Value Added			-4.539 (2.551)	+ -8.189 (2.266)	***
N	83400	86084	20251	20580	
School Fixed Effect	---	X	---	X	
Teacher Characteristics	X	X	X	X	
School Characteristics	X	---	X	---	
Principal Characteristics	X	X	X	X	

PRINCIPAL VALUE-ADDED BY YEAR, TAKING THE AVERAGE VA FOR ALL AVAILABLE YEARS PRIOR TO CURRENT YEAR

	<u>Teacher Left Current School</u>			
	1	2	3	4
<i>Math Value Added</i>				
Principal Value Added	-0.034 (0.175)	0.143 (0.248)	0.076 (0.305)	-0.031 (0.548)
Teacher Value Added			-0.270 (0.182)	-0.482 (0.188) *
Principal*Teacher Value Added			-0.569 (0.953)	-0.858 (0.985)
N	44044	45297	9601	9510
<i>Reading Value Added</i>				
Principal Value-Added in Reading	-0.039 (0.271)	0.051 (0.355)	1.317 (0.579) *	1.860 (0.819) *
Teacher Value Added			-0.615 (0.341) +	-0.734 (0.304) *
Principal*Teacher Value Added			-4.239 (1.980) *	-4.885 (1.794) **
N	43981	45263	10937	11010
School Fixed Effect	---	X	---	X
Teacher Characteristics	X	X	X	X
School Characteristics	X	---	X	---
Principal Characteristics	X	X	X	X

Table 8. Principal Value-Added and Changes to Teacher Value-Added

	Prin VA 2 Yrs Ago		Prin VA 2 Yrs Ago- Teachers in Same School w/ Same Principal in t-2		Average Prin VA in all years before t-2	
	Math	Reading	Math	Reading	Math	Reading
Teacher Value-Added in Prior Year	0.000 (0.000)	0.200 (0.164)	0.000 (0.000)	0.209 (0.173)	0.000 (0.000)	0.034 (0.040)
Value-Added of Teacher's Principal Two Years Ago	0.284 *** (0.036)	1.629 (1.765)	0.286 *** (0.045)	3.465 (2.363)	0.311 *** (0.038)	2.057 (2.346)
N (Observations)	2497	2648	1741	1850	2488	2644
N (Teachers)	1761	1819	1381	1434	1867	1944

Notes: Standard errors are clustered at the teacher level. Outcome is teacher value-added in the current year.

The models include teachers in 2006 and 2007 with the available lag scores. Models also control for school year and the lag of teacher experience which is entered as dummy variables and top coded at 20 years.

Principal Preferences

High Interest

- Same school level
- Well-resourced
- Collegial culture
- Supportive parents
- Close to home

Low Interest

- Many poor students*
- Many English learners*
- Low-performing school*
- Many teacher vacancies
- Small school

* More than 10% of respondents stated “prefer not.”

Principal preferences likely affect sorting of principals...

Distribution of Principals

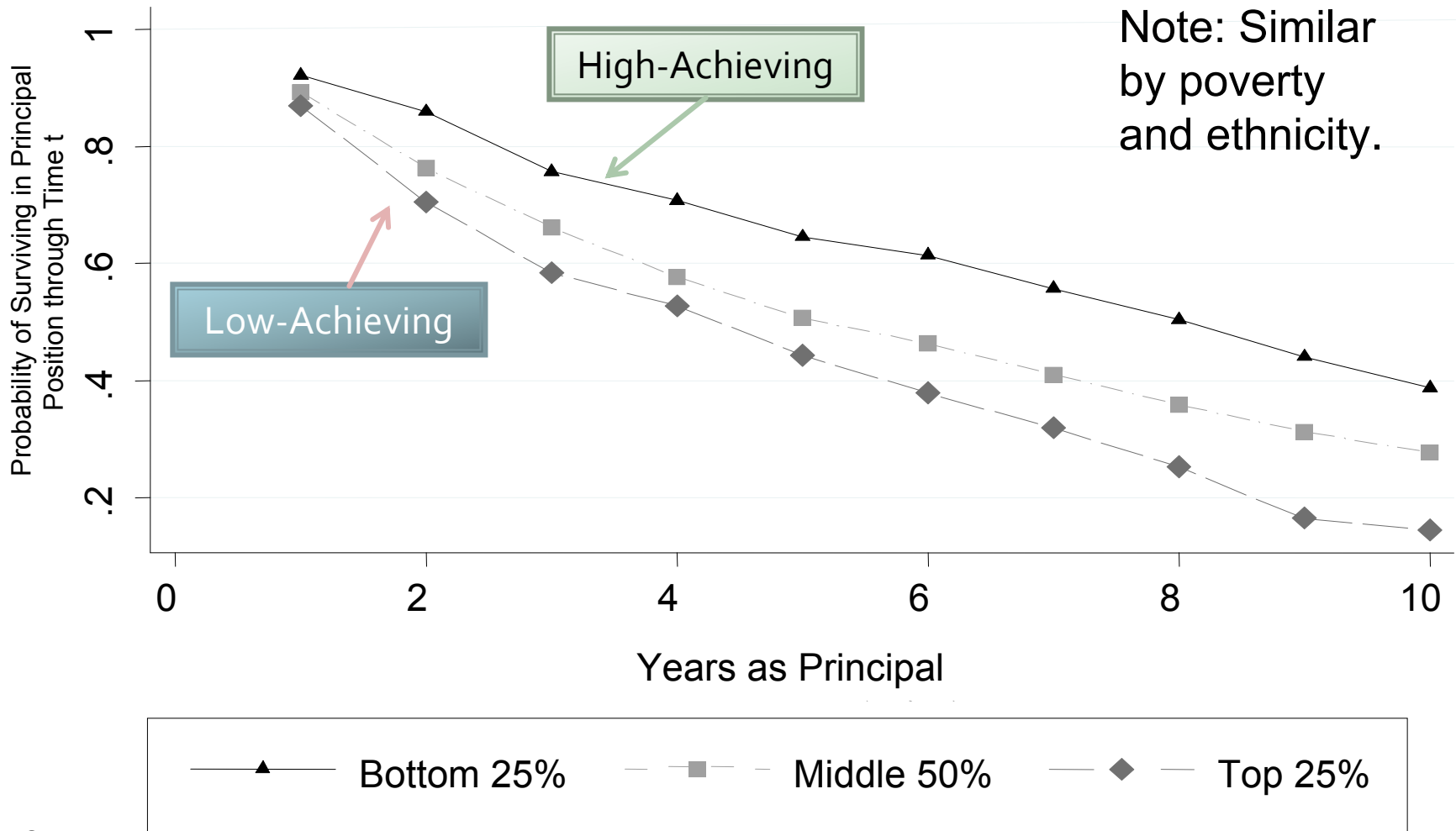
Schools with...

- Higher poverty
- More minority students
- More low-achieving students
- Lower accountability grades

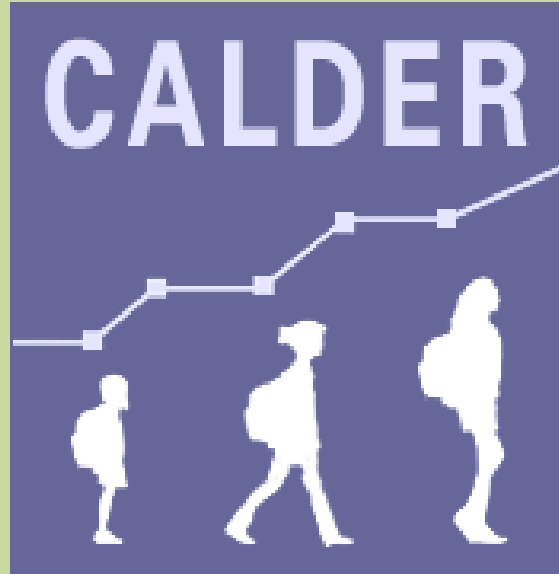
are significantly more likely to have...

- More new (first-time) principals
- Less experienced principals
- More likely to have temporary/interim principal
- Less likely to have principal with MA+

Principal Turnover and Student Body



National Center for Analysis of Longitudinal Data in Education Research



Principal Effectiveness and Leadership in an Era of
Accountability: What Research Says

3rd Annual CALDER Conference

December 11, 2009