

# A Multilevel Examination of the Distribution and Effects of Teacher Trust in Students and Parents in Urban Elementary Schools

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## Abstract

In this article we develop the theoretical argument that teacher trust in students and parents is critical to school success. Next, using survey data collected on 452 teachers and data on achievement in reading and mathematics and on socioeconomic status of 2,536 fourth-grade students in 47 urban elementary schools, we show that trust varied greatly among the elementary schools and that this variation was strongly related to differences among schools in socioeconomic status. Finally, results of the study showed that even after accounting for variation among schools in student demographic characteristics, prior achievement, and school socioeconomic status, trust was a significant positive predictor of differences among schools in student achievement. We discuss the implications of these findings for improving academic achievement in elementary schools and for future research.

Researchers have increasingly recognized the importance of relationships that connect families and schools. Indeed, several studies have suggested that strong school-family relationships matter to student achievement (Bank & Slavings, 1990; Garnier & Raudenbush, 1991; Jones & Maloy, 1988; Lareau, 1987; Lee & Croninger, 1994; Sui-Chu & Douglas, 1996). Relationships between families and schools are also the focus of federal and state educational policy. For example, the National Education Goals Panel (1995) stated, "If the National Education Goals are to be achieved, families, schools, and communities must work collaboratively to form strong family-school-community partnerships" (p. 63). Thus, strong relationships are the focus of both research and policy. But what is it that makes relationships *strong*? In large part, we believe the answer is trust. We believe that

trust is at the heart of strong relationships that help children learn, particularly disadvantaged children. The purpose of this study was to investigate trust as a critical element of the relational networks that facilitate success in urban elementary schools.

For several reasons, we focused on teacher trust as key to the relationships that connect students and their families to schools. To be sure, other individuals have social influence that affects students, families, and schools. For example, principals, guidance counselors, extended family, and student peers each uniquely influence the decisions children make and the success they experience in school. But teachers are in daily contact with students, and they are the first line of communication between the school and the family. Moreover, as we discuss more fully later, for disadvantaged children whose families lack the cultural capital to prepare their children to take advantage of the opportunities schools can present (Bourdieu & Passeron, 1977; Lareau, 1987), teachers are the primary institutional agents responsible for guiding these students to academic success (Stanton-Salazar, 1997). Thus, we examined teacher trust in students and parents.

We believe that the extent to which teacher-student and teacher-parent interactions are productive is affected by the trust that holds these relationships together. Our interest in teacher trust as a social feature that is important to the success of students in urban elementary schools led us to consider two research questions. First, we were curious to learn more about how teacher trust is associated with school membership. Therefore, one research question asked how trust is distributed among and within urban elementary schools. We also wanted to know more about how trust relates to the unequal distribution of school success. That is, we were interested in the extent to which trust predicted differences between schools in student achievement. Thus, we investigated how teacher trust in students and parents affects student academic success.

Both of our research questions involve the distribution of characteristics (trust and achievement) across and within organizational units. For this reason, and because we designed our study to provide access to nested data (students in schools), we chose multilevel modeling to address our research questions. The primary analytic technique employed was hierarchical linear modeling (HLM) (Bryk & Raudenbush, 1992). The HLM technique has the capability to partition variance in a dependent variable into its within- and between-group components. This feature enabled us to examine the extent to which teachers' perceptions of trust varied both across and within schools. In addition, HLM has the advantage of avoiding the problems of aggregation bias, misestimated standard errors, and heterogeneity of regression that sometimes compromise the results of ordinary least squares regression.

In sum, this article serves several purposes. First, we review literature on trust to develop a theoretical model guiding our measurement of teacher trust. Next, we employ multilevel modeling to offer new knowledge about the distribution of trust across and within schools. Finally, we examine the relation between trust and student achievement among schools after controlling for achievement variance related to student demographic characteristics and prior achievement. The findings of this study offer insight into teacher trust as a social feature that matters to the success of urban elementary schools.

### Trust and Schools

Baier (1986) defined trust as the reliance on others' competence and their willingness to look after rather than harm what is entrusted to their care. Because what people typically care about and value often includes things that they cannot single-handedly either create or sustain, people allow others to get into positions where they can help, if people choose. Trust is thus a fundamental concern for school organiza-

tions positioned to help students learn. Yet, because trust requires vulnerability to further good causes, it creates opportunities for those one trusts to injure what one cares about (Baier, 1986, p. 236). What one cares about may be tangible things, such as one's possessions or money, or intangible things such as democracy or norms of respect and tolerance. Schools look after all of these for society and consequently, the issue of trust is critical to an understanding of how schools educate students. Indeed, the *in loco parentis* responsibility conferred on schools by American society requires trust.

Schools are also vested with the responsibility for realizing the increasing vision of social justice (Vinovskis, 1999). This has created new roles and expectations for schools. Goodlad (1984) observed that society used to be content with schools that functioned to sort and rank students for various strata of society. That goal is being supplanted by a newer goal of fostering equality of opportunity for all students, even those with disabilities (Yell, 1995) or who come from lower socioeconomic strata. For example, a fundamental goal of state and federal education finance policy is to redress inequity by providing adequate opportunity for all students to achieve to high standards (Odden & Busch, 1998; Odden & Picus, 2000). Yet, schools struggle to realize these aspirations. Almost a half-century after the Brown decision to desegregate the schools, the dream of schools eliminating class distinctions and providing equal opportunities to learn seems far from becoming reality (Kozol, 1991). Further, the professional knowledge teachers possess is held suspect as much-touted innovations (e.g., open classrooms or new math) have failed to bring the dramatic results they promised (Tyack & Cuban, 1995). Values schools promote may be at odds with the conflicting values of a diverse society. All these dynamics contribute to greater public distrust of schools. Indeed, growing distrust of schools is evidenced in the exploding population of people unwilling to entrust their children to

schools at all. From a phenomenon that was virtually unheard of in the early 1980s, in 1997 an estimated 1.23 million American children were taught at home (Ray, 1997).

### Trust and Educational Governance Reform: School and Classroom Perspectives

Lack of trust is a serious impediment to many of the reforms taking shape in American schools. Traditional management practices have tended to emphasize social distance and divergent interests among competing parties, and so they have engendered distrust or a low expectation of responsiveness on the part of other parties. But new forms of governance are taking shape, with greater expectations of shared interests and goals, greater effectiveness, and increased flexibility to changing demands and environmental pressures (Powell, 1990, 1996). These more inclusive forms of governance increasingly require an atmosphere of trust. For example, moves to site-based management and shared decision making require school leaders to trust those who are granted decision-making discretion (Hoy & Tarter, 1995). Moreover, as school reformers ask teachers to change their beliefs and instructional techniques, teachers need to have a community of support in which to challenge and debate new practices (Putnam & Borko, 1997); such a community requires trust among teachers.

A number of initiatives call for the inclusion of parents in school governance. Indeed, not only in America but also in other English-speaking countries such as England and Australia, calls for parental involvement in educational decision making are key policy objectives (Odden & Busch, 1998). Such forms of governance espouse the devolution of control to schools and their stakeholders. Yet, decentralization alone will not necessarily produce meaningful improvements; parents and other stakeholders must cultivate productive relationships with those working in schools (Glickman, 1990). The productive involve-

ment of parents in educational decision making thus requires that teachers trust parents.

Not only is school-based reform frequently influenced by trust in parents, contemporary teaching methods require teacher trust in students. For example, collaborative learning may reduce students' alienation by giving them a greater voice in their lives at school, but the change to more active styles of learning implicitly requires teachers to trust that students will participate in meaningful ways (Johnson & Johnson, 1999). In sum, decades of school reform have led to calls for devolution of decision making, power, and authority to students and their parents. For schools to realize the kinds of positive transformation envisioned by these reform efforts, they must pay attention to teacher trust in both students and parents.

#### Teachers and Institutional Access: The Importance of Trust

Another way in which the importance of teacher trust to students' educational success has received attention is through the work of social capital theorists. Within this theory, trust strengthens the productive norms and relational networks that facilitate group and individual accomplishment (Coleman, 1985, 1987; Driscoll & Kerchner, 1999; Putnam, 1993; Smylie & Hart, 1999). Some scholars contend, however, that minority children are often excluded from productive relationships because they are not members of the dominant culture. According to Stanton-Salazar (1997, p. 4), "The structural features of middle class networks are analogous to social freeways that allow people to move about the complex mainstream landscape quickly and efficiently . . . a fundamental dimension of social inequality is that some are able to use these freeways, while others are not."

From this perspective, disadvantaged children are not prepared to take advantage of the opportunities schools present because they lack the ability to successfully navigate the mainstream. Such students therefore de-

pend on relationships with school institutional agents to help them decode the dominant culture and gain access to the "social freeway." Trusting relationships between students and teachers thus can create social capital that fosters academic success for disadvantaged children.

#### Trust and Human Learning

Trusting that others can be believed is an important element in human learning. Rotter (1967) asserted that "much of the formal and informal learning that human beings acquire is based on the verbal and written statements of others, and what they learn must be significantly affected by the degree to which they believe their informants without independent evidence" (p. 651). Webb (1992) echoed this proposition, observing that much of what is known in the fields of history, geography, science, and many others can only be learned by relying on the words of other people. He proposed, "One is justified in believing what other people say, provided only that there is no positive reason to doubt them . . . After all, if I am not justified in believing others, then I don't know that there is such a place as Australia, that electrons have plus or minus one-half spin, that Pluto has a moon, or even that I am thirty-four years old; I can't know so much as the time of day" (p. 390). Webb explained that trust is even fundamental to learning a common language. Learning a language would be impossible if those who know the language were not consistent in their references to objects and did not correct the misuse of words or syntax in a reliable way. Speaking a common language forms a linguistic community. Webb asserted that people are justified in trusting others within their own community because people in a community have a stake in one another being generally reliable (pp. 396-397). The theoretical implication for schools is that teachers, parents, and students have a vested interest in developing high levels of trust.

Trust, then, is vital to human survival,

learning, and functioning in a complex society. Trust can keep participants in a community or collective in line. It can be costly to earn the distrust of others one must interact with in an ongoing relationship. Such distrust would make it difficult for people to cooperate in accomplishing common goals. Teachers must trust students and parents in order to cooperate with them in accomplishing common goals. Schools play a special role in society and as such the relationships of trust in schools are vital.

#### The Facets of Trust

Trust is a complex concept with a variety of facets. However, a number of common conditions characterize most definitions of trust. What is common across virtually all definitions is a willingness to risk in the face of vulnerability. Where there is no vulnerability, there is no need for trust. Along with vulnerability, other facets drawn from the theoretical and empirical work on trust in a variety of contexts include benevolence, reliability, competency, honesty, and openness (Tschannen-Moran & Hoy, 1998). All these facets of trust have been shown to be important features of school social interaction (Hoy & Tschannen-Moran, 1999).

Perhaps the most familiar facet of trust is a sense of benevolence, conceived as confidence in the goodwill of those who are trusted or an attitude of mutual concern. Reliability is also important in social relations because behavior occurs over time. Trust is usually not a one-time affair. Trusted individuals are expected to behave both positively and consistently. Good intentions, however, are not enough. Competence is also critical in trust relations; individuals are not trusted if they do not have the skills to perform the task at hand. Teachers are likely not to trust an incompetent administrator, just as they are suspicious of parents who do not demonstrate appropriate care for their children. Honesty speaks to the integrity and authenticity of behavior and is another facet of trust. One must be able to rely on the word and action of an-

other in order to trust the other. Finally, openness is the extent to which relevant information is shared and not withheld; it is a process by which people make themselves vulnerable by sharing information with others. Openness breeds trust, whereas withholding behavior provokes suspicion and distrust. Hence, we define trust as "an individual's or group's willingness to be vulnerable to another party based on the confidence that the latter party is benevolent, reliable, competent, honest, and open" (Hoy & Tschannen-Moran, 1999, p. 189). Teachers' trust in students and parents contains all of the facets of trust that we have outlined.

#### Research Questions

Little is known about the distribution of trust across and within groups in schools. Indeed, although several studies have suggested that trust is important to schools (Hoffman, Sabo, Bliss, & Hoy, 1994; Hoy, Sabo, & Barnes, 1996; Hoy, Tarter, & Witkoskie, 1992; Hoy & Tschannen-Moran, 1999; Tarter, Bliss, & Hoy, 1989; Tarter, Sabo, & Hoy, 1995; Tschannen-Moran, in press; Tschannen-Moran & Hoy, 1998, 2000), none has considered its distribution among schools. In response, our first research question investigated the extent to which trust varied within and among schools. We also examined the extent to which school demographics and size explained variation in trust.

The relative effectiveness of urban elementary schools is a pressing issue for concerned parents and educators. Our review suggested that teacher trust in students and parents is critical to the effectiveness of parental and student involvement in inclusive forms of school governance. The extant literature also indicated that trust is a social feature that enables group members to achieve common goals. Trust is also important to the success of disadvantaged youth. Accordingly, we hypothesized that the trust teachers have in students and parents would be positively and significantly related to dif-

ferences between urban elementary schools in student academic achievement.

## Method

### Sample

Our study focused on trust in urban elementary schools. The population for this study was 47 elementary schools in one large urban school district in the Midwest. We selected an urban district for this research because we believed that trust is important to confronting the challenges these districts face. A benefit of this design feature is that our sample included only one type of district, thereby holding constant differences in trust that might occur between urban and nonurban districts. Further, because we focused on schools in one district, there was no possibility for uncontrolled between-district effects. Finally, because we limited this study to elementary schools, our design controlled for the organizational structure of schools as it varies between elementary, middle, and secondary schools.

Based on the results of a power analysis (Cohen, 1977; Keppel, 1991) that indicated a minimum required sample size of 44, we randomly selected 52 schools for inclusion in our study. After obtaining permission from the district office, a researcher contacted the principal from each school by phone to request an opportunity to administer surveys to school faculty. Three principals declined to participate. Of the 49 participating schools, two provided fewer than five faculty respondents on the trust measure. Following Halpin (1959), our decision rule for inclusion of a school in the data analysis was having a minimum of five faculty respondents. Therefore, these two schools were dropped from the sample, leaving 47 schools or 90% of the 52 schools randomly selected for inclusion.

### Data Collection

We obtained data on teacher trust by surveying the faculty in each of the 47 schools; student data were obtained from the central administrative office of the dis-

trict. Below we describe our data collection procedures in detail.

**Student variables.** We selected student achievement in mathematics and reading as the dependent variables for our study. We were interested in both of these variables not only because each is important to student literacy but also because each involves different student capabilities. In addition, as statistical controls for prior student achievement, we used measures of students' achievement in the same subjects collected 1 year earlier by the school district. Because we sought to include prior achievement in our analyses, we needed two waves of data. The district provided us with student achievement data, measured by a mandatory state achievement test for fourth-grade students, administered approximately 1 month after we surveyed faculties. Prior achievement scores were also provided by the school district for those fourth-grade students who had attended the district the previous year when the seventh edition of the Metropolitan Achievement Test was administered to third graders.

The state Department of Education provided data indicating adequate KR-20 reliability scores (.88 mathematics, .86 reading) for the state assessment administered to the fourth-grade students in this study. Turning to student scores on the Metropolitan Test, Finley (1995) reported that KR-20 reliability scores are adequate. In addition, separate reviews indicated that although concurrent and construct validity evidence for the Metropolitan Achievement Test are adequate, content validity is specific to schools' curricular objectives (Hambleton, 1995; Nitko, 1994; Rogers, 1994). In the sampled district, administrators indicated that the test was used because it was an appropriate assessment that matched the district's third-grade curriculum. Also, the district followed the state's model fourth-grade curriculum. In sum, we judged student achievement scores on both the third- and fourth-grade assessments to be sufficiently valid and reliable.

In addition to student achievement data, the school district also provided gender, race/ethnicity, and free and reduced-price lunch status (a proxy for SES) data for the fourth-grade students in the schools we sampled. We dummy coded each of these variables so that a value of "1" respectively denoted female and African American as well as the receipt of a free or reduced-price lunch.

**Teacher trust.** Teacher surveys were administered by a researcher during regularly scheduled faculty meetings. Because other data not reported in this article were also collected from teachers during these meetings, half of the teachers in the room received a survey containing questions assessing teacher trust and other social processes in schools. The other half received another survey with different questions. Distribution of surveys to teachers at the meetings was randomized.

Our measure of teacher trust in students and parents consisted of 15 items (see Appendix). The items measured all the facets of trust described earlier. For example, honesty was measured with items such as "Students in this school cheat if they have the chance" and "Teachers believe what parents tell them." "Students are caring toward one another" was an example of benevolence. Reliability was tapped by, "Parents in this school are reliable in their commitments," and openness was measured by, "The students in this school talk freely about their lives outside of school." Finally, items such as "Teachers in this school trust the parents" and "Teachers in this school trust the students" were general measures of the willingness to risk vulnerability. Response options for these questions ranged along a six-point Likert-type scale from "strongly disagree" to "strongly agree." The construct and predictive validity of scores on the trust scale have been supported in earlier research; as was expected, trust was negatively related to alienation and conflict and positively related to teacher efficacy. These validity findings and the factor analytic study of the instru-

ment are reported in Hoy and Tschannen-Moran (1999). In the present sample, the alpha coefficient of reliability was .97.

### Data Analysis

One reason for the lack of knowledge about the distribution of trust may be that conventional methods of analysis (e.g., correlation and regression) do not permit the partitioning of variance in a dependent variable between and within organizational units. Therefore, to examine the distribution of teacher trust across and within schools, we employed hierarchical linear modeling (HLM). This enabled us to model teacher trust as a feature of school organization that varied both within and among schools. In addition, our second research question was multilevel, focusing on differences among schools in student achievement. Therefore, we also applied HLM to model the effect of trust on this variable. In the multilevel analyses, both student- and school-level variables were grand-mean centered. In addition, we set the intercept and slopes to vary among schools.

## Results

Our final student sample included 2,536 fourth-grade students and 452 teachers in 47 schools. Because we conducted longitudinal research in an urban district with high student mobility, some missing data were an inevitable consequence of our efforts to include prior student achievement in our models. Of the fourth-grade students attending the schools we sampled, slightly over 86% had taken both the mathematics and reading Metropolitan Achievement Tests in the district 1 year earlier as third-grade students. Descriptive statistics for both the student- and school-level variables appear in Table 1.

The mean size of the elementary school faculties surveyed was just over 21. By design we intended to measure teacher trust by obtaining responses from approximately half of the faculty. However, because there

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TABLE 1. Descriptive Statistics for Student and School Variables

	Mean	SD	Min.	Max.
<b>Student level (N = 2,536):</b>				
Female	.48	.50	0	1
African American	.57	.49	0	1
Socioeconomic status	.67	.47	0	1
Mathematics achievement	199.85	23.47	106.00	323.00
Reading achievement	207.73	18.04	137.00	279.00
Prior mathematics achievement	44.31	22.34	1.00	99.00
Prior reading achievement	45.51	20.68	1.00	99.00
<b>School level (N = 47):</b>				
Teacher trust in students and parents	3.70	.58	2.76	4.88
School size	401.40	107.26	229	710
Faculty size	21.24	5.51	13	37
Faculty members surveyed	9.62	2.58	5	15
Proportion of students with disadvantaged SES	.62	.20	.10	.89
Proportion of African-American students	.56	.28	.08	1.00
Proportion of female students	.46	.08	.27	.64

were uncontrollable events (e.g., teacher absences and schedule conflicts), not every teacher attended the meetings in which surveys were administered. Our research team did not attempt to collect data from those who were absent. On average across the schools in the study, we obtained responses from approximately 45% of the teachers in the school. As shown in Table 1, the mean number of responses per school was about 10. In no case did teachers present at the faculty meetings we attended refuse to complete the surveys. Over 99% of the teacher surveys returned were usable. The elementary schools we sampled were K through 5, and teachers from all grades attended the meetings in which we collected our data. Because we were interested in the collective level of trust and because our surveys were anonymous, we did not attempt to track the grade level that teachers taught.

Teacher responses to the separate trust items were aggregated to the school level. This procedure resulted in a mean score for each school on each of the 15 items. At the school level, the items were submitted to a principal axis factor analysis. We were surprised that items assessing trust in parents and trust in students united to form a single measure of trust. Apparently, teachers did not differentiate their trust between parents and students in these elementary schools.

Trust in both parents and students was measured by one scale that represented all of the facets of trust. In this analysis, one factor was extracted with an eigenvalue of 11.11 explaining over 74% of the variance. Factor loadings are reported in the appendix. The factor loadings ranged from .95 to .60, with all but one at .76 or higher. The single-factor structure, combined with the strong factor loadings, suggested that the variables in our scale captured the underlying factor of school trust. The measure of trust for each school was then constructed as the mean of the 15 mean item scores for each school.

#### Distribution of Teacher Trust

Our first research question addressed the extent to which trust varied among schools. To answer this question we conducted an unconditional multilevel analysis with teacher trust as the dependent variable. The unconditional analysis in HLM is a model with no predictors serving to partition the variance in a dependent variable into its within- and between-school components. Results of this analysis are displayed in Table 2. The HLM estimate of reliability for the school means (i.e., intercepts) was strong ( $\lambda = .902$ ). The results indicated that trust in the sampled urban elementary schools varied slightly more between schools than within (proportion of variance

TABLE 2. HLM Unconditional Model Characteristics: Variation between Schools in Teacher Trust<sup>a</sup>

Intercept (school average)	3.69
Parameter variance:	
Between school	.30045
Within school	.29345
HLM reliability estimate	.902
Proportion of variance between schools	.50589 <sup>b*</sup>

<sup>a</sup>N = 452 students in 47 schools.

<sup>b</sup>Chi-square = 491.93, *df* = 46.

\**p* < .001.

in trust between schools = 50.5%). In other words, half the variation in teachers' perceptions of trust was associated with school membership.

Given the substantial differences among schools in teacher trust, we sought to identify school characteristics that might explain this variation. In particular, we were interested in the extent to which the demographic composition and size of the student body were predictive of differences among schools in trust. In Table 3 we display the results of several means as outcomes HLM models. In the first three models we independently tested the relation between trust and (1) the proportion of the student body that was African American, (2) the proportion of the student body that received a free or reduced-price lunch, and (3) school size. In Model 4, we show the results of an analysis that combined the statistically significant predictors identified in Models 1 through 3.

The results of Model 1 demonstrated that, with no other predictors in the model, the proportion of African-American students in the student body was associated with 33% of the variance between schools

in trust. Importantly, Model 2 showed that SES explained twice as much between-school variance in trust. Model 3 showed that although the gamma coefficient for school size was negative, the effect was not statistically significant. Model 4 combined SES and race/ethnicity to explain variation in trust. Notably, though SES alone explained 66% (Model 2) of the variance in trust, the addition of race/ethnicity in Model 4 added little (about 3%) to its explanatory power. Thus, Model 4 indicated that when they were considered together, student social class, not race/ethnicity, explained the majority of the variability between schools in teacher trust in the urban elementary schools we studied.

#### Effects of Trust

After identifying trust as a social feature that varied considerably among schools, we used HLM analyses to test our main hypothesis that trust is related to differences among schools in student achievement. We began the multilevel tests with a set of unconditional models, one for each dependent variable (mathematics and reading achievement). Our purpose was to estimate the extent to which student achievement varied between schools. The results of the unconditional models for mathematics and reading achievement are displayed in Table 4. The HLM estimates of reliability were strong for both mathematics ( $\lambda = .952$ ) and reading ( $\lambda = .933$ ). The chi-square tests of significance indicated that the proportion of variance between schools for both mathematics (26.8%) and reading

TABLE 3. Prediction of Variation in Teacher Trust among School Means with Selected School Characteristics<sup>a</sup>

	Model 1	Model 2	Model 3	Model 4
Intercept	3.69	3.69	3.70	3.69
Proportion African American	1.15*			.43
Proportion low SES		2.22*		1.90*
Number of students			-.0013	
Proportion of between-school variability explained by model <sup>b</sup>	.33	.66	.04	.69

<sup>a</sup>N = 452 teachers in 47 schools.

<sup>b</sup>Calculated as the reduction in between-school parameter variance reported in Table 2.

\**p* < .001.

TABLE 4. HLM Unconditional Model Characteristics: Variation between Schools in Mathematics and Reading Achievement<sup>a</sup>

	Mathematics	Reading
Intercept (school average)	200.57	208.05
Between-school parameter variance	149.03	65.34
Within-school parameter variance	406.77	254.52
HLM reliability estimate for intercepts	.952	.933
Proportion of variance between schools	.26814 <sup>*</sup>	.20428 <sup>*</sup>

<sup>a</sup>N = 2,536 in 47 schools.

<sup>b</sup>Chi-square = 900.40, *df* = 46.

<sup>c</sup>Chi-square = 635.49, *df* = 46.

<sup>\*</sup>*p* < .001.

TABLE 5. HLM Analysis of the Effect of Student Characteristics and Teacher Trust on Mathematics and Reading Achievement<sup>a</sup>

	Mathematics	Reading
Intercept (school average)	200.00	207.89
Teacher trust <sup>b</sup> (average effect of trust)	6.89 <sup>*</sup>	5.15 <sup>*</sup>
Socioeconomic status	-3.09 <sup>*</sup>	-2.65 <sup>*</sup>
Female	1.01	1.27 <sup>**</sup>
African American	-4.35 <sup>*</sup>	-3.90 <sup>*</sup>
Prior mathematics achievement	.54 <sup>*</sup>	
Prior reading achievement		.42 <sup>*</sup>
HLM variance parameters:		
Between-school parameter variance	28.00	12.38
Proportion of between-school variability explained by model	.81	.81

<sup>a</sup>N = 2,536 students in 47 schools.

<sup>b</sup>Teacher trust is a level-2 predictor of between-school variability in student achievement, adjusted for student demographics and prior achievement.

<sup>\*</sup>*p* < .001.

<sup>\*\*</sup>*p* < .01.

(20.4%) was statistically nonzero. Hence, we continued our multilevel modeling to test the hypothesis that teacher trust in students and teachers was significantly and positively related to the achievement differences among the schools in our sample.

Next, we adjusted school means for student demographics (race, gender, and SES) and prior achievement by grand-mean centering these variables and allowing all level-2 error terms to vary between schools. With school means adjusted for student characteristics, we entered teacher trust in students and parents as a level-2 predictor of differences between schools in student achievement. The results of this analysis are reported in Table 5. The findings showed that student achievement was significantly and negatively associated with both minor-

ity status and disadvantaged socioeconomic status, whereas prior achievement had a significant positive effect. Interestingly, gender was not significantly associated with mathematics achievement but was positively and significantly related to reading achievement. The most important finding in this analysis, however, was that even with school means adjusted for student characteristics, trust was a significant positive predictor of the differences between schools in student achievement. Notably, this model explained 81% of the between-school variation in both mathematics and reading achievement.

Although the results in Table 5 were encouraging, we were concerned that other school-level characteristics were not adequately controlled in our level-2 model,

which in Table 5 contained only trust as a school-level predictor. Because our earlier analysis of the variation in teacher trust (Table 3) suggested that school-level SES was the largest predictor of variation between schools in teacher trust, we decided to add school-level SES to our model. For this final test of the effects of trust, we aggregated student SES to the school level for each school to produce a mean score that represented the proportion of students in a school receiving a free or reduced-price lunch. This variable was then entered in our final HLM model together with trust and the student-level control variables.

The results of the final HLM model are displayed in Table 6. Because the size of the effects of student-level predictors changed little from those reported in Table 5, and in the interest of parsimonious presentation, Table 6 includes only the level-2 coefficients for the effect of trust and of school SES. Notably, the addition of SES at the school level did not improve the explanatory power of the model. Moreover, school-level SES was a nonsignificant predictor, whereas trust continued to be a positive predictor of differences between schools in student mathematics and reading achievement.

## Discussion

The results of our study provide important insight into the distribution and effects of

teacher trust among urban elementary schools. First, more than half of the variance in teacher trust is associated with school membership. Teachers in different schools even in schools within the same district vary considerably in the collective level of trust they hold for students and parents. When we examined this variability, we found that teacher trust is not affected much by the size of the schools. Instead, teacher trust is systematically associated with student socioeconomic status—the larger the proportion of poor students in the school, the lower teachers' perceptions of trust. Indeed, the proportion of students receiving a free or reduced-price lunch in a given school explains about two-thirds of the differences in trust between schools. Although this finding is distressing, it is important to realize that SES—not race—explained the majority of the variance in teacher trust. This distinction suggests that poverty has a large negative influence on the social relationships between students and parents, and the teachers who serve them. Cultural differences that arise from differences in economic class seem to be harder to overcome in the establishment of trusting relationships.

Trusting relationships make an important contribution to students' academic achievement. Our results showed that after accounting for the effects of student char-

TABLE 6. Full HLM Analysis: The Effect of Teacher Trust and School SES on Differences between Schools in Student Achievement<sup>a</sup>

	Mathematics	Reading
Intercept <sup>b</sup> (school average)	200.01	207.88
Teacher trust	6.39 <sup>*</sup>	3.61 <sup>**</sup>
Proportion of students receiving free or reduced-price lunch	-2.06 <sup>c</sup>	-5.95 <sup>d</sup>
HLM reliability estimate for intercepts	.73	.65
HLM variance parameters:		
Between-school parameter variance	28.71	12.30
Proportion of between-school variability explained by full model	.81	.81

<sup>a</sup>N = 2,536 students in 47 schools.

<sup>b</sup>Intercepts are adjusted for all level-1 variables appearing in Table 5.

<sup>c</sup>*p* = .747.

<sup>d</sup>*p* = .203.

<sup>\*</sup>*p* < .001.

<sup>\*\*</sup>*p* < .01.

acteristics, including race, gender, SES, and past achievement, trust is a positive predictor of the variance in student achievement among schools. Further, even after controlling for the effects of the proportion of low-income students in a school as a whole, trust still plays an important role in student achievement. In fact, the amount of trust teachers have in students and in parents outweighs the effects of poverty, because school SES is not a significant predictor of differences between schools in student achievement when the effect of trust is considered. Trust seems to foster a context that supports student achievement, even in the face of poverty.

Given the continuous calls for reform and accountability in public education, particularly in large urban districts such as the one studied here, we suggest that the critical need to build supportive social features such as trust deserves more attention. Our findings indicate that teacher trust in students and parents is an important social feature that is distributed inequitably among the schools we studied. The need to build trust is signaled by the strength of the effect of trust on student achievement. Students have higher achievement in schools where teachers report greater trust. Our findings also suggest that teachers in schools with more low-income students seem to find trust harder to cultivate. These are the places with the most critical need to learn more about building trust.

This study is only a beginning. Although intriguing, the findings stem from one study of one district, at one level of schooling, in one context. Although the narrowness of the sample helped to control for unexplained variance, it also limits the generalizability of the results. Future research should examine the link between trust and achievement in other contexts and at other levels of schooling. The negative relation between trust and poverty should be confirmed in other settings. In addition, because of the small size of most elementary schools and the design of the study, findings

are based on the perceptions of an average of 10 teachers per school. Larger schools with larger faculties might provide a finer-grained picture of trust.

### Conclusion

This study offers new insight into the importance of teacher trust to student learning. To our knowledge, this is the first study that links faculty trust in students and parents with student achievement. Our findings suggest that trust makes schools better places for students to learn, perhaps by enabling and empowering productive connections between families and schools. There seems to be a collective effect of trust; in schools where there was greater trust, student achievement was generally higher.

In some ways, the findings are not surprising. Rotter (1967) asserted that trust is a fundamental component of human learning. When teachers believe their students are competent and reliable, they create learning environments that facilitate student academic success. When students trust their teachers, they are more likely to take the risks that new learning entails.

Trust is a reciprocal, not a one-way, process. All members of a school community, not just teachers, need to act to build trust. Attention must be paid to the various facets of trust. Parents and teachers alike need to be explicit in demonstrating their concern for the well-being of students. Schools can assist overwhelmed parents in finding constructive ways to care for and discipline their children. Teachers need to persuade parents not only of their caring but also of their competence to foster student learning. They should discuss their teaching methods so that parents can become partners in the educational process. School personnel need to be not only reliable but open and scrupulously honest in their dealings with families. When families fail to respond in kind, they need to be confronted with kindness and understanding rather than judgment and disdain in order to foster norms that support mutual respect and trustworthiness.

If teachers are to help students make maximum use of the opportunities that schooling can provide (Stanton-Salazar, 1997), the results of this study signal the need to build trust. Without trust, students lose a valuable form of social support. When teachers, students, and parents trust each other and work together cooperatively, a climate of success is likely. In contrast, when these groups do not trust one another, they seek to minimize their vulnerability. The result is disengagement from the educational process that comes at the expense of student achievement. Because of the tendency of trust to build on itself, higher student achievement is likely to produce even greater trust, whereas low student achievement could be expected to lead to a self-reinforcing spiral of blame and suspicion on the part of teachers, parents, and students that would further impair student achievement (Tschannen-Moran & Hoy, 2000).

The development of trusting relationships seems a critical vehicle for improving urban elementary schools and overcoming some of the disadvantages of poverty. We found that poverty more than ethnicity seems to be the culprit in hindering the trust

that could lead to achievement for many students in urban schools. This suggests that schools with high concentrations of poor students, not just urban schools, may need to focus on the development of trust. Future research on trust in rural and suburban schools could respond to this conjecture.

Educators and researchers need to understand more about the mechanisms that link trust and achievement. Our findings should encourage further exploration not only of how trust relationships among teachers, parents, and students relate to risk taking but also of how they influence persistence and effort. Teachers' efficacy beliefs may be hampered in a climate of distrust. Teachers' level of trust and their attitudes about student control also seem promising avenues to explore in understanding the link between trust and achievement. With the compelling evidence presented in this article of the important link between trust and student achievement, and especially the importance of that link in explaining the learning outcomes of low-income students, researchers need to work vigorously to unlock the secrets of trust in school settings.

### Appendix

TABLE A1. Items on the Measure of Teacher Trust<sup>a</sup> and Their Factor Loadings

Item	Factor Loading
1. Students in this school are reliable.	.947
2. Students are caring toward one another.	.945
3. Students in this school can be counted on to do their work.	.944
4. Teachers can count on the parents in this school.	.925
5. Teachers think most of the parents do a good job.	.910
6. Teachers in this school trust the parents to support them.	.909
7. Parents in this school are reliable in their commitments.	.857
8. Teachers in this school believe what students say.	.855
9. Teachers in this school trust their students.	.855
10. Teachers can believe what parents tell them.	.819
11. The students in this school have to be closely supervised.	.814
12. Teachers here believe students are competent learners.	.789
13. Students in this school cheat if they have the chance.	.760
14. Students here are secretive.	.600
15. The students in this school talk freely about their lives outside of school.	.600

<sup>a</sup>Alpha coefficient of reliability = .97.

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