



# Collective trust: a social indicator of instructional capacity

Collective trust

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## Abstract

**Purpose** – The purpose of this study is to test the validity of using collective trust as a social indicator of instructional capacity.

**Design/methodology/approach** – A hypothesized model was advanced for the empirical investigation. Collective trust was specified as a latent construct with observable indicators being principal trust in faculty (PTF), faculty trust in principal (FTP), faculty trust in colleagues (FTC), and faculty trust in students (FTS). It was hypothesized that enabling school structure is directly related to the latent collective trust construct and collective trust is directly related to school performance. Data were collected in the spring of 2010/11 from teachers and students in 85 schools in an urban school district in a southwestern state. A partially latent structural regression model was tested in AMOS 7.0.

**Findings** – Results of the measurement model support the theoretical relationship among faculty trust in principal, faculty trust in colleagues, faculty trust in students, and principal trust in faculty. Both directional hypotheses were supported: enabling school structure had a strong, direct effect on a culture collective trust and collective trust had a strong, direct effect on school performance.

**Research limitations/implications** – The sample consisted of schools in one urban district in the southwestern part of the USA, and collective trust only operationalized the social dimension of instructional capacity.

**Practical implications** – Regular and consistent measures of collective trust have the potential to improve how administrators at site and district levels manage the implementation of improvement strategies designed to build capacity.

**Originality/value** – Many theoretical discussions treat trust as a constitutive property of capacity building, but few studies have empirically tested *a priori* models that specify relationships among structures and processes aligned with instructional capacity, collective trust, and school performance.

**Keywords** Instructional capacity, Collective trust, School improvement, Trust, Schools, Performance management

**Paper type** Research paper

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School improvement has become big business in the USA and across the world. Everywhere you turn there seems to be a reform model, intervention, evaluation framework, or technology marketed as an innovative and proven tool to increase student achievement. The problem is that marketing and reality do not always converge. The cumulative effect of the school improvement industry in the USA and elsewhere has arguably been tepid progress and little sustained change (Darling-Hammond, 2005; Harris, 2011; Honig, 2009). Rowan (2002) argues that few schools and school systems have realized the proclaimed promises of innovations and reforms. Fullan (2010) suggests persistent achievement gaps, sporadic improvement, and reduced capacity for whole system change has been the legacy of unprecedented spending on predefined interventions marketed as effective products to turnaround schools.

Two streams of research are critical to consider as we face yet another wave of large-scale school improvement initiatives. First, is the nearly six decades of school reform



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evidence that raises questions about the capability of predefined programs to trigger whole system improvement. In general, evidence indicates that no reform works in every case (Stringfield *et al.*, 2008), reforms generally produce first order change but not changes to school culture (Hallinger, 2003), and improvements rarely last beyond the tenure of the school leader (Bryk *et al.*, 2010; Cuban and Usdan, 2003). Second, is evidence on the critical nature of the social and human enterprise of schools and school systems. High-performing schools are defined by their capacity to turn information into knowledge and knowledge into action that is responsive to changing school needs (Bryk *et al.*, 2010; Darling-Hammond, 2005; Forsyth *et al.*, 2011; Marks and Louis, 1999). Many scholars see capacity building as the lynch pin to meaningful school improvement (Fullan, 2010; Hargreaves, 2001; Darling-Hammond, 2005; Forsyth *et al.*, 2011).

Knowledge about capacity building as an improvement mechanism has primarily accumulated from descriptive accounts of high-performing schools and school systems in the USA, Canada, Great Britain, and Australia (see Crowther, 2011; Fullan, 2010; Harris, 2011; Hargreaves, 2011; King and Bouchard, 2011). Descriptive evidence has contributed to the theoretical understanding of instructional capacity, but descriptive evidence has not yet resulted in the specification of social indicators that measure levels of instructional capacity within schools. Efforts to better understand the formation and effects of instructional capacity are hindered without social indicators the measure resources and processes that facilitate knowledge creation and professional learning. This study seeks to address the gap in the literature by testing the validity of using forms of collective trust as a social indicator of instructional capacity.

### **The meaning of instructional capacity**

Capacity is often referenced as an essential condition for effective teaching, quality learning, and school improvement (Bain *et al.*, 2011). Early capacity research by Newman and Wahlage (1995), Newman *et al.* (1997), Corcoran and Goertz (1995), and Cohen and Ball (1999) focussed on instructional environments supportive of quality teaching. They found that interactions among instructional materials, teachers, and students contributed to the capacity of a school to enhance student learning. Research evolved from describing elements of capacity to exploring processes supportive of its formation (King and Newman, 2001; Spillane and Louis, 2002). More recent work centers on policies (Darling-Hammond, 2005; Fullan, 2010) and improvement models (Crowther, 2011) designed to support localized knowledge creation and learning among school professionals. Understanding the theoretical properties of instructional capacity is an important first step to measuring its development in schools.

Recent definitions have converged around two interdependent properties of instructional capacity: resources within schools that enhance teaching effectiveness and social processes that facilitate knowledge creation and professional learning. Newmann *et al.* (2000), and Elmore (2003) provide examples of definitions based on resources associated with effective instructional programs. Newmann *et al.* (2000) described instructional capacity as embodied in competent teachers, professional community, and program coherence. Similarly, Elmore (2003) identified knowledgeable teachers, instructional resources, effective leadership, and program coherence as characteristics of schools operating at high capacity. Rather than view instructional capacity as the sum of fixed resources, Cohen and Ball (1999) argue that capacity exists

in processes that allow school professionals to develop knowledge and build expertise. Similarly, Sharrat and Fullan (2009) refer to capacity as a dynamic process of knowledge development. Purposeful actions by school professionals can either form a strong, coherent, and predictable instructional core or can give rise to isolated and fragmented instructional practices (Cohen and Ball, 1999; King and Bouchard, 2011). Instructional resources will not advance student learning across classrooms unless processes and conditions facilitate the continuous study of teaching and learning (Bryk *et al.*, 2010; Forsyth *et al.*, 2011; Hatch, 2006).

It is hard to envision a high-performing system without access to adequate resources; or, conversely, a system where effective instructional processes do not generate additional resources to enhance learning. Dinham and Crowther (2011) suggest that material features (e.g. teachers, infrastructure, instructional resources) and intangible features embodied in culture and climate combine to form capacity. Likewise, Hargreaves (2011) defines capacity as “those resources and processes that bear directly or indirectly on what happens in classrooms” (p. 685). Resources and processes optimize performance if they work together to support teacher learning and lead to enhanced student development (Crowther, 2011; Hargreaves, 2011; Harris, 2011). Knowledgeable teachers, professional structures, and instructional materials can support collaborative and cooperative processes, and effective processes have consequences for social resources that improve readiness to meet student needs. For this reason, instructional capacity is defined by the degree to which resources and processes enable school professionals to convert information into knowledge and knowledge into changes that respond to learning needs of students (Crowther, 2011; Hargreaves, 2001).

### **The formation of instructional capacity**

Capacity building occurs when structures, processes, and behaviors facilitate learning among school professionals (Darling-Hammond, 2005). Many schools and school systems embrace capacity building as an approach to improve teaching but few possess the social infrastructure needed to sustain a culture where the collective study of teaching and learning leads to continuous improvement (Smylie, 2010). Darling-Hammond (2005) sheds light on what type of environment is needed. She argues schools need performance cultures that create learning opportunities for school professionals, parents, and community members; allow for widespread engagement in developing improvement strategies; support simultaneous change; and use professional standards to guide shared inquiry. Elmore (2000) speaks to the value of similar conditions when he notes that improvement requires the organization and deployment of knowledge, resources, and instructional skills.

Awareness of low instructional capacity has led researchers to study reforms that seek to organize schools and school systems in ways that leverage human and social resources for school effectiveness. A few examples of international research follow. Harris (2011) describes an improvement initiative in Wales that uses professional collaboration and networking as mechanisms to develop professional school cultures based on mutual accountability, pedagogical improvement, and what she refers to as action inquiry. Crowther (2011) documents a capacity building model in Australia based on parallel leadership, shared inquiry, and collective action. Hargreaves (2011) reports on how systems in England are working to build tighter inter-institutional connections to support stronger coupling of professionals within schools. King and Bouchard (2011) study a capacity building initiative in Wisconsin that brings together

the University of Wisconsin, the state department of education, local urban districts, and schools in the district. These studies highlight the international appeal of using professional relationships and strong social ties to coordinate teaching and learning more efficiently and effectively.

The above research on capacity building points to the role of cooperative relationships and professional norms for engendering a culture of quality performance (Cohen and Ball, 1999). Without a supportive normative environment, capacity approaches stand a slim chance of fostering the degree of shared responsibility, cooperative interactions, and commitment to continuous improvement needed to move schools and school systems forward (Harris, 2011; Smylie, 2010). As Figure 1 illustrates, developing and sustaining instructional capacity is an ongoing process whereby school professionals gather information, convert information into knowledge, and use knowledge to adapt practices to changing needs. Information can entail anything from observations of teaching practices and student behavior; formal data collected from assessments or other measurements; or conceptual knowledge held by school professionals. Information is necessary to produce knowledge but does not result in knowledge creation without purposive actions by individuals. Nonaka (1994) argued that intentional actions, professional autonomy, and interactions among individuals and with the environment fuel the generation of knowledge in organizations.

### Collective trust and instructional capacity

With the relational context playing a critical role in the performance of instructional systems, it stands to reason that valid capacity indicators need to capture social conditions that both facilitate information exchange and knowledge transfer, and are indicative of learning organizations. Collective trust is a social condition that meets these criteria. Collective trust, as defined by Forsyth *et al.* (2011), is “a stable group property rooted in the shared perceptions and affect about the trustworthiness of another group or individual” (p. 22). Shared trust beliefs are based on the perceived openness, honesty, benevolence, reliability, and competence of the trustee (Hoy and Tschannen-Moran, 1999). For example, when an elementary teacher observes a parent encouraging and nurturing his child, such behavior is compared to expectations of parent “benevolent” behavior. This event becomes part of the trust evidence about the parent group when the teacher shares the example with other teachers through specific mention of it or through the teacher’s enhanced positive affect toward parents.

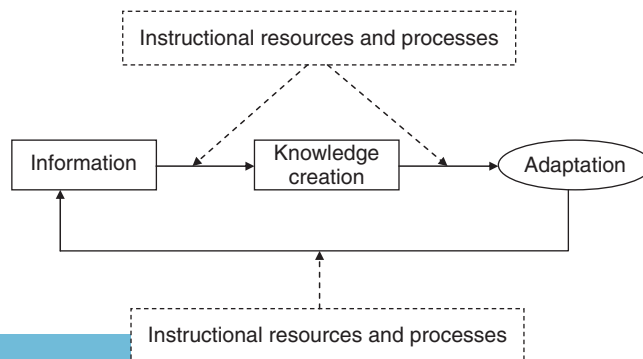


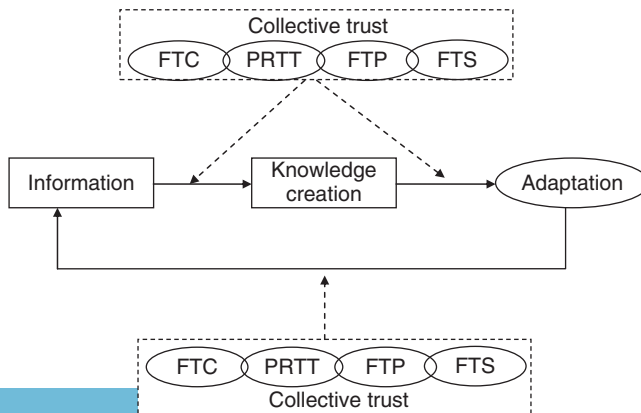
Figure 1.  
Instructional capacity

As in the above example, perceived trustworthiness is higher when actual behavior matches expectations.

In schools, information does not lead to shared understanding and action unless individuals and groups are willing to risk vulnerability. Figure 2 demonstrates how different forms of collective trust combine to support knowledge development and adaptive behaviors by teachers. Collective trust motivates school professionals to share and explore information in ways that increase understanding about the effects of processes and practices on student learning and development. In contrast, distrust prevents school professionals from acting on new knowledge in ways that motivate them to adapt practices to emerging needs (Bryk and Schneider, 2002; Forsyth *et al.*, 2011; Tschannen-Moran, 2004). Fear blocks risk taking, fosters self-protected behavior, and restricts innovation, the very behaviors necessary to stimulate learning in students. Collective trust is indicative of instructional systems that operate at optimal levels (Forsyth *et al.*, 2011).

Different forms of collective trust are likely to influence capacity in different ways. Principal trust in faculty (PTF) affords teachers professional discretion for studying and improving instructional practices. High PTF can be empowering, but low principal trust can result in more formal control that is inimical to cooperation, autonomy, and interdependent behaviors (Forsyth *et al.*, 2011). Faculty trust in principal (FTP) has implications for teacher commitment to strategies designed to improve capacity and strengthen performance. Low FTP lessens commitment to open and cooperative interactions between teachers and principals (Tschannen-Moran, 2004). Marginal trust in the principal is also an indication of harmful organizational problems like poor communication, micromanaging behaviors, and ridged structures and processes (Tschannen-Moran, 2009), all conditions that constrict knowledge creation and learning.

Actions by teachers and students have consequences for instructional capacity as well. Interaction patterns among teachers and between teachers and students determine the instructional climate in classrooms and in schools. Faculty trust in colleagues (FTC) facilitates knowledge creation by supporting professional interactions that promote sense making and shared understanding of instructional performance (Cosner, 2009). Teachers are more likely to teach behind closed doors and limit interactions with colleagues when trust is low. Faculty trust in students (FTS) provokes a willingness to use knowledge about past instructional experiences to



**Figure 2.**  
Collective trust and instructional capacity

improve future lessons. Teachers are more inclined to learn and grow when they perceive students as responsible learners (Tschannen-Moran, 2004).

In sum, instructional capacity and collective trust are not innate conditions in school organizations; they are built and nurtured from actions and interactions of school professionals as they carry out the core mission of schools (Adams, 2008; Tschannen-Moran, 2009). Behaviors consistent with socially defined expectations of role groups allow trust to grow. For collective trust to be a valid measure of capacity, its development should be shaped by professional decisions, actions, and interactions of school members, and it should be related to indicators of school effectiveness.

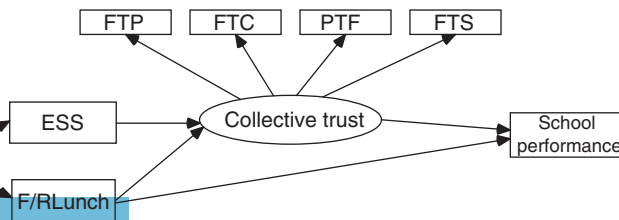
### Hypothesized model

A hypothesized model was advanced to test the theoretical argument that PTF, FTP, FTC, and FTS combine to form a culture of collective trust that supports knowledge creation and adaptive practice (Figure 3). It was also hypothesized that enabling school structure is directly related to a culture of collective trust. Further, the hypothesized model predicts that a culture of collective trust explains variation in school performance.

The validity of using forms of collective trust as a social indicator of instructional capacity depends on three criteria: first, the latent collective trust variable needs to explain variance among the observable trust forms. The lack of shared variance would indicate little to no relationship among the observable dimensions of collective trust, implying that collective trust is not a cohesive condition in schools (Law *et al.*, 1999). Second, empirical data need to support the theoretical relationship between organizational structures supportive of professional control and a culture of collective trust. The absence of an empirical relationship would raise questions about the actual sources of collective trust. Finally, the latent collective trust variable needs to be related to school performance. Capacity equates to quality performance; thus, if the combined social indicators are not predictive of school outcomes their power to optimize school performance would be in doubt.

There is existing empirical support for the hypothesized model. Tschannen-Moran (2009) found in a study of 80 middle schools that principals using formalization and centralization to support professional teaching behaviors, cooperative interactions, and shared sense making engendered higher faculty trust. Hoy (2003) also found organizational designs that promoted shared problem solving, collaboration, and professional influence over teaching were associated with high faculty trust. Forsyth *et al.* (2011) cite studies from the general organizational and school literatures that suggest collective trust is a function of leadership practices and structures that unite individuals around shared processes and goals. Support for the effects of collective trust on school performance comes from evidence linking trust to student achievement and school improvement. Faculty trust is a social determinant of school improvement,

**Figure 3.**  
Hypothesized model of  
enabling structure,  
collective trust, and  
school performance



student achievement, teaching effectiveness, and school effectiveness in the USA and abroad (Adams, 2010; Bryk and Schneider, 2002; Forsyth *et al.*, 2011; Hargreaves, 2001, 2011).

### Research methods

This study used an urban school district in a southwestern state as the case to explore the utility of using collective trust to measure capacity of instructional systems. Yin (2009) argues that a case study is appropriate when the objective is to understand a social phenomenon within a specific context. Because urban schools generally suffer from lower capacity (King and Bouchard, 2011), it was important to explore the utility of collective trust as a measure of capacity within an environment where improvement has generally been inconsistent and resources and processes tend to constrain professional discretion.

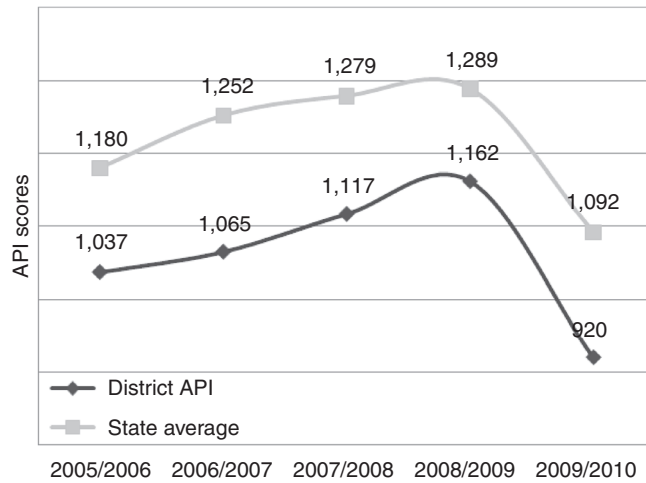
#### *The context*

South School District is located in a city with a metropolitan population of approximately 950,000 residents. The district serves approximately 42,000 students across 88 sites. Of the 42,000 students, approximately 31 percent are African American, 29 percent Caucasian, 25 percent Hispanic, 8 percent Native American, and 2 percent Asian. In total, 83 percent of the students qualified for the federal lunch subsidy. Nearly 2,400 teachers are employed in the district. Teachers average ten years of teaching experience and approximately 25 percent of teachers hold advanced degrees.

The district, similar to urban systems across the country, faces immense pressure to improve performance outcomes. Annual yearly progress indicators suggest a steady improvement from 2005/2006 to 2009/2010, but a persistent achievement gap with the state average. The achievement gap was 163 points in 2005/2006 and 172 points in 2009/2010. The AYP metric is a scale score ranging from 0 to 1,500 with 80 percent of a district's score based on state curricular tests, 10 percent on attendance rates, and 10 percent on graduation and college going rates. The standard deviation for districts in the state was 150 points, placing the urban district in the bottom 15 percent of the state population. District and state averages dropped considerably in 2009/2010 as performance standards were raised. Like many urban systems, South School District is in the beginning stages of improvement initiatives aimed at improving teacher and leader effectiveness with redesigned performance evaluation frameworks and valued-added achievement measures (Figure 4).

#### *Data source*

Data were collected in the spring of 2010/2011 from teachers and students in 85 elementary, middle, and high schools in South School District. Researchers administered electronic surveys through Qualtrics to teachers and principals in the 85 schools. Teachers were stratified by school then randomly assigned to one of two surveys. Two schools were removed from the sample due to having less than five teachers respond to the survey, leaving a final sample of 83 schools. Usable responses were received from 1,039 teachers across the district, resulting in a response rate of 68 percent and an average of approximately 12 teachers per school. The total number of schools fall on the small end of sample sizes for structural equation modeling, but the sample size is within established ratio standards for number of cases to variables (10:1 or 15:1). Type II error, or accepting the null hypothesis when it is false, is the primary concern with small sample sizes in regression techniques (Pedhazur, 1997). To guard against committing a



**Figure 4.**  
District performance  
from 2006 to 2010

Type II error, it is necessary to look at the comparative fit indices for a more accurate evaluation of model fit (these are reported in Table III) (Schumaker and Lomax, 2004). With random assignment of teachers to surveys, the average of 12 teachers per school is an adequate within-school sample size to justify data aggregation (Hubbard, 2010).

School achievement and demographic data came from the state department of education. Data are public and assessable through the internet. Descriptive data on the sampled schools are reported in Table I. Because scales on the trust measures differ, mean differences do not indicate higher or lower average trust forms across schools in the sample.

*Measures*

Faculty trust surveys came from the Omnibus Trust Scale (Hoy and Tschannen-Moran, 1999). FTP measures cooperative interactions between faculty and the principal with seven items that use a six-point Likert response set ranging from strongly disagree coded as 1 to strongly agree coded as 6. Questions ask faculty about the support, openness, dependability, competence, and honesty of the principal. Sample items include: “The teachers in this school have faith in the integrity of the principal,” and “The principal in this school typically acts in the best interest of teachers.” Field tests of the survey found strong internal structure validity with item loadings ranging

Variable	<i>n</i>	Mean	SD	Minimum	Maximum
School performance	83	895	296	293	1,460
F/RLunch rate	83	85	22	16	100
Enabling school structure	83	45	6	30	57
Faculty trust in colleagues	83	36	4	26	45
Faculty trust in principal	83	34	7	18	48
Faculty trust in students	83	20	3	12	28
Principal trust in teachers	83	43	8	23	54

**Table I.**  
Sample demographics



from 0.75 to 0.93, and strong reliability with  $\alpha$ 's ranging from 0.90 to 0.98. A Cronbach  $\alpha$  of 0.95 with data from this study supported the strong item consistency found in field tests.

FTC measures the quality of relationships among teachers. Seven items with a six-point Likert response set ranging from strongly disagree coded as 1 to strongly agree coded as 6 ask faculty about their colleagues' openness, commitment to students, honesty, competence in the classroom, cooperation with each other, and reliability. Higher faculty trust suggests that faculty perceive their colleagues as being open, honest, reliable, competent, and benevolent in their thoughts and actions. Sample items include: "Teachers in this school are open with each other," and "Even in difficult situations, teachers in this school can depend on each other." Field tests found good internal structure validity and reliability estimates ranging from 0.90 to 0.94 (Hoy and Tschannen-Moran, 1999). A Cronbach  $\alpha$  of 0.93 with data from this study supported the item consistency found in field tests.

FTS measures the quality of student-teacher relationship. Five items with a six-point Likert response set ask faculty about students' openness, competence, reliability, honesty, and benevolence. Higher faculty trust indicate faculty perceive students as responsible learners. Sample items include: "Students in this school care about each other," "Students in this school can be counted on to do their work," and "Teachers here believe students are competent learners." Results of field tests reveal good item reliability with  $\alpha$ 's ranging from 0.90 to 0.98 (Hoy and Tschannen-Moran, 1999). A Cronbach  $\alpha$  of 0.91 with data from this study confirmed the strong item reliability.

Principal trust in teachers came from Tschannen-Moran's (2004) Principal Trust Survey and was constructed based on the definition of trust used from faculty trust measures. Seven items with a six-point Likert response set ranging from strongly disagree coded as 1 to strongly agree coded as 6 ask principals to judge the trustworthy behaviors of the teaching faculty. Higher principal trust indicates that faculty are perceived to be open, dependable, cooperative, and competent. Sample items include: "Teachers in this school are candid with me," and "I have faith in the integrity of my teachers." Reliability estimates from the field study ranged from 0.68 to 0.87 (Tschannen-Moran, 2004). A Cronbach  $\alpha$  of 0.89 with data from this study revealed strong reliability.

School structure was measured with the enabling school structure (ESS) scale (Hoy and Sweetland, 2000, 2001). The scale accounts for how formalization (rules and regulations) and centralization (hierarchical control) are carried out in the school. The prototypical enabling design is one where authority helps rather than impedes collective action. Sample items include: "Administrative rules in this school are substitutes for professional judgment," and "In this school the authority of the principal is used to undermine teacher." Results of field tests show high item reliability with  $\alpha$ 's around 0.90 (Hoy and Sweetland, 2000, 2001). A reliability test with data from this study found an  $\alpha$  of 0.93.

School performance was measured with the academic performance index (API). API is a composite scale score based on student achievement, attendance, and percentage of students taking state curricular tests. Scores range from 0 to 1,500 with the 2010-2011 school year mean of 1,092.

#### *Analytical technique*

First, intra-class correlations (ICC-2) were calculated to justify the use of aggregate data. ICC-2 is derived from a random effects ANOVA and measures the reliability of group

means (Bliese, 2000). ICC-2 is different than the ICC-1 tested through unconditional random effects multi-level models. The latter technique estimates variance attributed to group differences while the former estimates the homogeneity of group member beliefs. Both techniques can be used to justify aggregation of data. Reliability values at or above 0.70 are desirable for ICC-2 (Cohen *et al.*, 2001). The formula for ICC-2 follows:

$$ICC-2 = \frac{MSB - MSW}{MSB}$$

Second, a partially latent structural regression model was specified and tested in AMOS 7.0 with ESS and school free/reduced lunch (F/RLunch) rate treated as exogenous variables measured without error. Collective trust and school performance were modeled as endogenous variables. Collective trust was treated as a latent condition observable through FTP, FTC, FTS, and PTF. Modeling collective trust as a latent construct allowed for measurement error to be accounted for in the analysis. Unit loading identification was used by constraining the path residuals to 1.0 (Schumaker and Lomax, 2004).

**Results**

ICC-2's confirm the school level nature of the constructs in this study (Table II). All estimates exceeded the 0.70 threshold set by Cohen *et al.* (2001) as indicative of reliable group means. Robust ICC-2's indicate strong agreement among faculty as to their perceptions of trust in principals, trust in students, trust in colleagues, and enabling school structure. Strong within-school agreement among faculty members justifies aggregating teacher perceptions to the school level. High ICC-2's do not validate the use of collective trust as a social indicator of instructional capacity but they do establish the interdependent trust forms as school properties.

Fit indices for the overall model indicated a good fit between theoretical and empirical models (Table III). A non-significant  $\chi^2$  ( $\chi^2 = 20.3, p = 32, df = 10$ ) suggests there was little difference between the specified hypothesized model and the sample variance covariance matrix derived from the data (Schumaker and Lomax, 2004). Fit indices that adjust for sample size confirm a good model fit as well. The root mean

**Table II.**  
Within group reliability  
of school-level variables

	ICC-2
Principal trust in teachers	1.0
Faculty trust in principal	0.96
Faculty trust in colleagues	0.94
Faculty trust in students	0.89
Enabling school structure	0.91

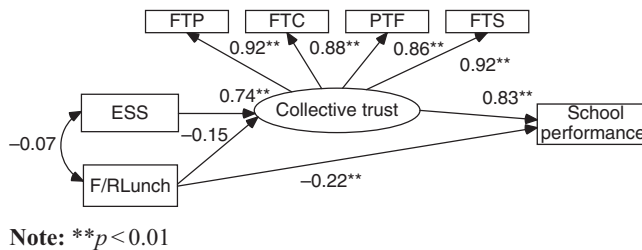
**Table III.**  
Model fit indices

Fit index	Criteria	Model fit estimates
$\chi^2$	Non-significant	20.3 ( $p = 0.32$ )
RMSEA	< 0.05	0.04
CFI	> 0.95	0.99
TLI	> 0.95	0.97

square error of approximation (RMSEA) was under the standard threshold of 0.05 (RMSEA = 0.04). The comparative fit index (CFI) and the Tucker-Lewis index (TLI) suggested near-perfect model fit (CFI = 0.99; TLI = 0.97). Strong fit indices mean the theoretical specification of the hypothesized model was observed in the pattern of the relationships among enabling school structure, instructional capacity, and school performance (Schumaker and Lomax, 2004).

Results of the structural equation analysis uphold criteria to establish the combined collective trust variable as a viable social indicator of instructional capacity. The first criterion was based on the predicted relationship between the observable forms of trust and the latent construct. Absence of an empirical connection, the theoretical claim that collective trust facilitates knowledge creation and learning does not hold. Results of the measurement model show strong, positive effects of the latent variable on each trust form (Figure 5 and Table IV). Specifically, 84 percent of the variance in FTP, 77 percent of the variance in FTC, 74 percent of the variance in PTF, and 84 percent of the variance in FTS were accounted for by collective trust. Unexplained variance in each trust factor was <30 percent. These findings imply that FTP, FTC, and PTF combine to create a culture of collective trust.

The second criterion was based on antecedents of collective trust. Theory and descriptive evidence advance professional structures and cultures as indicative of effective instructional systems. Results corroborate this evidence. Enabling school structure was predictive of collective trust ( $\beta = 0.74, p < 0.001$ ) after controlling for the effect of FRL rate. Enabling structures explained 55 percent of the collective trust variance ( $R^2 = 0.55$ ). To illustrate the enabling structure effect, it helps to compare a school with a strong professional culture against a school where structures hinder



**Figure 5.** Structural regression results

Paths	Estimate	R <sup>2</sup>
Collective trust → FTS	0.92**	0.85
Collective trust → FTC	0.88**	0.77
Collective trust → FTP	0.92**	0.85
Collective trust → PTF	0.86**	0.74
ESS → collective trust	0.74**	0.55
F/RLunch rate → collective trust	-0.15	0.02
Collective trust → school performance	0.83**	0.69
F/RLunch rate → school performance	-0.22**	0.05

Note: \*\*p < 0.01

**Table IV.** Standardized regression weights and explained variance

professional control. School professionals in an enabling environment are 68 percent more likely to perceive colleagues as trustworthy. This calculation is based on the 0.74 standard deviation difference in instructional capacity between a school that falls one standard deviation above the enabling structure mean and one standard deviation below.

The third criterion addressed the collective trust-performance relationship. Without evidence of a performance effect, the observable trust factors would have limited power to maximize achievement. Results showed that collective trust had a large direct effect on school performance ( $\beta = 0.83, p < 0.001$ ), accounting for 69 percent of the variability in school performance (Figure 5 and Table IV). The unique collective trust effect was larger than the FRL rate. Additionally, the total standardized effect of collective trust on school performance was greater than the other predictor variables in the model (Table V).

In sum, structural equation results illustrate the utility of using the combined forms of collective trust as a social indicator of instructional capacity. Criteria set to test the validity of the collective trust measures were achieved. A culture of collective trust explained significant variance in each trust form; enabling structures had a large effect on a culture of collective trust; and a culture of collective trust had a large effect on school performance. These findings and their implication for research and practice are discussed next.

### Discussion

Descriptive accounts of capacity building initiatives have raised awareness about the importance of designing and managing school systems to promote knowledge creation and learning among school professionals (Crowther, 2011; Fullan, 2010; Harris, 2011; Hargreaves, 2011; King and Bouchard, 2011). Internationally, school systems investing in the human and social enterprise of teaching are seeing positive system-wide improvements. Fullan (2010) credits within-school and across-school relational ties as leading to greater professional capacity and increased achievement in the York school district in Toronto. Crowther (2011) documents the success of a capacity building reform in Australia where a shared inquiry model has deepened the pedagogical knowledge and skill of teachers. The McKinsey Report on system-wide educational advancements describes the success of school systems in Shanghai, China, and Japan in developing teaching talent through vicarious experiences, shared observations of instructional practices, and ongoing professional inquiry into teaching (Barber and Mourshed, 2009). Descriptive evidence from international studies has established capacity building as an important research agenda and reform tool.

Extending capacity research beyond descriptive studies depends on having valid instruments that measure resources, processes, and conditions underlining knowledge development and learning. Good measures of instructional capacity have practical importance as well. Improvement efforts aimed at building capacity in schools and school systems benefit from indicators that report the degree to which reform

	School performance
Collective trust	0.83
F/RLunch	-0.34
ESS	0.61

**Table V.**  
Total standardized effects  
on school performance

stimulates and sustains a learning organization. This study was a first step toward operationalizing properties of instructional capacity. Although limited by the sample of 83 schools in an urban district in the southwestern part of the USA, the findings provide initial support for using collective trust as a social indicator of instructional capacity. To understand why and how a culture of collective trust sustains an effective teaching context, it is necessary to revisit the conceptualization of instructional capacity.

Recall that instructional capacity was defined as the degree to which resources and processes enable school professionals to convert information into knowledge and knowledge into changes that respond to learning needs of students (Crowther, 2011; Hargreaves, 2001, 2011). Collective trust does not actually measure the level of knowledge generated by school professionals. Instead, forms of trust act like gauges that signal the capability of instructional systems to generate knowledge and to deliver high-quality learning. High trust signals an open, cooperative, collaborative, and cohesive instructional core (Forsyth *et al.*, 2011; Bryk and Schneider, 2002; Tschannen-Moran, 2004, 2009). These conditions promote the social construction of knowledge (Nonaka, 1994) and enhance teaching effectiveness (Bryk *et al.*, 2010). Trust levels signal problems when tension in relational networks constricts cooperative interactions and social exchanges. In this case, low trust calls attention to an instructional system functioning below capacity and points to a specific role set (e.g. teacher-principal) where actions and interactions may not support knowledge creation.

Low trust of any form (e.g. FTC or FTP) has harmful consequences for instructional capacity. Schools function effectively when trust lubricates interactions between teachers and administrators, among faculty, and between teachers and students. Information exchange, knowledge creation, and adaptive practice lessen if a school group is uncertain about another individual or group's intention. For instance, teachers may trust the principal and believe in the school improvement plan, but acrimony among teaching colleagues can affect the implementation of improvement strategies in and across classrooms. High principal trust and low colleague trust signals an unbalanced instructional system. To effectively execute reforms, teachers need to interrogate teaching practices and student performance as a group, a difficult endeavor if teachers cannot trust each other (McLaughlin and Talbert, 2006). In the face of relational problems that constrict open, collaborative, and cooperative work processes, more formal control may be applied by the principal. The danger is that excessive and continuous formal control could restrict knowledge creation in the long run and slowly erode principal trust (Forsyth *et al.*, 2011).

The previous example illustrates the importance of a culture of collective trust for effective instructional systems; it also highlights residual effects of low trust that extend beyond the immediate role set (e.g. teacher-principal). The social nature of teaching makes it difficult to confine relational problems to one school group. Just as collective trust tends to diffuse throughout social systems, distrust also spreads in ways that negatively affect the behavior and performance of other individuals and groups (Forsyth *et al.*, 2011). The interdependence of trust has empirical support. Early trust studies by Hoy and colleagues (Hoy and Koppersmith, 1985; Hoffman *et al.*, 1994; Tarter *et al.*, 1989, 1995) discovered strong correlations among FTC and FTP in four different samples of public schools in the USA. More recently, Tschannen-Moran (2009) found strong correlations among FTC, FTP, and faculty trust in clients in a sample of 80 middle schools in the Mid-Atlantic area of the USA.

In short, numerous factors affect how instructional systems operate, but a culture of collective trust is an essential social resource that enables school professionals to maintain an effective and efficient operational core (Bryk and Schneider, 2002; Tschannen-Moran, 2004). Each form of collective trust specified in this study contributes uniquely and collectively to teaching and learning. Low trust within one role set (e.g. teacher-principal) affects the entire relational network and jeopardizes attainment of individual and school-wide goals. Capacity is highest when the forms of trust combine to regulate actions and interactions of school professionals, students, and parents. It is the joint effect of trust that makes the largest contribution to effective practice (Forsyth *et al.*, 2011).

### **Implications and conclusion**

Although results may seem to have more appeal to researchers interested in expanding the study of instructional capacity, there are two primary implications for administrators who lead schools and school systems. These implications challenge the logic behind many strategies being employed in the USA and abroad to strengthen teaching effectiveness and to measure school performance. The first focusses on the use of high leverage resources to maximize teaching. The second is based on meaningful performance information.

#### *High leverage resources*

Nearly everyone agrees that an educated population is a social and economic imperative. Contention often erupts because of different views on how to improve achievement and close achievement gaps. Many prevailing beliefs in the USA favor carrot and stick strategies like increasing inputs into schools, raising accountability standards, adopting performance pay plans, and using value-added evaluation models. Such improvement strategies partly assume achievement problems stem from unmotivated or incapable educators in need of external reinforcement. Less attention has been directed to what Hargreaves (2001) refers to as high leverage resources. He defines high leverage resources as strategies that maximize and sustain positive outcomes overtime by enabling school professionals to work smarter, not harder. Working smarter depends on developing an instructional system that is capable of generating and transmitting knowledge from practice (Fullan, 2010).

As supported in this study and other studies on the performance effects of trust (Bryk and Schneider, 2002; Forsyth *et al.*, 2011; Tschannen-Moran, 2004), a culture of collective trust is a high leverage resource for sustainable school reform. High trust promotes information sharing, knowledge creation, and learning among school professionals, the requisite properties of an effective and efficient instructional program (Hargreaves, 2001). If reforms neglect the relational context, we are not likely to see any meaningful and sustainable achievement effects. With this in mind, setting collective trust as an improvement target makes sense. Trust leads to increased school performance, it can close achievement gaps, it is an essential resource for social interactions, and it is a durable commodity that can sustain effective teaching and quality learning (Forsyth *et al.*, 2011). Further, developing a culture of trust is not an expensive proposition. Additional inputs into schools, new interventions, or increased programs are not needed. Instead, trust building entails redesigning schools and school systems so that relational networks are used to promote the study of teaching and learning, to encourage the social construction of a shared theory of action, and to support the psychological needs of professionals who work in schools and

students who learn in them. To develop trust, schools need to invest in the human and social enterprise of schools, not the addition of new programs to an already congested teaching context.

### *Meaningful performance information*

Strategies and policies that target capacity as a means to school improvement are as susceptible to implementation problems as other reforms. Reforms and improvement efforts seldom unfold as designed and rarely disrupt past cultures (Berman and McLaughlin, 1978; Christensen *et al.*, 2008; Coburn, 2003; Hess, 1999). Formal evidence on collective trust in schools has the potential to improve how administrators at site and strategic levels manage instructional systems. Information about collective trust allows site leaders to assess the degree to which strategies and processes support knowledge development and adaptive practice of teachers. For administrators at strategic levels, collective trust evidence can inform decisions about mobilizing and deploying resources targeted at the social sources of performance problems.

Evidence-based practice in education has for the most part been devoid of measures that validly report on instructional processes. This is not the case in the private sector. Many private sector organizations have adapted to information-driven work processes with comprehensive and integrated measurement plans, while school accountability systems remain simplistic and incongruent with the complex and interdependent nature of teaching and learning (Forsyth *et al.*, 2011). Achievement data are of little use without understanding how elements of the school social system affect performance. School effectiveness can be maximized if decision makers know what is happening inside the operating core of schools (Behn, 2003), and measuring conditions of instructional capacity can provide a critical glimpse into their inner workings.

Evidence on collective trust reduces uncertainty about the capability of school professionals to act in ways that enhance teaching. Such information is critical when one considers that knowledge development of teachers is largely influenced by informal ties with other teachers more so than direct interactions with principals. Teaching colleagues are the primary source of teaching information and knowledge in many schools (Spillane *et al.*, 2010). Principals tend to manage knowledge development through leadership positions like instructional coaches (Atteberry and Bryk, 2010) or by connecting teachers with colleagues considered to be effective at promoting student learning (Spillane *et al.*, 2010). Leaders can take more purposeful and precise action to increase performance when they understand how formal structures and strategies affect faculty interactions and knowledge creation.

### *Conclusion*

In conclusion, the trust effect advanced in this study relates to its influence on knowledge creation and adaptive practice among school professionals. Findings establish baseline evidence that principal trust in teachers, FTP, FTC, and FTS can combine to form a social indicator of instructional capacity. Collective trust does not measure directly the production and spread of knowledge among teachers; rather, it gauges the capability of the instructional system to promote professional growth and to deliver quality learning.

It would be a stretch to claim findings from this study are generalizable to all schools or even to all urban schools in the USA. They are not. That stated, results do provide initial support for a theoretical explanation about the influence of collective trust on knowledge creation and adaptive practices. Schools in this sample

may look and act differently than other schools, but no matter the school composition, teaching and learning is a social and human enterprise shaped by relationships, interactions, and information exchange, processes that are not effective without trust (Hargreaves, 2001).

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