Dimitri Van Maele · Patrick B. Forsyth
Mieke Van Houtte *Editors*

Trust and School Life

The Role of Trust for Learning, Teaching, Leading, and Bridging

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Chapter 1
Introduction: Trust as a Matter of Equity and Excellence in Education

Dimitri Van Maele, Mieke Van Houtte and Patrick B. Forsyth

1.1 A Solid Item on the Educational Research Agenda

According to the classical sociologist Emile Durkheim (1997/1893), trust between individuals and groups lays the foundation for social order in society. It is the breeding ground for solidarity and integration. Trust is an essential condition for stable social relationships (Blau 1986/1964) and vital for the maintenance of co-operation in society (Parsons 1951). Several social scientists have paid attention to the role of trust at the societal level (*e.g.*, Coleman 1990; Fukuyama 1995; Putnam 2007; Zucker 1986), all viewing trust as a particular quality of a social system. Although trust is recognized as fundamental to functioning in our complex society, it remains something rather intangible. As Baier (1986, p. 234) noticed: "*We inhabit a climate of trust as we inhabit an atmosphere and notice it as we notice air, only when it becomes scarce or polluted.*"

This duality surrounding the concept of trust—its centrality in social systems versus its intangibility—is likely to be one of the reasons why organizational scholars have devoted extensive attention to the role trust plays in the way that organizations function. Trust among organizational members has been linked to the effective functioning of organizations (*e.g.*, Dirks and Ferrin 2001; Leana and Van Buren 1999; McEvily et al. 2003) because of their need to realize collective goals. This entails interdependence among them, and in these situations trust may reduce

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uncertainty (Luhmann 1979) and enhance cooperation (Gambetta 1988). Accordingly, trust among the members of an organization positively affects their attitudes, behaviors, and performance (*e.g.*, Brower et al. 2009; Chou et al. 2008; Costa 2003; Cunningham and MacGregor 2000; Zand 1972).

The organizational trust literature has been most informative for the research on trust relations in the *school* organization. Yet, because trust needs to be considered as a context-specific phenomenon (Rousseau et al. 1998; Schoorman et al. 2007), findings from research conducted in non-educational organizations cannot be simply extended to school organizations. Schools are characterized as anomalous organizations given that they are client-serving organizations in which the bond between professionals and clients is to a large extent involuntary (Bidwell 1970) and because they seem to require a balance between some formal structuration and very little control over the employees and work processes (Ingersoll 2005). Moreover, schools are complex task contexts because task complexity goes hand in hand with interdependence among the primary role groups involved in schooling, namely, students, parents, teachers and school administrators (Forsyth et al. 2011), with respect to which, the position of parents as internal or external to the school is an arguable point. Task complexity derives from the fact that the production input, processes, and output which take place in the organizational environment of the school cannot be standardized. Students enter with varying degrees of motivation and backgrounds, and no real standardized instructional processes exist in order to produce a standardized product (i.e. equally educated students). The complexity of the task environment results in a strong interdependence among the different groups of school members. For example, teachers depend on principals to provide the necessary resources for instruction and principals depend on their teachers to instruct in such a way that the students meet the learning expectations. Teachers' work is also dependent on the willingness of students to cooperate in the learning processes that take place in the classroom, while parents depend on teachers to motivate and educate their children, just as teachers depend on parents' involvement in the education of their children. The necessity of trust for the school organization is revealed then in the complexity of its primary task (i.e. educating a diverse range of students) and in the interdependence of groups whose efforts are indispensable to succeed in that task (Forsyth et al. 2011).

In the United States of America, two research clusters can be distinguished which have—in following the argument that trust supports organizational function—embraced the task of empirically and systematically demonstrating the crucial role of trust for schools and its members. A first cluster has Wayne K. Hoy as its central figure. His research was situated at Rutgers University and later on at the Ohio State University. Hoy and Kupersmith's (1984, 1985) papers on a faculty's collective trust formed the base for a large number of subsequent empirical studies on trust in school (see Forsyth 2008). A second cluster was established at the University of Chicago with the work of Anthony S. Bryk and Barbara Schneider. In *Trust in Schools: A Core Resource for Improvement* (Bryk and Schneider 2002), the essential role of trust in building a professional school community and in improving student achievement was identified using a longitudinal research framework.

The work deriving from both research clusters has inspired scholars worldwide to proceed the exploration of trust as a phenomenon affecting school life. As a former

graduate student of Wayne K. Hoy, Patrick B. Forsyth extended the research on trust in schools at Oklahoma State University and currently at the University of Oklahoma, where he collaborates with his colleague Curt M. Adams. Departing from the empirical work of Hoy and colleagues, Forsyth and Adams not only focus on teacher trust—which is the case in the aforementioned founding research clusters—but also on parent and student trust. They assessed that collective trust in school positively relates to a broad range of educational outcomes (see Forsyth et al. 2006, 2011). At the University of California San Diego, Alan J. Daly recently began a collaboration with Nienke M. Moolenaar who formerly conducted trust-related educational research at the University of Twente in the Netherlands. Together with their colleagues, both shed light on how trust relates to social networks in school, teacher outcomes, and school leadership (*e.g.*, Daly 2009; Moolenaar and Sleegers 2010). In Belgium, Mieke Van Houtte has developed a research line at Ghent University dealing with the topic of teacher trust. From a school effects tradition, she and her former graduate student Dimitri Van Maele explored antecedents and consequences for teachers and students of teachers' trust in other school members (*e.g.*, Van Houtte 2007; Van Houtte and Van Maele 2012; Van Maele and Van Houtte 2012). It is clear that the topic of trust in school has increasingly received attention within the educational research community since the beginning of the 21st century. Currently, research dealing with the topic has spread across the USA (*e.g.*, Cosner 2009; Goddard et al. 2009; Leana and Pil 2006; Louis 2007; Tschannen-Moran 2009) and across the rest of the world with studies conducted in Australia (Timms et al. 2006), South Korea (Lee 2007), Turkey (Dönmez et al. 2010), China (Lee et al. 2011), the Netherlands (Thoonen et al. 2011), Sweden (Wermke 2012), Israel (Addi-Raccah 2012), and Uganda (Hallam et al. 2012).

This volume brings together the work of diverse scholars having roots in the above-described research clusters. Uniquely, this volume collects studies that emerge from those research institutions that have systematically investigated school trust during the last decade. Perhaps more interestingly, the volume introduces original work from scholars who have found inspiration in those trust studies and approaches that have dominated the field from the beginning. As such the volume provides a comprehensive and original overview of the different conceptual and empirical lines of inquiry that have shaped the research field into its current state.

Three broad lines of inquiry can be discerned across the educational trust literature. The first involves the exploration of the *conceptual foundations of trust* in educational settings. What does it mean to trust another party at school? Which relational characteristics describe the presence of trusting relationships in school? Who can be regarded as a trusting party, the trustor, and who as a trusted party, the trustee? Most educational trust studies have focused on teachers trusting other school members, whereas less attention has been paid to students, parents, or principals in a trusting role. This might be explained by the fact that teachers are the primary actors in the school context. They execute the primary task of the school (i.e. educating youngsters) and they are, or are supposed to be, strongly involved in the implementation of any new policy measure or reform initiative (Kelchtermans 2007; van Veen et al. 2001). The ample attention of educational scholars to teachers in their role as trustor is also reflected in the several chapters included in this

volume which address different issues related to the level of trust teachers have in other parties in their school environment.

Although it is indispensable to provide a conceptual approach of trust in school, of greater significance is the explanation of which factors might influence the development of trust in school. After all, if school leaders and policy makers intend to take actions to enhance trust relations in school they should not only understand what trust is about but particularly get a grip on those factors which may hinder or foster a trusting school environment. The second line of inquiry that can be distinguished across the literature is accordingly the investigation of *antecedents of trust* in educational settings. This literature is particularly informative for the knowledge of how to develop actions and programs which are able to build trust in schools (see Bryk and Schneider 2002; Cosner 2009; Forsyth et al. 2011; Kochanek 2005; Tschannen-Moran 2004).

Research exploring the *consequences of trust* for schools and its members makes up a third line of inquiry. As will become clear throughout this volume, it can generally be stated that trust supports the work of teachers and schools' effectiveness, improvement, and reform (*e.g.*, Bryk and Schneider 2002; Cosner 2009; Daly 2009; Forsyth et al. 2011; Kochanek 2005; Louis 2007; Tschannen-Moran 2009; Van Maele and Van Houtte 2012).

In bringing together the work of leading and rising school trust scholars, the general purpose of this volume is to offer an original "state of the art" update on trust research in education by sampling the current diversity in conceptual approach, measurement, and explored determinants and outcomes of trust. In what follows, the present chapter sketches how the educational trust literature has generally conceived trust in school. It further discusses a framework to analyze individual and school level antecedents of teachers' trust, and argues that the nature of school culture might explain associations between structural and compositional school characteristics and teachers' trust. Findings concerning the composition-teachers' trust association indicate the crucial role that trust might play in fostering equity in education. We proceed with a section on the consequences of trust for the quality of school life. We will argue that trust supports excellence in education because it nurtures four interrelated key areas of school life, namely, learning, teaching, leading, and bridging. The chapter ends with an introduction to the following chapters that constitute this volume.

1.2 A Conceptual Approach of Trust in School

1.2.1 Conceptual Foundations of Trust

Because trust has extensively been studied across several social science disciplines, a variety of trust definitions have been raised, making it less clear what the exact meaning of trust is. Early studies on trust described the concept in behavioral terms (Deutsch 1958; Zand 1972). Trust was inferred from people's behaviors, such as

displaying cooperative behaviors in the risk that another party could exploit these behaviors. Later on, trust was defined as an attitude or judgment. It was conceived as a generalized personal trait indicating an expectancy that the word, promise, verbal or written statement of another individual or group can be relied upon (Rotter 1967, p. 651). More contemporary definitions highlight the complexity and multidimensionality of trust. Mishra (1996, p. 265) defined trust as one party's willingness to be vulnerable to another party based on the belief that the latter party is (a) competent, (b) open, (c) concerned, and (d) reliable, whereas Mayer et al. (1995) defined trust as the willingness of a party to be vulnerable to the actions of another party based on the expectation that the other will perform a particular action important to the trustor, irrespective of the ability to monitor or control that party. According to Mayer et al., a party will be willing to risk engagement in a trusting relationship with another party if the latter is characterized by ability, benevolence, and integrity.

Although a diversity of trust conceptualizations exists, there is a certain level of agreement among most scholars about some general attributes of trust. *Vulnerability* is one such common aspect of trust (Coleman 1990; Rousseau et al. 1998; Schoorman et al. 2007; Tschannen-Moran and Hoy 2000). People who trust another party make themselves vulnerable to that party in the belief that the latter will act in ways that are not harmful to them. Furthermore, individuals who trust have a *positive expectation* in the actions of whom is trusted (Rousseau et al. 1998). *Risk* is another common feature among most trust definitions (Coleman 1990; Rotter 1967; Rousseau et al. 1998). Risk may be described as the perceived probability of loss (Chiles and McMackin 1996). It creates an opportunity to trust, which itself leads to risk taking. Uncertainty regarding whether another party intends to and will act appropriately is the source of risk (Rousseau et al. 1998). Finally, *interdependence* is a necessary condition within trust relations because the interests of one party cannot be achieved without reliance upon another (Rousseau et al. 1998). Without interdependence, there is no need for trust. In sum, trust is seen as a condition in which people or groups find themselves vulnerable to others under conditions of risk and interdependence (Forsyth et al. 2011, p. 18).

Further agreement exists across the literature about the need to distinguish between different referents of trust (*e.g.*, colleagues, supervisors), about key elements of trust, and about the multiplicity of analytical levels to study trust (*e.g.*, individual, group, and organization) (see Forsyth et al. 2011; Rousseau et al. 1998; Tschannen-Moran and Hoy 2000). These aspects will be discussed next and applied to the nature of trust in the context of the school organization.

1.2.2 Role Relationships and Key Elements

Bryk and Schneider's (2002) *relational trust perspective* views trust as anchored in the social exchanges within schools around distinct sets of role relationships (Blau 1986; Merton 1957). Based on the different role groups that occur in the school organization, different referent groups of one party's trust can be distinguished of which students, parents, teachers, and school leaders are the most

common (Adams 2008). From a perspective of social identification in organizations (Ashforth and Mael 1986), trust in the own role group may be regarded as in-group trust (*e.g.*, teacher trust in colleagues), whereas trust in members of another role group may be viewed as out-group trust (*e.g.*, teacher trust in students). All parties in a school relationship have an idea about the obligations associated with their role and equally hold some expectations about the obligations of the other parties. For trust to develop, synchrony in each role relationship regarding the understanding held about the personal obligations and expectations of others is implied. Respect, competence, integrity, and personal regard for others are considered as four lenses through which actors analyze the behaviors of others in school. A deficiency on any of these criteria might undermine the discernment of trust for the role relationship (Bryk and Schneider 2002).

In essence, trust can be regarded as the degree to which a trustor (a trusting party) perceives a trustee (the trust referent) as trustworthy (Bryk and Schneider 2002; Forsyth et al. 2011; Tschannen-Moran and Hoy 2000). Given its relational nature, trust in schools is a reciprocal phenomenon because trust of one party in another creates a built-in incentive for the latter to reciprocate trust with trustworthiness (Coleman 1990). It is essential, however, to discover the sources of a party's trustworthiness—those aspects of the trustee's behaviors and attitudes that make the trustor judge the trustee's trustworthiness. The research of Hoy and colleagues has proven its significance in developing four unitary empirical measures of teachers' trust in students, parents, colleagues, and the school principal (Hoy and Tschannen-Moran 1999, 2003). These measures have been derived from an extensive review of the organizational trust literature and conceive five sources of teachers' trustworthiness perceptions: benevolence, reliability, competence, honesty, and openness (Tschannen-Moran and Hoy 2000). *Benevolence* refers to the confidence that one's well-being or something one cares about will be protected by the other party. *Reliability* indicates the extent to which one can count on another party to come through with what is needed. *Competence* is another facet of trust, as having good intentions alone is not enough to fulfill an expectation. This trust facet refers to the ability of another party to perform as expected according to the standards connected to a task at hand. *Honesty* alludes to another party's character, integrity, and authenticity. One has to be able to rely on the words and actions of another to ensure trusting that other. Finally, *openness*, refers to the extent that relevant information is not withheld by another party. One becomes vulnerable to another party by sharing information with others. These sources of trustworthiness perceptions are called '*the five facets of trust*' (Hoy and Tschannen-Moran 1999, pp. 187–188). It has recently been advanced that these facets equally inform student and parent perceptions of other school members' trustworthiness (Forsyth et al. 2011).

Trust is thus a state in which a school member is willing to make him or herself vulnerable to others and take risks with confidence that others will respond to the own actions in positive ways, that is, with benevolence, reliability, competence, honesty, and openness (see Forsyth et al. 2011, pp. 19–20). School members evaluate others' attitudes and behaviors by comparing observed with expected attitudes and behaviors. These comparisons are conceived as evidence of the other party's

trustworthiness. Although the criteria for trustworthiness discernments differ nominally between the trust measure of Bryk and Schneider (2002) on the one hand and that of Hoy and Tschannen-Moran (1999, 2003) on the other hand, both compare their trust criteria with the trust measure developed by Mishra (1996)–indicating a certain level of comparability between both. Though several empirical trust studies have embraced these five trust facets to form a unified construct (*e.g.*, Forsyth et al. 2011; Moolenaar and Sleegers 2010), Daly and Chrispeels (2008) demonstrated that specific trust facets associate differently with the nature of educational leadership. This suggests that further exploration of the associations between distinct facets of trust and different educational outcomes might be productive. Daly (2009) showed, however, that these specific trust facets all load together on one single trust factor—underscoring the validity of the unitary trust construct developed by Hoy and Tschannen-Moran (1999, 2003). In light of how most educational trust literature has approached trust, it can generally be concluded that ensuring that school members share role expectations and obligations for one another and expose behaviors and attitudes that demonstrate benevolence, reliability, competence, honesty, and openness is a promising road to strengthen the trust relationships in school—something which is also reflected in most trust approaches that are presented throughout the various chapters of this volume.

1.2.3 Trust at Different Analytical Levels of the School Organization

There is a consensus that trust needs to be examined at different analytical levels within an organization (see McEvily et al. 2003; Rousseau et al. 1998; Schoorman et al. 2007). Social-psychological studies see trust mainly as an interpersonal phenomenon and conceive it as a psychological state at the individual level (Shamir and Lapidot 2003). Such conceptions of trust are usually framed at *the micro level of the individual* and they emphasize the cognitive and affective processes that make individuals to trust other individuals or groups (see Kramer 1999; Rotter 1967). The level of trust that a single teacher has in the student population at school would be an example of trust at the micro level of the school organization. Divergence among individuals' trust levels in the same trustee occurs because people differ in their general disposition or propensity to trust other people due to a difference in personal characteristics and past experiences (Kramer 1999; Mayer et al. 1995).

The sociological literature emphasizes the systemic level in viewing trust as a quality of a social system (see Parsons 1951; Fukuyama 1995; Zucker 1986), such as the school organization. *Systemic trust* refers to trust in systems or institutions rather than in specific individuals or groups (Shamir and Lapidot 2003). It focuses on trust at the macro-level. The level of parents' trust in the school as an organization is an example here. Also in this volume, trust in educational institutions is investigated.

The organizational and sociological perspectives indicate a third analytical level that is significant in examining trust within organizations, namely the meso-level of

the group (Rousseau et al. 1998; Schoorman et al. 2007; Shamir and Lapidot 2003). Within most organizations, individuals are embedded in groups, such as different work teams. When analyzing *trust at the group level*, whether this is the level of trust a group displays in a particular individual or in another role group, we speak of collective trust (Forsyth et al. 2011). Within organizations, trust is likely to be a collective group phenomenon due to social information processes (Salancik and Pfeffer 1978; Shamir and Lapidot 2003). These operate by structuring a person's attention processes, resulting in particular aspects of the organizational environment to become more or less salient. Besides, social influence occurs because the direct or indirect communication of other group members often provides constructed meanings, which include evaluations of objects or events. Group members therefore affect each other's attitudes and beliefs which may become shared at a certain point (Shamir and Lapidot 2003; Van Houtte 2002). Hence, group members may develop shared interpretations of their environment, such as interpretations about another party's trustworthiness.

Collective trust is accordingly a social construction which emerges out of repeated exchanges among group members. Through verbal and nonverbal interactions, role group members in school not only share individual expectations for the behaviors of other individuals or members of another role group, they also share their opinions about how the observed behaviors of the members of that group align with their expected behaviors. This process will eventually result in a consensus among the role group members about another school party's trustworthiness (Forsyth et al. 2011; Van Maele and Van Houtte 2009). Collective trust among the members of a school's role group is a social phenomenon that exceeds the aggregation of trustworthiness perceptions of individual group members (Forsyth et al. 2011; Van Houtte and Van Maele 2011).

A number of studies on trust in school have investigated collective teacher trust in one or more referent groups of school members (*e.g.*, Goddard et al. 2001; Forsyth et al. 2006; Tschannen-Moran 2009; Smith et al. 2001; Van Maele and Van Houtte, 2009). Recently, studies on students' and parents' collective level of trust in the principal and faculty have appeared as well (see Adams 2010; Forsyth et al. 2011). Fewer studies, however, have focused on individuals' trust within educational settings (*e.g.*, Adams and Christenson 2000; Daly 2009; Imber 1973; Moolenaar and Sleegers 2010; Van Houtte 2007; Van Maele and Van Houtte 2011), or have simultaneously explored individual and collective trust in schools (*e.g.*, Van Houtte 2006; Van Maele and Van Houtte 2012). A simultaneous investigation of trust from various types of trustors (*i.e.* students, parents, teachers, school administrators) at both the individual and group level remains a pathway for future research to explore.

1.3 Trust Antecedents: A Focus on Teachers

Raising the knowledge of which factors enhance trust in school is prerequisite for developing school policies that intend to build trust. A central idea that can be derived from the educational trust literature is that the antecedents of trust within educational settings need to be explored at distinct levels of analysis such as the level

of the individual, the work group, the school and the educational system. Because trust relations in school denote the quality of the relationships between particular trustors and trustees, characteristics of both parties are supposed to affect its nature (see Kramer 1999; Mayer et al. 1995; Rousseau et al. 1998). For example, in exploring interpersonal trust, individual characteristics of both parties will play a role in the development of a trust relationships. In this case trust formation will be affected by *individual features* of both the trustor and trustee. An individual or group can also trust another group in school. In investigating a faculty's trust in the students, characteristics of both groups will affect their mutual trust. It is important to notice that characteristics of primary role groups involved in schooling (i.e. the students, the parents, the teachers, school administrators) such as the social class background of the student population, are regarded as school-level features (see Coleman et al. 1966; Lee et al. 1991; Talbert et al. 1993). Therefore, aggregate features of the student population, the parent group or the faculty are perceived as trust antecedents at *the school level*. Yet, another situation occurs when the trusting or trusted party is not composed by all the members of a primary role group. When, for example, considering the trust of a particular teacher team in the principal (*e.g.*, the math teachers of a specific grade), the trusting party is a specific group but its features cannot be regarded as school-level characteristics. Such features should be approached as collective characteristics at *the group level*. Furthermore, characteristics of educational systems affect school life and its members. Reforms or policy measures initiated by central administrations influence the work and attitudes of school members in their particular school (Kelchtermans 2007; Sahlberg 2007). Accordingly, *features of educational systems* may affect trust within educational settings as well as is indicated by several chapters in this volume, which discuss and investigate trust within educational settings in times of reform and accountability.

Which antecedents at which levels are at play depends on the trust relationship that is investigated. It depends on who is the trusting and trusted party under scrutiny and in which educational context the trust relationship is taking place. Discussing all the possible antecedents of all the different trust relationships that are possible to conceptualize in educational settings is out of the scope of the present chapter, however. Rather, we have chosen to present a framework from which to study individual and school-level antecedents of individual and collective teacher trust in other school members. This choice is informed by the fact that teacher trust in other school members has been explored most extensively across the educational trust literature. At the same time, it reflects the fact that further empirical research is desirable in order to increase our knowledge regarding the antecedents of the level of trust that students, parents, and school administrators have in significant others who are involved in schooling.

1.3.1 Teacher Characteristics and Teacher Trust

A relatively small number of studies have examined an influence of individual teacher characteristics on teachers' trustworthiness perceptions of other school

members (*e.g.*, Adams and Christenson 2000; Bryk and Schneider 2002; Timms et al. 2006; Van Houtte 2007; Van Maele and Van Houtte 2011). Findings from these studies shed light on which kind of teacher characteristics antecede individual teachers' trust in other school members. In general, the literature suggests that both *demographic and role-related teacher characteristics* should be explored as antecedents of teacher trust.

With respect to *gender*, Maddux and Brewer (2005) found that trust for men was largely dependent on sharing group memberships, whereas for women it was based on sharing direct and indirect relationships. Because teachers, students, parents, and school principals belong to different role groups in school, it could be argued that male teachers might display higher in-group trust (i.e. trust in colleagues), whereas female teachers will have more out-group trust. The findings regarding the influence of gender on teacher trust are mixed, however. Females were found to have more trust in colleagues (Moolenaar and Sleegers 2010; Van Maele and Van Houtte 2011) but less trust in the school principal (Bryk and Schneider 2002), school administration (Timms at al. 2006), and students (Van Houtte 2007).

Social similarities between two parties may be grounds for trust relations to develop (Zucker 1986). Accordingly, a shared *ethnic identity* serves as a basis for trusting relationships (Kramer et al. 1996; Zucker 1986). It could therefore be expected that when teachers share their ethnic background with a particular person or group in school their trust in the latter could be enhanced. It has been shown that teachers rate their relationships with students as more positive when both match in ethnic background (Alexander et al. 1987; Saft and Pianta 2001). Furthermore, the teaching position is often regarded as a semi-profession—particularly due to a perceived lack of an academic knowledge and expertise base (Ingersoll and Merrill 2011; Johnson 2005). Teachers whose parents ranked high on the occupational prestige ladder might experience a feeling of downward social mobility. This feeling could get reflected in less trust in the people with whom they interact in their work environment. No significant association between *socioeconomic status (SES) background* and teacher trust has yet been established however (Van Houtte 2007; Van Maele and Van Houtte 2011), reflecting that working with other humans is an intrinsic motivational factor for most teachers (Lortie 2002/1975; Nias 1981).

Relational trust develops out of repeated interactions over time. During those interactions, information becomes available to the trusting party which forms the basis for the development of trust (Rousseau et al. 1998). As relational experiences in a particular context increase, the *pool of trust-relevant information* one has at her or his disposal to rely on in judging others' trustworthiness accumulates. Experienced teachers have experienced many more interactions with members from all role groups in school as compared to less experienced teachers. The accumulated experiences might affect teachers' ideas about the preferred nature of interactions with other school members. *Accumulated experiences* and more trust-relevant information might consequently lead to different judgments of other school members' trustworthiness (*e.g.*, Bryk and Schneider 2002; Van Houtte 2007). The trust relevant information available to teachers could also relate to the amount of time they are present in school. Teachers who teach several hours a week will demonstrate more contacts with other school members than teachers who only teach a couple.

Having a high number of *teaching hours* is likely to be associated with higher levels of trust-relevant information in which to ground trustworthiness judgments about other school members.

The *classroom organization* might play a role as well. The way that classroom activities are structured influences the nature of the teacher-student interactions (see Bossert 1979). In classes in which practical courses are instructed, such as physical education or woodwork, students often have their own space in class to exercise on practical matters on an individual or small group scale. This kind of classroom setting creates more opportunities for teachers and students to develop personal relationships with one another as compared to a recitation setting in which the teacher keeps distance from the students by lecturing in front of the class (Bossert 1979). The nature of the classroom setting, which is closely related to the subject taught, could therefore influence teachers' perceptions of students' trustworthiness.

1.3.2 School Context and Teachers' Trust

Relational processes in school are not detached from the institutional school context. When teachers end up in a specific educational school environment, characteristics of the school organization affect their behaviors, standards, attitudes, beliefs, perceptions, and expectations (Lee et al. 1991; Newmann et al. 1989; Talbert et al. 1993). The educational literature has concordantly demonstrated that both individual and collective teacher trust in other school members are affected by *compositional and structural characteristics of the school context*. With respect to structural school characteristics, *school size* might influence teachers' trust given that human interactions that sustain a sense of community become more complex and difficult due to processes of bureaucratization that occur when organizations increase in size (Talacchi 1960; Weber 1968/1947). Not surprisingly, it has been shown that the larger the school's enrollment, the lower teachers' trust in the students and parents is (Goddard et al. 2001, 2009; Smith et al. 2001), and that relational trust among teachers is more fragile in large schools (Bryk and Schneider 2002). Furthermore, the *nature of tracks offered in school* also affects teachers' trust in students. Trust in students is higher in schools that mainly offer academic tracks preparing for higher education as compared to schools that mainly offer technical/vocational tracks (Van Houtte 2006; Van Houtte and Van Maele 2012). This finding relates to the attitudes of students and teachers being less learning-oriented in technical/vocational tracks than in academic tracks preparing for higher education (Carbonaro 2005; Hargreaves 1967). A *School's religious denomination* might play a role as well because the level of social capital in school is found to be higher in private (religious) schools than in public schools (Coleman and Hoffer 1987; Bryk et al. 1993). In this light, it has been found that individual and collective trust among teachers is stronger in private (catholic) schools than in public schools (Van Maele and Van Houtte 2009, 2011).

The organizational literature indicates that the composition of an organizational group in terms of several demographic and role-related characteristics may have a substantial influence on organizational outcomes (see Horwitz 2005; Pfeffer 1997;

Reskin et al. 1999). With regard to compositional school characteristics, it has been shown that teachers' trust in students and parents is more fragile in schools with a *socioeconomically disadvantaged student population* (see Goddard et al. 2001, 2009; Smith et al. 2001; Van Maele and Van Houtte 2009). In lower SES-schools trust among colleagues is equally more fragile (Van Maele and Van Houtte 2009, 2011). Besides, the *ethnic composition of the student body* plays a role as well. Teachers' trust in students and parents is lower when the proportion of students of color in school is high, controlling for the socioeconomic composition of the student body (Goddard et al. 2009; Van Maele and Van Houtte 2009). Also Bryk and Schneider (2002) indicated teachers' trust relations to be more fragile in schools in which the majority of students enrolled had a non-native origin, taking into account the socioeconomic school composition. Surprisingly, Van Maele and Van Houtte (2009, 2011) ascertained that teachers' trust in colleagues is fostered when ethnic majority students are concentrated in school when controlling for the SES-composition of the school. Another compositional characteristic that might be taken into account is the *gender composition of the student body*. Both individual and collective teacher trust in students are shown to be higher when the proportion of girls attending the school increases (Van Houtte 2007, Van Maele and Van Houtte 2009).

Socioeconomic and ethnic school composition are regarded as key determinants of school effectiveness and improvement in educational research (Dumay and Dupriez 2008; Opdenakker and Van Damme 2007; Thrupp and Lupton 2006). Research demonstrates that in the United States and in several European countries social class disadvantages are still associated with children's educational careers (Agirdag et al. 2012; Breen et al. 2009; Pfeffer 2008). Given that trust relationships are particularly fragile in those schools in which ethnic minority and lower-SES students are concentrated, improving trust in these school contexts could play a determining role in enhancing educational equity.

Relatively little insight exists, however, on those school processes which explain the assessed relationships between compositional and structural school features and teachers' trust (*e.g.*, Addi-Raccah 2012; Goddard et al. 2009), although it has been proposed that behavioral (*e.g.*, collaborative problem solving), cognitive (*e.g.*, collective teacher efficacy), and affective (*e.g.*, organizational identification) mechanisms fulfill this role (Adams 2008; Forsyth et al. 2011). In contributing to this explanation, we next suggest that the content and homogeneity of the school culture might add to the explanation of associations between compositional and structural school features and teachers' individual and collective trust in other school members (see Fig. 1.1).

1.3.3 A Learning-Oriented and Homogeneous School Culture

An essential purpose of education—and of the teaching job in particular—is to transfer knowledge to students and to improve students' learning. Students' academic achievement and its antecedents have accordingly received primary attention within the educational literature (*e.g.*, Brookover et al. 1978; Coleman et al. 1982; Lee and Loeb 2000; Opdenakker and Van Damme 2001). Given the aim of their

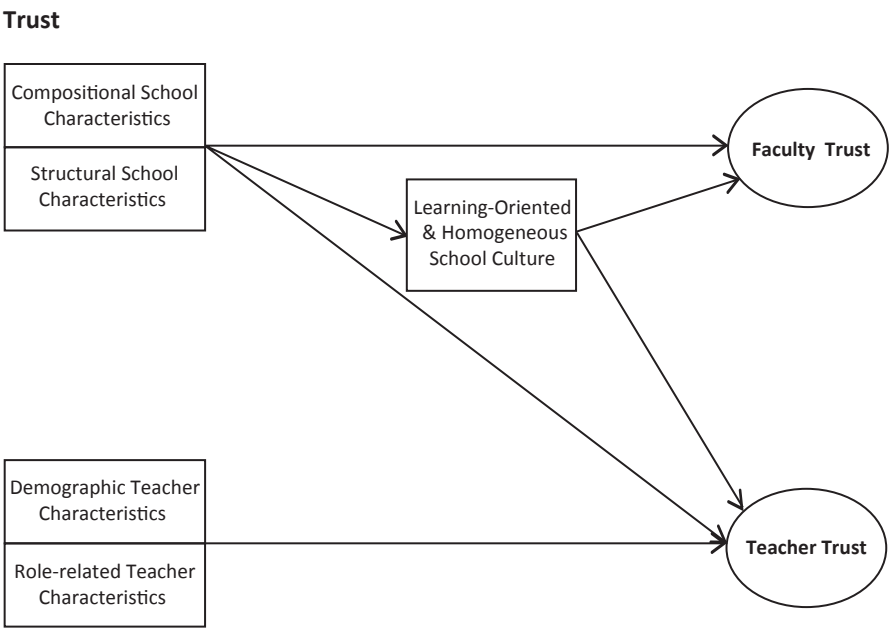

Fig. 1.1 Antecedents of individual and collective teacher trust

profession, teachers are presumed to expect other school members to contribute to students' learning by exhibiting appropriate attitudes, values, norms, goals, and behaviors. Therefore it can be argued that a school environment in which all participants are engaged in improving student learning and performance nurtures the primary task of the teaching profession. In these schools, teachers should be more confident that others will meet their expectations and their perceptions of others' competence, benevolence, and reliability should be enhanced as well. As a consequence, teachers' perceptions of others' trustworthiness should be strengthened when the school members embrace a student learning orientation.

If the school members' assumptions, beliefs, values, norms, and behaviors are oriented toward student learning, a *learning-oriented school culture* prevails. Culture is commonly defined as "a fairly stable set of taken-for-granted assumptions, shared beliefs, meanings, and values that form a kind of backdrop for action" (Smircich 1985, p. 58). A precondition for the origin of a culture is a group of people who encounter common issues in a common situation (Van Houtte 2002; Van Houtte and Van Maele 2011). Accordingly, from the point of view that school members are part of the same group of people who encounter similar problems in the same school organization, it becomes possible to explore the culture of the school organization. Yet, each primary role group in school could also be regarded as a particular group of people who encounter common issues within the same context. This perspective makes it suitable not only to explore a school's organizational culture but also to analyze the culture of its specific role groups (see Maslowski 2006; Van Houtte 2002),

such as the student and teacher culture. Because *content of culture* refers to the *meaning* of basic assumptions, norms, values, and behaviors shared by the group's or organization's members, it is suggested that if the constitutive aspects of a role group's culture reflect an orientation toward student learning, its content is learning-oriented (see Dumay 2009; Hofstede et al. 1990; Maslowski 2006; Schein 2004). This, as we have argued, should underpin teachers' trust in the members of that particular group.

Next to a learning-oriented school culture, we propose that the *homogeneity of school culture* fosters teachers' trust as well. Homogeneity of culture refers to the extent to which basic assumptions, norms, values, and behaviors are shared by an organization's or group's members (Hofstede et al. 1990; Maslowski 2006). In line with the shared mental model theory which argues that shared attitudes, beliefs, or values underpin trust relations among organizational members (Cannon-Bowers and Salas 2001; Chou et al. 2008), we suggest that teachers' judgments of other school members' trustworthiness should be more positive when assumptions, values, norms, and behaviors are shared. In our opinion, a homogenous school culture particularly fosters social relationships in school that are characterized by openness and honesty—two important sources of trust (Tschannen-Moran and Hoy 2000). Moreover, when school members share common beliefs, values, norms, and behaviors, the level of social cohesion in school is stronger (see Battistich et al. 1997; Bryk et al. 1993; Coleman and Hoffer 1987)—supporting teachers in performing their responsibilities, and, accordingly, benefiting their perceptions of other school members' trustworthiness.

There is evidence that individual and collective teacher trust relate to the compositional and structural school context (see Sect. 1.3.2). On the other hand, the nature of the school culture associates with the school context as well. The nature of both teacher and student culture is, for example, less learning-oriented in technical/vocational schools as compared to academic schools (Van Houtte 2004, 2006), whereas the socioeconomic composition of the student population associates with students' futility culture (Agirdag et al. 2012), and with a faculty's teachability culture (Van Maele and Van Houtte 2011). Exploring the relationship between the nature of school culture and teachers' trust might contribute to the existing research about the school context's influence on teachers' trust in other school members. This reasoning is supported by the fact that lower levels of faculty trust in students occurring in technical/vocational schools than in academic schools is caused by the poor nature of students' study culture within the former (Van Houtte 2006), while lower levels of teacher trust in colleagues in low-SES schools as compared to in high-SES schools are related to a more homogeneous teacher culture within the latter (Van Maele and Van Houtte 2011).

1.4 Consequences of Trust for School Life

The relevance of trust relationships for school life is revealed through its relatedness with significant educational outcomes. Trust benefits organizational outcomes because it constitutes a crucial facet of the level of social capital present within an

organization—which is in general described as the actual and potential resources that are embedded in the relationships among the members (Adler and Kwon 2002; Leana and Van Buren 1999). Social capital within a (school) organization can be defined in terms of both the structure and content of relationships among its members (Adler and Kwon 2002; Nahapiet and Ghoshal 1998). The structural dimension of social capital indicates the connections between the organizational members such as who is connected to whom or the frequency of interactions. It provides an indicator, for example, about the information flow within an organization. The relational dimension of social capital, on the other hand, gives an idea of the amount and richness of the information that is shared among the organization's members. It refers to the nature of relationships that people have developed with each other through a history of interactions and experiences (Nahapiet and Ghoshal 1998). Trust enters the story at this point because it is regarded as a key aspect of an organization's relational social capital (Leana and Van Buren 1999; Nahapiet and Ghoshal 1998)—addressing the quality of the social relationships among the organizational members. When these relationships are characterized by trust, valuable information is more likely to be shared and people are more confident in the positive intentions of others and their behaviors. Because of trust, people are more willing to risk vulnerability toward other members of the organization (Rousseau et al. 1998; Mishra 1996). Trusting relationships thus enable an environment conducive for cooperation (Gambetta 1988), and one with less uncertainty (Luhmann 1979). Besides, resources embedded within an organization are more likely to be mobilized when trust marks out the social networks within the organization (Lin 2001). Trust is therefore beneficial to both organizations and their members (Chou et al. 2008; Costa 2003; Dirks and Ferrin 2001; Rousseau et al. 1998; Leana and Van Buren 1999). Also the educational literature has used the social capital approach to trust relations in school settings (see Bryk and Schneider 2002; Daly et al. 2010; Forsyth et al. 2011; Goddard 2003; Hargreaves 2001).

Across the several chapters of this volume, the significance of trust relationships within the context of educational settings for the quality of school life will become clear. Several chapters discuss the role of trust in school in relation to student and teacher outcomes. Other chapters shed light on how trust in people or institutions external to the school organization, and even trust among external school members, influences school life. Past research and the present volume comprise evidence that solidifies the positive trust relationships with a variety of educational outcomes. Most of the studies investigating the consequences of trust use cross-sectional data, however, making causal claims unjustified. In establishing a more solid understanding of the causal effects of trust in schools, an intensified application of longitudinal data samples would be beneficial. Longitudinal data analyses will additionally increase our knowledge on lag time between increases in trust and positive yields with respect to a broad range of educational outcomes, in particular student achievement. Although some studies have used a longitudinal framework (*e.g.*, Bryk and Schneider 2002; Leana and Pil 2006), to our knowledge, none have investigated whether positive consequences of individual and collective trust in turn foster that trust. It is suggested, however, that the relationships between trust and its outcomes are mutually reinforcing (Adams 2008; Forsyth et al. 2011; Tschannen-Moran 2001).

For example, it is reasonable to assume that when teachers' trust in students contributes to students' performance gains, this in turn will reinforce the level of teacher trust in students. In order to get a better grasp on the causal and mutual relationships between trust and a variety of educational outcomes, trust inquiry would benefit from an elaboration of methodologies, providing a more solid ground for interpreting causal effects of trust in educational settings.

We have opted to subsume the following chapters across four distinct sections that refer to four key areas of school life. A first section is named '*Learning*'. This section presents chapters which differently explore distinct kind of trust relationships in school in relation to student achievement and ambitions. Section two has been labeled '*Teaching*'. In this section chapters are included which discuss trust in relation to teachers' job attitudes and professional relationships. A third section, '*Leading*', discusses findings which are highly informative for school leaders, particularly in light of their knowledge regarding the development of trust among their teachers. The fourth and final section, '*Bridging*', presents chapters which discuss trust in or among external school parties and its role in school life. The conceptual distinction between the four sections is rather arbitrary. After all, all of these key areas of school life are strongly interrelated. Findings on trust and teacher collaboration or professionalization, for example, are not only informative for teaching, but they also inform student learning. Similarly, trust relationships among teachers not only affect the quality of teaching and consequently the learning of students, they are crucial for effective school leadership as well. It is therefore also important for principals to understand how collegial trust develops. In general, we argue that any kind of trust relationship in educational settings will influence one or more of these four interrelated key areas of school life. Schools that perform well in the areas of bridging, leading, teaching, and learning can be expected to successfully accomplish their goals. As such, it can be argued that trust contributes to excellence in education.

Presenting a rationale for how all conceivable trust relationships in school specifically relate to the four key areas of school life is a rather ambitious assignment. Yet, just as we have focused on teachers when discussing antecedents of trust, we next present how individual and collective teacher trust contribute to the four areas of school life and, accordingly, school performance (see Fig. 1.2). Making a distinction between individual and collective teacher trust aligns with the distinction between social capital as an attribute of individuals versus collectivities (Portes 2000). Because individual trust is a resource embedded in individual networks (Portes 2000), teachers' own job-related attitudes and practices, and, accordingly, their personal role functioning in school, will be fostered when they have trust in other school members. Whereas teacher trust is an individual construction that is build up out of a teacher's repeated interactions with other individuals or groups in school, collective teacher trust (i.e. faculty trust) is socially constructed out of repeated interactions among the members of the teaching staff—making it a social phenomenon (Forsyth et al. 2011; Van Maele and Van Houtte 2009). Trust then functions as a social norm that is present within the faculty. As a group norm, faculty trust not only affects teachers' individual perceptions, beliefs, values, norms,

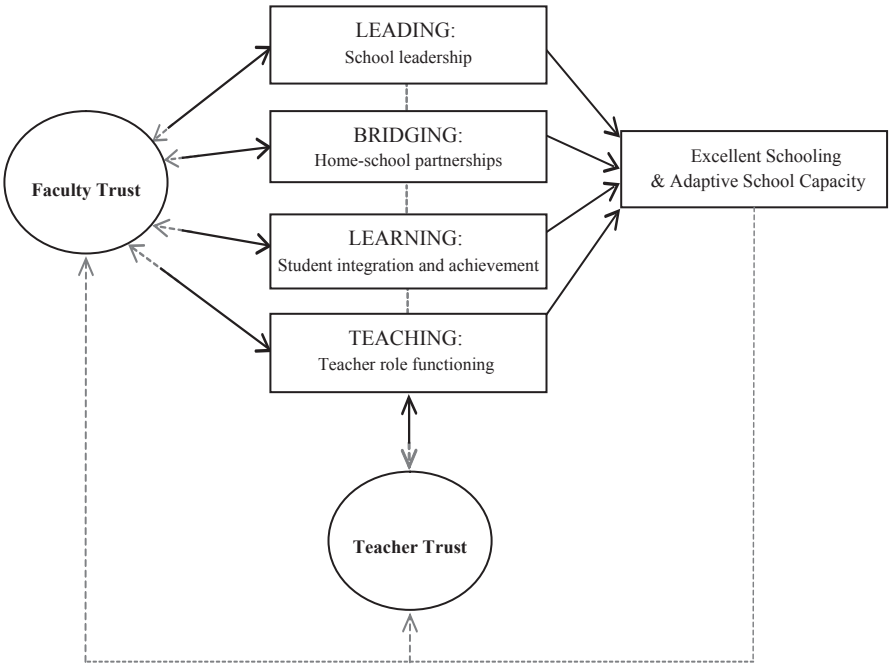

Fig. 1.2 Consequences of individual and collective teacher trust

and behaviors, it also narrows the relational gaps between the faculty and other role groups involved in schooling (Forsyth et al. 2011)—influencing the perceptions, beliefs, values, norms, and behaviors of these groups and their individual members.

1.4.1 Role Functioning of Teachers

To accomplish their teaching goals, teachers are dependent on their interactions with other school members. Teaching may thus be described as a profession in which social relationships with other school members are inherent to the job (Lortie 2002; Nias 1981). In acknowledging this, educational studies have indicated that the nature of teachers' social relationships in school influences their personal job attitudes and behaviors (*e.g.*, Louis 1998; Aelterman et al. 2007; Skaalvik and Skaalvik 2011). Because trust is a crucial indicator of the quality of teachers' social relationships in school, teachers who perceive the other school members as trustworthy feel supported performing their job. For this reason we suggest that trust might improve teachers' job attitudes and practices, and, accordingly, their teaching quality.

The educational trust literature has provided evidence that teachers' trust is important for their role functioning in school. It has been demonstrated that when teachers trust the students they report higher levels of job satisfaction (Van Houtte 2006;

Van Maele and Van Houtte 2012). Bryk and Schneider (2002) showed that teachers' trust in parents, colleagues, and the principal positively influence their orientation toward innovation, their reaching out to parents, their engagement in professional community building, and their commitment to the school community. Similarly, Moolenaar and Sleegers (2010) showed that in schools in which the collective level of collegial trust is high, teachers are more oriented toward innovation—they are more willing to try new practices and learn continuously, and they are more open to change (see also Louis 2007). A faculty's trust in the principal was positively associated with teachers' organizational citizenship behaviors, which indicates their willingness to go beyond the formal requirements of the job (Tschannen-Moran 2003), with engaged teacher behavior (Tarter et al. 1989), and with commitment to students (Lee et al. 2011). Moreover, schools characterized by high levels of faculty trust demonstrate higher levels of collective teacher efficacy (*e.g.*, Forsyth et al. 2006; Goddard et al. 2000). This means that when the level of faculty trust is high, teachers perceive that the efforts of the teaching staff are likely to improve student performances.

Trust among teachers is of particular importance for teachers' attitudes and behaviors related to their professional development. It has been found that faculty trust in colleagues nurtures collaboration among teachers (Tschannen-Moran 2001), and teachers' professional orientation (Tschannen-Moran 2009). Trust has accordingly been called the backbone of strong and sustainable professional learning communities in school (Hargreaves 2007, p. 187). After all, teachers need one another in school-based professional learning communities in order to engage in reflexive dialogue, open the door of their classroom, and collaborate on student learning (Bryk et al. 1999). Collegial trust is important then because it enhances teachers' willingness to risk vulnerability toward their colleagues while participating in professional development. For this reason, collegial trust is a likely antecedent to successful professional learning communities (see Coleman 1988).

The evidence is strong that teacher and faculty trust have important consequences for teachers' job satisfaction and commitment, their efficacy, their orientation toward innovation, and their professionalism. In concurrence with the organizational trust literature (*e.g.*, Chou et al. 2008; Costa 2003; Dirks and Ferrin 2001; Leana and Van Buren 1999; Zand 1972), the educational trust literature therefore provides evidence that teachers who trust other school members are more likely to exhibit positive job attitudes and behaviors, and, consequently, perform better. Therefore, teachers' trust in other school members nurtures their teaching.

1.4.2 Achievement and Social Integration of Students

The collective level of teacher trust in students might be of particular importance to how students perform and feel in school. The development of strong teacher-student bonding is a crucial factor in enhancing students' social integration in school (Crosnoe et al. 2004). Its significance is revealed through studies which have related students' perceptions of teachers' interpersonal behavior to students' dropping

out (Croninger and Lee 2001), their attachment to school (Hallinan 2008), and their well-being at school (Van Petegem et al. 2008). The level of social capital in their school environment increases when teachers trust their students (see Coleman 1988; Stanton-Salazar 1997). Teachers' trust in students might therefore be regarded as a form of teacher-based social capital available to students (see Croninger and Lee 2001; Smyth 2004). In maintaining an effective learning environment for students, developing trusting relationships between teachers and students is essential. Students notice whether they are trusted or not and students who experience a lack of trust on behalf of their teachers will be more likely to divert energy into self-protection (Ennis and McCauley 2000; Tschannen-Moran, 2004). Students who do not experience teacher trust will be less willing to risk vulnerability in the classroom, such as in raising their hand in order to reply to a teacher question. Students who do experience teacher trust, on the other hand, will more easily engage in supportive relationships with teachers, and this in turn expands the level of social capital that students have available (Stanton-Salazar 1997).

Because the amount of social capital available to students affects their learning (Coleman 1988), it is likely that students' academic achievement is fostered in a trusting school environment. The educational trust literature has demonstrated this. Already in 1973, Imber asserted that the classroom achievement in a single elementary school was positively correlated with teachers' trust in their students. Later on, Goddard et al. (2001) demonstrated by means of large-scale survey data that math and reading achievement consistently differs as faculty trust in students and parents differs. Faculty trust in students and parents was positively related to students' achievement. Forsyth et al. (2006) confirmed these findings for students' academic performance across elementary, middle, and high schools. More recently, Goddard et al. (2009) showed that faculty trust in students and parents mediated the association between the school composition and math and reading achievement on state assessments.

Other studies as well have shown teachers' trust in students to positively associate with students' performance, although these have used a trust measure as part of a broader empirical construct. In creating a social capital measure, Goddard (2003) used items that measure teachers' trust in students and parents and explored its association with elementary students' chance of passing math and writing assignments. Students' chance of passing on these tests was slightly higher in the schools that scored high on the social capital measure. Similarly, Hoy et al. (2006) used faculty trust in students and parents as part of their measure for academic optimism, and showed that this construct was positively associated with student achievement.

Students' achievement scores are not only improved when the teachers trust the students. Bryk and Schneider (2002) indicated that teacher trust in the principal, parents, and colleagues was predictive of improvements in students' math and reading performance, whereas Forsyth et al. (2006) showed that academic performance was positively related to teachers' trust in colleagues and the school principal. Finally, collegial trust, as part of a broader measure of teachers' social capital, positively influenced students' performance and the effects were sustained over time with respect to students' reading achievement (Leana and Pil 2006).

From the educational trust literature it can thus be inferred that teachers' trust in other school members contributes to students' achievement. There is ample evidence that a trusting environment for students fosters their performance on achievement tests. Yet, teachers' trust might not only relate to students' academic achievement but also to students' feelings toward school. Students' sense of belonging to their school is enhanced when they perceive their educational environment to be supportive (Goodenow 1993; Osterman 2000). Because faculty trust incites a supportive student environment (see Ennis and McCauley 2000; Stanton-Salazar 1997), and because trust implies an affective component (McAllister 1995), it is reasonable to assume that it might contribute to students' social integration in school. Furthermore, the more social resources such as trust are present in school, the more chance that a school has a strong sense of community (Coleman and Hoffer 1987; Bryk et al. 1993), which should get reflected in higher levels of belonging among the school members. Findings on this matter are rather scarce, however. Smith and Birney (2005) demonstrated a positive association between faculty trust in students and parents and teachers' perceptions of less bullying among students, which could be regarded as influencing students' social integration in school. Furthermore, it has been demonstrated that faculty trust in students relates to higher levels of students' sense of school-belonging (Van Houtte and Van Maele 2012), and to lower levels of students' sense of futility (Van Houtte et al. 2012). In sum, given that teachers' trust supports students' non-cognitive and cognitive educational outcomes, it can be argued that trust contributes to the level of learning taking place in school.

1.4.3 Home-School Relationships

Compared to students, teachers, and school administrators, parents are not involved in the daily activities taking place in school. From this point of view they can be viewed as external school members—while still being one of the primary role groups involved in schooling. Thus we categorize teacher-parent relationships as a bridging function, spanning the boundaries of the school. Parents' involvement in their children's education holds an important influence on children's learning. When parents get involved in their children's school and education the children's learning problems decrease (Zellman and Waterman 1998), and their development of skills and knowledge expand (Hoover-Dempsey and Sandler 1995). Yet, for parent involvement to have a positive effect on children's learning, the nature of the relationships between parents and school personnel are of particular importance (Adams and Christenson 2000; Adams et al. 2009; Zellman and Waterman 1998). A fit, or synchrony as Bryk and Schneider (2002) have called it, between parents' involvement and the expectations of the school and its teachers toward parents is important (Hoover-Dempsey and Sandler 1995). Trust within the home-school relationship is crucial then because such a fit is more likely to be present when that relationship is characterized by trust, and because both parties will be more willing to risk vulnerability in the interests of children when trust is present. The aspects of vulnerability and perceived risk in the parent-school relationships are particularly

present when the school provides specific opportunities and demands for parental involvement, such as organizing parent evenings during which teachers and parents discuss children's educational progress.

The educational literature has already paid moderate attention to the role of trust in parent-school relationships (see Adams 2008; Adams et al. 2009; Forsyth 2008; Kochanek 2005; Tschannen-Moran 2004). With respect to parent trust in the school organization, it has been indicated that school leaders should work on reducing parents' perceived vulnerabilities and risks within the parent-school relationship by addressing parents' affective needs (Adams et al. 2009). Moreover, Adams and Christenson (2000) have found that improving home-school communication played a significant role in enhancing parent trust in teachers.

The teacher perspective on trust in the parent-teacher relationships has been explored as well. Teachers' trust in parents plays a crucial role because teachers are the first line of communication between the school and children's family. Schools do differ in their teachers' attitudes toward parents. In some schools, teachers want to keep parents at a distance because they view themselves as the professional experts, whereas in other schools teachers do not feel threatened or vulnerable when parents are involved in school (Dom and Verhoeven 2006). With respect to building teacher trust in parents, teachers' perceptions that parent dedication to education and providing a positive academic home environment significantly contributed to the development of trust in parents (Adams and Christenson 2000). Teachers also want their professional competence and their caring for their students to be acknowledged (Tschannen-Moran 2004). Furthermore, teachers who trust their students' parents also reach out more to parents, for example encouraging parents' feedback on educational matters (Bryk and Schneider 2002). Finally, a faculty's trust in parents has been related to improved student achievement (Goddard et al. 2001, 2009).

The literature has demonstrated that parents play a crucial role in their children's. Schools therefore need to pay attention to establishing positive home-school relationships. Because trust is a crucial aspect of relational quality (Nahapiet and Ghoshal 1998), it is suggested that a faculty's trust in the parents contributes to the overall quality of the home-school relationships. This should in turn benefit students' learning and accordingly the quality of schooling.

1.4.4 School Leadership

There is a general agreement across the organizational literature that employees' trust in organizational leaders is beneficial to both employee and organizational outcomes (*e.g.*, Shamir and Lapidot 2003; Zand 1972). Dirks and Ferrin (2002), for example, showed in their meta-analysis on trust in leadership that employees' trust in organizational leaders positively relates to their job performance, organizational citizenship behavior, job satisfaction and commitment. Employees' trust in leaders is acknowledged to play an important role for school performance as well (Bryk and Schneider 2002; Forsyth et al. 2011; Kochanek 2005; Tschannen-Moran 2004). When faculty members perceive their school principal as trustworthy they are more

likely to exhibit higher levels of organizational citizenship behavior (Tschannen-Moran 2003). It has been shown that a faculty's trust in the school principal is enhanced when the principal behaves in an authentic way—i.e. taking responsibility for her or his actions, being non-manipulative, and demonstrating salience of self over role (Hoy and Kupersmith 1985), and when she or he is supportive of teachers—i.e. being helpful and genuinely concerned about the professional and personal welfare of teachers (Tarter et al. 1989). Also principals who protect their teachers from unreasonable community and parent demands, who are considerate, and who provide the necessary resource support foster teachers' trust in them (Smith et al. 2001). Moreover, transformational school leadership, which elicits an awareness and commitment to a common organizational mission and which evokes followers to perform beyond the minimum levels specified by the organization, contributes to a faculty's trust in the principal (Tschannen-Moran 2003). It can therefore be concluded that principals play an important role in creating a high-trust environment within their school (Cosner 2009; Kochanek 2005).

Although teachers' trust in the school principal is regarded as an important factor in successful school leadership and performance (*e.g.*, Daly and Chrispeels 2008; Forsyth et al. 2011), most studies have focused on which leadership styles relate to teachers' trust in the principal (cf. supra). Less is known about the role of a faculty's trust in the principal as a condition for successful school leadership. Teachers' trust in the principal has mainly been associated with person-centered and relationship-oriented leadership styles (Adams 2008). Therefore, faculty trust in the principal may be of particular importance to the effectiveness of relationship-oriented leadership styles, such as distributed leadership, which focuses on how school leaders promote and sustain conditions for successful schooling in interaction with others rather than on what structures and programs are necessary for success (Spillane et al. 2004; Timperley 2005). As trust denotes relational quality, it is not surprising that trust has been called an important condition for successful distributed leadership (Abzug and Phelps 1998; Woods et al. 2004). Although faculty trust may particularly foster the effectiveness of relationship-oriented leadership styles, faculty trust in the principal should support the success of each style of school leadership because teachers will accept and support school principals' actions and visions more easily when they perceive their leader to be trustworthy.

1.4.5 Excellent Schooling and Adaptive Capacity

We have argued that teachers' trust in other groups of school members fosters four key areas of school life: school leadership (leading), home-school relationships (bridging), students' achievement and social integration in school (learning), and teachers' role functioning (teaching). When schools perform optimally in these areas the performance of the whole school organization is enhanced. After all, these key areas of school life contribute to the establishment of what has been described as effective schools (Sammons 1999). Research into school effectiveness has, however, demonstrated a one-sided concentration on cognitive outcomes of students

(see Coe and Fitz-Gibbon 1998; Luyten et al. 2005), mainly conceiving effective schools as schools in which the students' achievement is improved. Student learning, we acknowledge, is a central and crucial aspect of schooling. Yet, the question that needs to be raised is whether a school in which students attain high achievement scores but in which they feel no belonging is better than a school in which students' achievement is slightly lower but their sense of belonging much higher. For high levels of school performance, we think more is needed than just high academic test results. Leadership which succeeds in attaining its own goals, establishing positive relationships between parents and school, teaching students who actually feel part of their school, and teachers who function in an effective and professional way are four aspects of school life which determine what we regard as excellent schooling.

Teachers' trust in other school members not only establishes the basis for excellent schooling, it is also an important resource for schools' capacity to deal with change. According to Cosner (2009), principals perceive collegial trust in particular as a prerequisite for a school's capacity to successfully respond to reforms. Trust is particularly important for teachers' willingness to learn and try new ideas and practices because it supports their orientation toward innovation and professionalism (Bryk and Schneider 2002; Moolenaar and Sleegers 2010; Tschannen-Moran 2009). Louis (2007), for example, showed that trust was a precondition for teachers' willingness to work with innovations introduced by central office administrators. The presence of trust also inhibits rigid school responses to improvement programs enforced by central administration (Daly 2009). Bryk and Schneider (2002) demonstrated that in Chicago Public Schools relational trust fostered those conditions which eventually resulted in a successful implementation of reform initiatives, such as an outreach to parents (cf. home-school relationships), and teacher commitment to the school community (cf. teachers' role functioning). Moreover, teachers' trust levels associate with enabling school structures (Forsyth et al. 2006)—indicating that school leadership has succeeded in developing an organizational structure in which the rules, regulations, and procedures are helpful and lead to problem solving among the school members (i.e. school leadership). In sum, the literature suggests that teachers' trust in other school members plays an important role in fostering those conditions which determine a school's capacity to successfully adapt to change.

1.5 An Outline of the Volume

The following chapters represent some of the frontiers of trust research. Exploring what trust means with respect to school life is what unites them. Their ways of approaching trust, the questions they raise, and the insights they offer are what distinguish them from one another. In Chap. 2, Barbara Schneider and colleagues provide an overview of the development of the concept of relational trust. Whereas most studies exploring student outcomes of trust have focused on the implications of trust for student achievement, these authors introduce the role that trust in high-schools

might play for college attendance rates. In Chap. 3, Megan Tschannen-Moran extends our understanding of the interrelatedness of distinct collective trust measures and student achievement. She explores how collective measures of teacher, student and parent trust relate to one another and contribute to student achievement. In Chap. 4, Patrick Forsyth and Curt Adams investigate trust and student achievement at the school level. They argue, and empirically demonstrate, that collective teacher trust in principal informs the latent construct "organizational predictability", whereas collective teacher trust in colleagues informs the latent construct "instructional capacity". The authors further show that organizational predictability is indirectly predictive of student performance through its relationship with a school's level of instructional capacity. In Chap. 5, Monica Makiewicz and Douglas Mitchell add to the conceptual understanding of trust by exploring teacher trust in the principal using a modified instrument that stems from the organizational trust literature. In contrast with previous findings, these authors could not assess a significant association between trust and student achievement. However, their model of trust in the principal shows promise and might inspire others to explore the trust-achievement connection further. While these chapters discuss trust from distinct points of view and relate it to indicators of student learning, the next section includes studies that explore the importance of trust for the teaching role.

In Chap. 6, Anthony Dworkin and Pamela Tobe discuss the implications of high-stakes accountability systems for the nature of interpersonal trust relationships of teachers. They argue that externally-imposed accountability systems affect the nature of trust in educational settings. Examining longitudinal data, these authors demonstrate that increased accountability standards are associated with lower levels of teacher trust and imply higher rates of teacher burnout. Whereas teacher quality is threatened by high levels of teacher burnout, it is fostered by school teachers who participate, engage, and learn within professional development initiatives. In Chap. 7, Pamela Hallam and colleagues discuss the importance of trust for teacher collaboration within a professional learning community in a challenging school context. Using qualitative analyses, these authors conclude that trust plays a critical role in the development of collaborative teaming. Their findings add to the discussion of principal leadership style and school effectiveness in challenging school contexts. While teacher trust in colleagues is important for learning within professional learning communities, teacher trust in students promotes learning in classrooms. In Chap. 8, Dimitri Van Maele and Mieke Van Houtte explore determinants of trust at both the school and teacher levels. They show that trust in students is fragile in particular school contexts because of teacher perceptions about student ability to meet the expectations imposed on them, regardless of students' own reports about their study orientation. The section on trust and teaching ends with Chap. 9 in which Serafino Celano and Roxanne Mitchell depart from the five facets of trust perspective as a way to measure teacher trust in mentors. These authors point out that building trust between novice teachers and their mentors might be important in creating a sense of personal teaching efficacy among the former.

For school leaders it is crucial to understand the role trust plays for the way learning and teaching takes place. Awareness of how trust affects different aspects

of school life is essential for successful school leadership. Each chapter, in its own way, can inspire those leading schools. Yet, the chapters in Sect. 3 may be of particular interest to school leaders as they focus on developing trust among school members. In Chap. 10, Nienke Moolenaar and colleagues investigate how social relationships of individual teachers and school teams influence teacher trust in colleagues. Their social network study provides insight into how reliance on one-to-one reciprocal relationships among teachers may hinder the emergence of trust. In Chap. 11, Timothy Ford points out conditions supportive of growth in trust among teachers in schools implementing an improvement. He argues that formal control mechanisms inherent in improvement programs may not promote change in teacher-teacher trust. Growth in teacher-teacher trust is, however, stimulated by the shared instructional experience, collective responsibility, and critical dialogue established over the course of the program implementation. In Chap. 12, Page Smith and Adrian Flores argue that principal influence—the ability of the principal to be persuasive and foster compliance and change—is conducive to the development of collective teacher trust in the principal.

In the final section on trust and bridging, the authors explore how trust in or among external school parties may influence school life. In Chap. 13, Alan Daly and colleagues investigate social networks of principals in school districts that are engaged in reform efforts. The authors indicate that trust among principals facilitates their ability to connect with one another in terms of exchanging advice related to reform. Accordingly, their study suggests that relational patterns between principals might play a significant role in the successful implementation of reform initiatives in school. Whereas Daly and colleagues suggest that a principal's relationships with external school parties may affect school life itself, Julie Kochanek and Matthew Clifford argue, in Chap. 14, that relationships among external school parties, particularly among district policymakers, might play a role in a school's capacity to enact improvement. These authors show that trust is an influential factor with regard to which individuals and what kind of information enter into district policymaking. Finally, in Chap. 15, Wieland Wermke offers an original point of view on how teachers' trust in external school organizations, in specific institutions which provide continuing professional development, could play a role in school life. He further argues that trust patterns in which teachers are socialized are nation-specific and deserve further cross-country comparative investigation.

1.6 Conclusion

In this chapter, we have sketched how the research on school trust has developed since the mid '80s and has spread across the international educational research community. We have delineated how that literature has generally conceptualized school trust and we have argued that trust should be explored at distinct analytical levels. Next, we have discussed how antecedents at different levels of analysis might influence trust in school. We have specifically presented a framework to analyze whether

the content and homogeneity of school culture explain associations between the nature of the school context and teachers' trust in other school members. It has been advanced that improving teachers' trust within particular school contexts might enhance educational equity. We have further reasoned that trust in educational settings nurtures four key areas of school life. This framework has been applied to how teachers' trust in school fosters their role functioning, students' achievement and school-integration, home-school partnerships, and school leadership. Finally, we discussed how trust relations in school support the successful implementation of reforms or policy measures.

The collected contributions in this volume constitute an original "state of the art" update of the research on trust in schools. The chapters by leading and rising scholars outline new and emerging pathways to explore this phenomenon. We hope that this volume convinces readers that trust should be considered as a critical characteristic of schools with serious consequences for their effectiveness. Trust merits continued attention of both scholars and practitioners because it paves the way to progress toward equity and excellence in education.

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Part I
Trust and Learning

Chapter 2
Trust in Elementary and Secondary Urban Schools: A Pathway for Student Success and College Ambition

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2.1 Prologue

Profound distrust permeated the Chicago Public School System during the 1990s when broad system reforms decentralized decision making to Local School Councils. Administrators, teachers, and parents, many of whom held preconceived biases of ineptitude, ill-treatment, and abuses of power and control about each other found themselves in situations where they had to work together on governance and instructional programs at their schools (Greenberg [Rollow] 1998). It is in this environment that Anthony Bryk, a team of outstanding graduate students, and I conducted an in-depth study of 12 elementary school communities in Chicago to understand the micro-politics of school reform. In the course of this work, we initially thought that high incidences of interactions among school staff and parents characterized as "caring" (working from definitions of Noddings (1992) and others) would give us a set of assumptions upon which to identify positive relationships and steps toward reform. However, examining our data more closely suggested a different theoretical framework, one that was more consonant with our sociological understandings of how norms, shared values, and actions are developed and strengthened through organizational interactions among social groups. Working from a social capital framework (Coleman 1988, 1990; Luhmann 1979) complemented with work by Fukuyama (1995), Putnam (1993, 1995a, b), theories of social exchange (Blau 1986),

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and organizational behavioral and management literature (see the edited volume by Kramer and Tyler 1996), a new idea of "relational trust" began to emerge.

The conception of relational trust was a journey—one that lasted over a decade. It began with interrogating 1990s Chicago field notes including school and classroom observations and interviews followed by testing the constructs that developed from these data in analyses of longitudinal teacher surveys and student assessment information. Results from these efforts eventuated in the book, *Trust in Schools: A Core Resource for Improvement* (2002). This volume brought a different lens for investigating trust that had earlier been explored by Hoy and colleagues (Hoy and Kupersmith 1984, 1985; Tarter et al. 1989) in which trust was characterized more as a measure of school climate than one of social interactions. Trust has more recently been conceptualized as an organizational property that has effects on such outcomes as principal leadership (Kochanek 2005), student performance (Goddard et al. 2009), and student misbehavior (Gregory and Ripski 2008).

One of the highest compliments paid to a scientific idea and subsequent findings occurs when scholars continue to work in that area, aiming to replicate earlier results. In educational research, especially in schools, which are dynamic entities, efforts to find universal organizational properties that produce similar results over time can be frustrating and often disappointing. Our relational trust findings showed a positive relationship to school improvement at the elementary-level, based on district-wide surveys and student school assessment patterns over a five-year period from the onset of the reform through its sustained implementation. Such a design imposes considerable constraints on opportunities for replication. Despite the substantive and methodological challenges of examining trust in schools, the thought-provoking studies in this volume continue to produce empirical evidence—sometimes in agreement with our early relational trust research results and other times not so. It is indeed reassuring that both senior and emerging talented scholars continue to wrestle with these ideas and conduct studies that remain promising for advancing science and reform in education.

More recently, we have been implementing an intervention, the College Ambition Program (CAP), in public secondary schools to change the expectations and actions of low-income and minority students, so that they can maximize their college ambitions and matriculate to postsecondary school in the fall after high school graduation (http://collegeambition.org). CAP is grounded in principles of relational trust, and its activities are designed to strengthen the relational ties within the school by helping to craft among the school community (including students, teachers, counselors, and parents) shared norms and values, and the actions to achieve them. This chapter begins by describing relational trust and how the conceptual principles that undergird it can be applied at the high school level. This framework is followed with a presentation of preliminary results from the first three years of the CAP study, and a discussion of some of the limitations of its design and applications for measuring the effectiveness of relational trust for changing norms and behaviors. The conclusion discusses how best to realistically build relational trust within a high school using low risk activities and the importance of social relationships for creating change in expectations and actions.

2.2 Conceptual Roots of Relational Trust

In defining relational trust, it is useful to trace back to James Coleman's conception of social capital (Coleman 1988, 1990). Social capital as defined by Coleman is a set of relational ties that facilitate action. It is important to underscore that these sets of relational ties are defined as social networks characterizing social systems rather than the attributes of individuals. Abstract in form and embedded in human interactions, social capital is created through exchanges that establish shared expectations and construct and enforce norms, generating social networks perceived as trustworthy. These social norms are purposively formed to ensure that benefits can accrue to network members and sanctions are imposed when violations occur. The norms and resultant actions become the "capital" that makes possible the achievement of certain ends—such as teachers in a school expecting that academically successful students will apply to college and that these students complete the college application process (see Schneider (2000) for further discussion of social capital and norms).

Social capital is particularly useful for describing the actions of actors in social systems, such as families, schools, or communities. The denser and closer the relational ties in the network, the greater the likelihood that information will be communicated and subsequent actions undertaken. High degrees of interconnectedness among the members make it easier to repair miscommunications and other problems that could lead to the breakdown of the network. Information sharing is one aspect of what is exchanged in networks that create social capital; obligations and mutual expectations are the second. Obligations require action; expectations are assumptions about one's and others' behaviors. When shared by the collectivity, obligations and expectations affect each member's actions and become even stronger when sustained over time. Trustworthiness describes social networks where relational ties among members have generated mutual expectations and imposed consistent rewards and sanctions for desirable and undesirable actions.

Coleman's ideas focused on the structural properties of social networks (i.e., density—the strength of the ties, closure—the interconnection of ties over time, and trustworthiness—the embodiment of the obligations and expectations). Extending his ideas, the focus in the relational trust work (Bryk and Schneider 2002) was on explaining the nature of social interactions (i.e., relational ties)— from an interdisciplinary combination of economic, philosophical and social psychological frameworks— and then turning to how these interactions are observed in an organization, specifically in this case urban schools serving low-income minority students.

Trust can be viewed as an instrumental exchange whereby the motivation to trust between parties is determined by an assessment of the benefits and liabilities associated with an action. (This definition of trust can be found in the economic literature, mostly associated with game theory; see Coleman (1990) for further explanation.) For example, a teacher explains that if homework does not arrive on time students' grades will be lowered. A student may choose to hand the homework in on time, even though doing so may come with some costs, such as time that could be spent on another activity. Or the student may decide to take a risk that not turning in the assignment would have a minimum effect on the overall course grade and so it is

not worth the forgone time, or that the teacher may not impose the rule and there will be no real consequences for not completing the homework assignment. Such instrumental exchanges are based both on the potential payoff of the transaction and other structural conditions such as the power, influence, reputation, and prior actions of the parties.

From a social psychological framework, trust can be perceived as a bond or a connection that joins individuals together, thereby also separating them from others—my group, my class, my department. Trust in this instance can be a moral, ethical exchange. Here one is willing to engage in a social exchange, motivated to act on behalf of what is good for the group, even if it requires some self-sacrifice. An example of this would be a teacher who decides to miss a social appointment after school in order to stay late and work with students organizing a food drive for a homeless shelter.

2.2.1 Defining Relational Trust

Trust takes on somewhat different forms in various social systems. For example, organic trust can be found in small religious communities, where social exchanges are predicated on unquestioned beliefs and subject to a moral authority. Contractual trust can be found in business transactions and other organizations such as unions, where social exchanges are constrained by formalized rules, regulations, restrictions, and penalties. Relational trust can be found in social institutions like schools and hospitals where social exchanges are undertaken because of their social value.

Three key elements define relational trust. First, like organic trust but unlike contractual trust it is abstract, embedded in interpersonal relationships. Second, as in other forms of trust, the fulfillment of obligations and shared expectations affects the strength of social exchanges among the parties. Third, unique to relational trust, is that it functions as an organizational property, where capital is realized—as a social good that enhances the goals and work of an organization, like improving the quality of a school, by raising performance, reducing dropouts, or sending large numbers of students to postsecondary institutions.

Relational trust, like other forms of trust, is achieved through a complex web of social exchanges, often in instances where the parties have unequal or asymmetrical power relationships. This is particularly important as it underscores that in a trust relationship the parties will be in some way dependent on one another. This dependency creates vulnerability on the part of both parties. Even if one group has more to lose than the other party by not being engaged in the exchange, there are also benefits to the more powerful party, resulting in some risk for both parties involved in the negotiations. For example, a high school mathematics faculty wants to implement an innovative instructional program and needs the approval from the principal. The principal has some reservations about adopting the program but has high respect for the competence of the teachers. In deciding whether to approve the adoption of the program, the principal has to weigh the consequences of not going along with the teachers in this instance and being able to count on their support in other future matters.

As shown in the example above, social exchanges occur in the context of role relationships, such as teachers with administrators, teachers with students, and teachers with other teachers. In *Trust in Schools* (Bryk and Schneider 2002), this idea was termed "role sets," which can be misunderstood as dyadic relationships (teacher to student) rather than as a way to distinguish the type of players (teachers) and the different roles they take on in various social exchanges as with administrators or parents. The idea of role relationships is important for delineating the obligations and expectations held by the parties in the social exchanges. If one of the parties fails to fulfill their obligations or does not maintain shared expectations, the value of relational trust is diminished. For example, teachers holding different college ambitions for their students on the basis of race or social class may diminish the relational trust between students and teachers. In instances where relational trust is threatened by variation rather than consistency in expectations and obligations—the value of the network for achieving a common good is weakened—which can lead to the dissipation of the network.

2.2.2 Questions of Intentionality

When engaged in social exchanges, there is always a concern about intentionality. For example, a member of a social system might not fulfill obligations, or show a change in expectations—or do more than is commonly perceived as required. Questions of intentionality are colored by one's personal past experiences, cultural beliefs, and ascriptive characteristics like gender. At a more micro level, four elements characterize the process of intentionality (labeled 'discernment' in Bryk and Schneider (2002)). These are: (1) respect—sustained civil social interactions within the network; (2) competence—fulfillment of one's obligations; (3) integrity—aligned actions (obligations) with commonly held expectations; and (4) personal regard for others—extending oneself for others beyond what is formally required in any given situation. Some have interpreted personal regard as an act of benevolence or caring; however, in defining relational trust, this idea has a somewhat different interpretation. Noddings (1984, 1992), for example, sees caring as a dyadic relationship between the "one-caring" and the "cared-for" (1984, p. 69), in which the "one-caring" demonstrates both (1) a deep understanding of the "cared-for," and (2) a willingness to act in his or her best interest. However, personal regard extends beyond these elements and requires evidence of specific actions taken to go above and beyond what would typically be expected in a role relationship. Thus, there is a moral imperative to undertaking specific actions that extend beyond care for another, it involves making personal sacrifices that have intrinsic meaning and value when the end goal (a) may not directly benefit the individual, and (b) strengthens and deepens social connections among others in the network, facilitating opportunities for reciprocation. For example, a teacher comes in early to work with a group of students on writing personal essays for college admission. Motivated by the teachers' example and standards of performance, after school the students share their essays, critiquing each other's work.

2.2.3 Testing the Effects of Relational Trust

The definitional work on relational trust was grounded in studying the qualitative field notes and observational data collected in 12 elementary schools over a three-year period. Teams of graduate students conducted interviews with teachers, administrators, and community leaders; observed in classrooms; and attended school events including teacher and local school council meetings. The data were coded to extract key concepts that shaped an understanding of how relational trust was formed, operated in different settings, and related to principal leadership. The importance of principal leadership was further examined in the dissertation by Julie Kochanek, which resulted in the book, *Building Trust for Better Schools: Research-Based Practices* (2005). Kochanek extended the relational trust ideas, studying three new elementary schools in-depth in conjunction with teacher and principal quantitative data collected by the Consortium on Chicago School Research from 1997 to 1999. Kochanek's work applied the relational trust framework to examine the quality of principal leadership. In their interactions with teachers and parents, principals must negotiate within role sets that are characterized by a great deal of power imbalance. As a result, Kochanek found that effective principals had to delicately manage risk and vulnerability in their interactions. When teachers felt vulnerable, effective principals seemed to minimize and manage risk so as to not exacerbate already stressful situations. However, the most effective principals recognized that risk management was not akin to risk aversion—in other words, some high-risk situations are unavoidable, and require principals to help teachers navigate uncertain terrain in the interest of improving their practice, motivating students, and so forth.

Returning to the trust results, a series of quantitative analyses was also conducted from surveys of Chicago teachers from 1991–1997 and student assessment data. The first set of analyses used data from the teacher surveys to examine the association between relational trust and a series of teacher actions over time, (e.g., orientation to innovation, outreach to parents, teacher commitment, and professional community -a composite of the four factors). The empirical results were highly consistent across all four of these measures, showing that schools with strong social ties were better positioned to improve their effectiveness; those lacking such properties had a more difficult time improving in these four areas. In those schools where relational trust grew over a three-year period, positive changes were more likely to be found. Finally, taking into account changes in relational trust over time, student performance in mathematics and reading (which was weaker) improved. However, even though the analyses included performance measures over a three-year period, the results could not be construed as definitive. A more comprehensive and systematic analysis of this over a longer time period can be found in Bryk et al. (2010).

Overall, the field study and quantitative analyses suggest several organizational benefits of relational trust specific to schools. First, school reform often requires dramatic change that puts many different actors at risk, as when low-performing schools are threatened with closure. Relational trust can moderate the sense of vulnerability and uncertainty, as individual administrators, teachers, or parents are not

assumed to hold responsibility for the actions of the collective. Second, high relational trust allows for zones of discretionary decision making; for example, if teachers, parents, and students believe that the administration is acting on their behalf, they may be more willing to go along with change, reducing the costs of conflict negotiations. Third, relational trust reinforces the fulfillment of obligations and expectations (lessening the need for careful monitoring) and increases the visibility of errant actions (minimizing evading responsibilities), all of which help to strengthen opportunities for collective action. Fourth, relational trust helps sustain an ethical imperative within the school community to advance the best interests of the members—in this instance the children; thus constituting a moral resource for school improvement.

2.3 Applying Relational Trust to a High School Intervention

The relational trust work described above was based on research at the elementary level, where the argument was that teacher-student trust operates primarily through teacher-parent trust. As Goddard et al. (2001) show, at the elementary level it is hard to separate empirically the effects of teacher trust in parents from teacher trust in students. In an ideal situation of high relational trust, the teacher and parent would share the same obligations and expectations regarding the child's education. When with their child, parents would affirm and reinforce the same norms, values, and actions taken by the teacher in the classroom. However, if the teacher and parents have low levels of relational trust, parents are unlikely to be in agreement with the expectations and obligations of the teacher for themselves or their children. Similarly when the child is at school, he or she is more likely to hold the same expectations as their parents, which are in conflict with those of the teacher.

Investigating trust relationships with high school students can be especially challenging, and few studies have examined trust in high schools especially among students with their teachers (with some notable exceptions, e.g., Romero (2010); Adams et al. (2009); and Bidwell's theoretical review in 1965). Studying peer group relationships among adolescents (for which there is an extensive literature, see Brown (2004)) does not pose the same complexities as trying to understand adolescent relationships with adults outside of the family. Traditional views of adolescence argued that relationships with parents were more turbulent than in childhood. However, the more recent literature emphasizes continuity and persisting bonds with parents despite changes in the content and form of interactions with them (see Collins and Laursen (2004) on this point). Even though familial relationships may not be riddled with high degrees of conflict, there is considerable consensus that adolescence is a period of identity formation, self-confidence building, and desire for autonomy. The desire of adolescents for autonomy and control, and their perceptions of opportunities in the classroom are often mismatched with the increasing regulatory environments of secondary classrooms, where teachers and

their students follow predetermined curricular content and defined pedagogical activities. This mismatch has been shown to lead to a decline in adolescents' intrinsic motivation and interest in school (Eccles 2004).

What this means with respect to forming relational trust in schools is that adolescents, when engaging in social exchanges with their teachers, parents, and other adults, often do so from a position of more autonomy and agency than elementary students. One cannot assume that adolescents share their parents' expectations and obligations with respect to their education. Developmentally, some students actively resist school rules and negotiate with their teachers for subtle controls of classroom behaviors from grading practices to disciplinary actions (McFarland 2001, 2004). Since adolescence is a time when most youth seek autonomy, and are somewhat skeptical of the intentions of those trying to control them, this could create a predisposition to distrust—adding a level of complexity into social relations with adults.

There are other structural issues that make the formation of relational trust more challenging in high school. High schools are typically much larger than elementary schools, making it difficult to build ties with teachers, especially as schools are typically organized in departments. This means that a student could be interacting on a daily basis with as many as six different teachers in a variety of academic and non-academic venues, including extracurricular activities. A student may be able to form a relationship with a mathematics teacher that she may not be able to build as easily with her English teacher. Adding to this mix is the high school counselor who is likely to interact with as many as 200 to 500 students on topics as critical as college preparation. Trying to establish relational ties among so many students and their counselors on decisions that have high risk, such as choosing a college is undoubtedly challenging.

It is not only scope that makes the problem of establishing relational trust in high schools problematic; the fact that many teachers do not share the same cultural background as their students, especially in schools with high proportions of low-income and minority students is also problematic. Researchers find that trust is most strained in schools serving large proportions of poor students and students of color (Goddard et al. 2009). Compounding the challenges of building ties with adolescents, teachers are likely to encounter problems building ties with their parents especially if they do not share cultural norms and values. While this is also the case at the elementary level, at the high school level students are active agents along with their parents creating a different configuration of ties, allowing for greater opportunities of miscommunication, unshared norms and expectations, and actions that are viewed by only some parties as legitimate.

In elementary school trust research, the outcomes tend to focus on process issues among adults including leadership, cooperation, and instructional change. With respect to the students, the examined outcomes of high trust have for the most part been increases in achievement over time (Bryk and Schneider 2002; Goddard et al. 2009). In high schools, students are often not tested yearly so that monitoring growth in achievement from year to year is not operationally reasonable. On the other hand, one might expect that in high school the effects of higher trust would produce changes in norms and actions such as increases in the numbers of

students aspiring to attend postsecondary school and enrolling in postsecondary school. Focusing on aspirations represents one of the key components of measuring trust—shared expectations; an increase in college attendance represents the second component—obligations or actions. Consequently, when examining the relationship of trust to productivity in high school, it seems more prudent to consider such measures at the school level including graduation rates, and enrollment at two- and four-year institutions.

The evidence on relational trust and how it could potentially lead to changes in expectations and behavior became one of the primary motivations for designing an intervention that could change college enrollment rates, especially of low-income and minority students, who have the requisite knowledge and skills to attend postsecondary school, but who potentially lack the social and economic supports to realize their ambitions. As in the elementary trust research, the target for understanding relationships and how they affect norms and behaviors is organizational. Recognizing that there are particular developmental considerations among adolescents and that the organization of high schools presents another set of challenges, the decision was to begin by working through a small, embedded center designed to assist students in realizing college ambitions, taking into account variations in student knowledge and skills, familial resources, and individual preferences for different types of colleges. Rather than trying to change existing departments or schoolwide practices, the motivation of the intervention was to introduce a new entity that would uniformly affirm shared expectations of college-going and promote actions to further that norm. The assumption is that the activities in this unit would produce externalities—positive social and behavioral spillovers, which are consistent with the diffusion of innovations literature (Frank et al. 2004). Results of the implementation of a specific reform at the high school level show that changes in teacher behavior are frequently facilitated by informal help and conversation between colleagues, rather than through formal, structured professional development.

2.4 What is CAP?

The College Ambition Program employs the principles of relational trust for building shared norms and obligations that result in the realization of college ambitions. The *rationale* for the activities offered by CAP was developed from the results of a major study, the Alfred P. Sloan Study of Youth and Social Development (SSYSD) that followed a cohort of over 1,000 middle and high school students into young adulthood (data collection on the longitudinal sample is continuing). SSYSD was designed to understand the adolescent experience and gathered data from 12 sites across the country. Sites were public middle and high schools located in urban, suburban, and rural communities all across the United States, and were selected to represent, in aggregate, a representative sample (socioeconomically, geographically, ethnically) of youth between the ages of 12 and 18 in the US. Data from in-person interviews, survey questionnaires, and experience sampling method (ESM) devices

were collected in four waves between 1992 and 1997, and included information from students, school personnel, families, and peer groups.

Results from this project highlighted differences in the culture of the schools that were directly tied to social supports and economic resources (ranging from per pupil expenditures to programmatic resources and college preparation activities). One of the key findings of SSYSD was that in schools with higher than average national college-going rates (based on National Center for Education Statistics [NCES] data found in the *Condition of Education* (1993a, 1995a, 1997a) and *Digest of Educational Statistics* 1993b, 1995b, 1997b), there was a college culture reinforced by teachers, counselors, administrators, students, and parents. In these schools, teachers talked about the importance of a college education in their courses even if the subject matter was arts or technical classes. Teachers also discussed steps in the college preparation process—including highlighting vocabulary words, focusing on mathematic principles that students are likely to encounter on college admission tests, and following-up with the students regarding postsecondary plans after graduation. Counselors were also directly engaged with the students, helped to frame college personal essays, wrote letters of recommendation, pointed students to resources on college programs, supplied lists of tutors for help with academic subjects, and provided lists of private consultants to assist with all aspects of the college choice process, including financial aid. Administrators coordinated a series of assemblies for parents on the process and various timelines that were critical for college admission and arranged special visits by college recruiters. The student body was its own publicity machine for college. Discussion took place in lunchrooms, study halls, and extracurricular club meetings and included such topics as who applied where, acceptance rates, college admission test score averages, and how many times to take the college admission tests and the likelihood of increasing one's score by doing so.

In schools with lower than average college attendance rates this was not the case. Teachers often struggled with keeping students in school, excessive absences, and behavioral problems; counselors' time was primarily spent on social and psychological problems of alcohol and drug addictions, unwanted pregnancies, and learning disabilities. There was limited information on college choices, admission test preparation, and financial aid (Schneider and Stevenson 1999; Csikszentmihalyi and Schneider 2000). These results highlighted the huge social support and economic differences that plague many public high schools, especially those serving students in families with limited resources. The students and their parents expected to attain a college education, but the path for getting there was very unlike the one in more advantaged communities.

While it would be ideal to give these schools more resources, in the present economy this seemed unlikely. Moreover, the differences between these two types of schools were not just differences in economic resources. The relational ties among the students, teachers, counselors, parents, and the school were weak, and students and their parents questioned the competence and concern teachers had for the adolescents' future. The question motivating CAP became, "could the school culture be changed by focusing on the relational ties in the school community to create an environment that emphasized postsecondary attendance?" We were concerned that

few changes were likely to occur unless additional resources were tied to social interactions—whether that is professional development or other types of activities that engage teachers or students. A better alternative, it seemed, would be to offer services that other schools have, in the form of interactions that could promote a college-going culture.

With this in mind, CAP was designed to promote a school-wide college-going culture (in schools with lower-than average college-going rates) through mentoring and tutoring, course counseling, providing college visits for students who expect to attend college but may not realize the paths necessary to achieve these ambitions, and offering financial aid advising (Schneider et al. 2012). Recognizing the problem of trying to establish close ties among teachers, especially given the size of high schools (even those that might be considered small, e.g., less than 600 students), the plan was to start with a centralized hub where students could voluntarily come to receive assistance not only in college preparation but tutoring and academic counseling as well.

Acknowledging the importance of role models, and consistent with the adolescent developmental literature (Crosnoe 2009; Rosenbaum 2001), CAP Centers are established in intervention schools. They are open three days a week for six hours, including time after-school. The schedule is designed to be accessible to students and position CAP Centers as an integral part of the school, while not disrupting class attendance during the day. Each CAP Center is monitored by a site coordinator, a graduate student trained to operate the Center, keep up-to-date information on financial aid easily accessible, manage a group of near-age college mentors that provide tutorial assistance, interact with teachers and counselors, organize special college assemblies, and arrange college trips.

All CAP activities are organized on the premise that aligned ambitions—having expectations that are consistent with postsecondary plans and enrollment (Schneider and Stevenson 1999)—involve being able to (a) visualize oneself as a college student, (b) transform interests into realistic actions, and (c) create strategic plans. Prior research suggests many students, especially those in schools serving predominately low-income and minority student populations, have misaligned ambitions, holding misconceptions about college admission requirements, college programs, and financial assistance for the types of fields they are interested in studying in postsecondary school. Moreover, many students not only have misaligned ambitions, they also lack (a) the knowledge and skills in academic subjects that are critical for performing well on college admission tests, and (b) information on what high school courses, grades, and activities they need to be a competitive postsecondary school applicant (McDonough 1997; Riegle-Crumb and Grodsky 2010; Riegle-Crumb 2006). CAP's integrated model of activities is designed to fill many of these academic, social, and financial needs. The idea is that it is not enough to promote ambition and interest in attending college; instead, it is essential to engage in activities that not only make students more competitive applicants but also give them the resources to persist in college and receive a degree. The full scope of CAP activities are detailed on the website; the following briefly describes the rationale behind each of the programmatic components.

2.4.1 Mentoring Model

The classic definition of a mentor is an older more experienced proficient individual who assists the mentee in acquiring social and other complex skills and completing tasks. This is usually accomplished through demonstration, instruction, and encouragement (see Hamilton and Hamilton 2004 for a more comprehensive discussion of the literature on mentoring for adolescents). CAP has taken a somewhat different approach and designed a collective mentoring model using near-age peers. Instead of a student being assigned to a group or a specific mentor, students are encouraged to voluntarily come to the CAP Center where multiple near-age mentors are available to assist them with their academic needs and provide college preparation guidance. Mentors are deliberately recruited from local universities (presently Michigan State University—although new partnerships with other universities in the state are in the process of negotiations) the high school students may consider attending, helping them to visualize what the experience may be like for them.

By recruiting and training mentors in select academic areas, CAP works to afford students with positive and academically sound role models who can both speak about their college experiences first hand and also provide students with tutorial support in their high school courses. These tasks traditionally fall upon the shoulders of school guidance and counseling staffs, which are often overloaded with demands, ranging from monitoring students' academic progress, sustaining their social and emotional well-being, and even monitoring school-wide testing and accountability programs (McDonough 1997). As a result, particularly in schools with higher proportions of at-risk students, students often do not receive consistent interaction focused on preparing for college. CAP mentors aim to address this shortfall with frequent student interaction.

Rather than being assigned to individual students, CAP mentors employ a collective mentoring approach. Mentors are interchangeable, trained to deliver a consistent message about the importance of college and how to prepare for admission. Mentors are also trained not to complete homework assignments, but instead to work with students on a drop-in basis providing the type of help that middle and upper-middle class students receive from private tutors. The idea is to assist students in improving academic performance; the most common subjects that students ask for help with include algebra, biology, chemistry, and physics.

2.4.2 Course Counseling and Advising for Building Relational Trust

Consistent with the principles of relational trust, the intent of CAP is to begin with a small set of strong relational ties, shared expectations, and actions that can carry over into the larger school community. CAP site coordinators are trained to work with school counseling staff, underscoring that the Center is to supplement and act as a resource to the counseling staff. This message is very important to avoid misperceptions that CAP's services may threaten existing staff. Instead, CAP site coordinators

work with the high school counseling staff to advise students on course selections and align selections with particular colleges of interest and the college's recommended curricular requirements. Using the graduation requirement worksheets provided by high school counselors, student transcripts, information on students' academic tracks and individual college course requirements, CAP works with school counselors to help students make more informed decisions about their course selections.

Consistent with CAP's goals of promoting a school-wide college-going culture, students, teachers, and parents are invited to participate in CAP workshops to help them gain a better understanding of topics related to college matriculation. A website available to all students and their parents outlines ten key steps in the college-preparation process: (1) organizing and preparing for the college process; (2) selecting high school courses; (3) paying for college; (4) building an extracurricular resume; (5) preparing for college admission tests; (6) researching colleges; (7) participating in college visits and interviews; (8) crafting a personal college essay; (9) creating the application package; and (10) making a final choice. This information is written in accessible language with an accompanying video module—all designed for students and parents (with a special emphasis on the informational needs of parents who may have never been through the process or may be unfamiliar with some significant changes since they last attended).

2.4.3 College Visits

Once students begin to understand the steps necessary to plan for college, CAP provides a series of college visits to further help them visualize their goals. CAP college visits typically involve taking official campus tours and are arranged and organized by CAP site coordinators. CAP-organized college visits are open to all interested students, with priority going to eleventh and twelfth grade students. In an effort to build the college-going culture within CAP schools college visits get students onto campuses and allow them to experience first-hand a college environment. Before making these trips the students are given special instruction on what to pay attention to, directions for taking notes, and are provided examples of questions to discuss with the college representatives. Students are asked to complete a survey at the end of their college visit experience. What distinguishes the CAP college visit experience is that it is open to all students. Second, all students go through an intensive training before the experience and efforts are made to involve parents in the organized college visit. It is not only the students, but also their families which often have never been on a college campus.

2.4.4 Financial Aid Workshop/Materials

After students have an understanding of the planning it takes to matriculate to college and have visited a college campus, CAP focuses on finance. In partnership with Michigan State University's Financial Aid Office, Lansing Community

College, and school guidance counselors, CAP coordinates and schedules financial aid nights for students and their parents. In the 2011–2012 school year, over 50 families participated in these events that were followed-up with workshops for parents that focused on completing the online Free Application for Federal Student Aid (FAFSA). These workshops are designed to educate both students and their parents about the types of aid available, how to seek aid including scholarships, and fillout FAFSA and other types of loan applications. It is important to emphasize that these workshops are designed to actually work on filling out the forms and include follow-up calls from the CAP site coordinators to learn about the progress of the application process. Additionally, CAP site coordinators work with students at the end of their senior year going over actual college costs and creating a financial plan so that the student can afford to matriculate in the fall. This includes assistance with filling out applications for work study programs, providing tips on how to save money, and discussing resources that are available to ease the financial burden of room and board, computers, books, and other related fees.

2.5 Measuring the Effects of CAP

2.5.1 The Design

The full implementation of CAP began in 2010–2011 with four public Michigan high schools (two treatment schools and two matched comparison schools). The two control schools were subsequently phased into the treatment group in 2011–2012. This process was part of an agreement reached with the high schools for participating as controls in the prior school year. For the 2011–2012 school year, there were four treatment and four matched control schools. In fall 2012 there were seven treatment schools and multiple matched control schools.

2.5.2 The Sample

The CAP sampling strategy was to identify high schools with lower than average college-attendance rates. Initially, to select the participating schools state administrative data, census data, and data from the Common Core of Data (CCD) were used to identify schools that had (a) approximately 30 % or more of their student population eligible for free and reduced lunch, (b) low college completion rates in the geographical location that the high schools served (less than the state average of 26 %), and (c) lower than average 4-year college attendance rates (less than the state average of 71 %). Potential schools in the greater mid-Michigan area that displayed these characteristics were contacted because of their proximity to Michigan State University, an important consideration in reducing transportation costs for staff and mentors, facilitating adequate service provision and monitoring the fidelity of implementation of the intervention. The selection process for the 2012–2013 school

year used new methodologies for strategic sample selection as detailed in Stuart et al. (2011); Hedges and O'Muircheartaigh (in preparation); and Tipton (2011). Essentially, this process allows for a more closely matched covariate balance between treatment and control schools.

2.5.3 Measures

One of the problems in measuring trust has been the use of general trust questions, such as, "I trust my teachers," "Teachers in this school trust each other," or "Teachers respect colleagues who are experts in their craft." While useful at a general level, to learn more specifically about relationships and trust, it is useful to examine: (1) shared expectations of those in the social system; (2) similarity of values regarding actions and sanctions; and (3) actions that reflect the normative value structure. Measuring the nature of interactions including the value and actions individuals engage in provides not only what is perceived as important but whether such values are acted upon. Without matching values to actions, it is difficult to interpret relational strength and its consequences (see Delhey et al. 2011).

The instruments developed for this study were designed to measure components of the services offered by CAP and that could be compared with measures from other national longitudinal research studies. Two primary instruments used are an initial baseline survey and an exit survey administered to the twelfth graders prior to graduation. Survey items include questions about life ambitions, experiences in high school, and postsecondary plans. Contact logs are also maintained that measure time spent by students and the services they took advantage of while in the CAP center. Interview protocols are also used to measure the usefulness of specific activities such as the college visits and financial aid activities.

A teacher survey was developed in 2011–2012 to gauge teacher norms, beliefs, and practices related to college ambition. Teachers were asked a range of questions, such as how often they integrate information about college into their daily lessons, how many letters of recommendation they write for students, how familiar they are with the college search and application process, and the extent to which their school shares a collective vision focused on college attendance for all students. Teachers were also asked to provide names of colleagues with whom they interact most, both in general, and around issues of college support. These sociometric data allow CAP to understand the diffusion process of new beliefs and practices within each building. Information from these teacher surveys and other sources described above allow us to examine how the nature of relationships shape attitudes and actions.

2.5.4 Analysis and Preliminary Results

As explained earlier the outcome of this study is to determine if there was a significant increase in college attendance to four-year institutions from earlier years. As

this was a development project, in that it began with only a small set of treatment and control schools, we used a variety of analyses as we added more schools. Preliminary analyses from the first year of CAP in 2010–2011 indicated that CAP students had higher educational expectations and were more likely to enroll in two- and four-year institutions ($N=415$, $p=.025$) compared with eligible students in similar schools based on a propensity score analysis using data from the Educational Longitudinal Study (ELS: 2002) (Schneider et al. 2012).

In 2011–2012 we examined differences between students who participated in CAP and non-participants in the treatment schools. Findings from the second year show that within the four treatment schools, twelfth grade students who participated in specific CAP activities were more likely than other students to engage in college entrance exam (e.g. ACT, SAT) preparation activities ($F=7.17$, $p=0.01$), fill out the FAFSA ($F=6.36$, $p=0.01$), and take the ACT multiple times to improve their scores ($F=4.59$, $p=0.03$). In another analysis, we conducted a multinomial logistic regression with the outcome of college-going as reported on the senior exit survey (with 0= not going; 1=2-year school; 2=4-year school), conditioning on gender, race, and parents' education level. Students that participated in CAP were significantly more likely to attend a 4-year college than a 2-year college compared to non-participants ($p=0.04$). Four-year college attendance rates for CAP participants were 12 percentage points higher compared to non-participants.

Since CAP is an embedded school-wide intervention, we would expect to see a change in behavior not just for students, but for teachers as well. With respect to the teachers, we have several preliminary findings. Because teacher data collection began in 2011–2012 and only in treatment schools, our current analyses compare differences between rural and urban schools ($N=136$, 82 urban teachers, 54 rural teachers). Nonetheless, we find that teachers in rural schools are more likely to expect that most of their students will attend college than teachers in urban schools ($F=20.29$, $p<0.001$). While quite preliminary, this suggests that urbanicity may have some effect on levels of college ambition among the teaching faculty even in schools of similar socioeconomic backgrounds. Along with comparisons between urban and rural treatment schools, we also conducted a comparison of teacher beliefs in CAP treatment schools with similar measures found in the Schools and Staffing Survey (SASS: 2000–2001). Using a 2-tailed t-test, we find teachers in CAP treatment schools report significantly higher levels of faculty cooperation ($p=0.004$, df=1, s.e.=0.085) and a more unified sense of collective mission ($p<.0001$, df=1, s.e.=0.076) compared to teachers in the SASS sample.

2.6 What These Results Mean for Future Trust Studies

One problem with many school reform efforts is that they fail to take into account the social relationships in schools and how they can impede or encourage change. Reform efforts aimed at teachers, for example, assume a fairly straightforward process of teacher learning, whereby teachers absorb new reform content and implement it

in their practice. Relational trust results show that the quality of social relationships has a key role in facilitating innovation and student achievement (Bryk and Schneider 2002). CAP focuses initially on building social relationships in low-risk situations, with non-threatening near age mentors to create shared norms and actions, with the intent that such activities will spill over into the larger school context and influence other students, teachers, parents, and administrators.

Most standard trust measures are quite general, e.g. "I trust my teacher," "I trust my principal," and so on. These measures fall short of making the connection to specific actions embedded within school role relationships. As we developed our CAP measures, we began with an actionable vision of what relational trust would look like in context. This allowed us to create measures that could be linked to specific behaviors of students, teachers, and parents. For example, rather than simply asking students if they trust their teacher, we asked how often they interacted around college issues, both inside and outside of class. Likewise, along with asking teachers whether their school shared a sense of collective mission around college ambition, we also asked them specifically how often they integrated college into their lessons, or helped students with college materials during and after school. These items give quantifiable information that can be used in our analyses. Future studies of trust need to examine the intricacies inherent in these role relationships, and go beyond surface-level measures of trust.

Our measures of relational trust are obtained from a variety of data sources including field observations and social networks all of which are helping us to perfect future surveys and other forms of data collection. For example, to better understand the effect of college visits, we interviewed students about their experiences on the trip, and how it may have helped them better visualize the college experience. The interviews shed light on which components of college visits may be most effective, which in turn allows us to develop more focused survey measures on this topic. Such mixed approaches contribute to an iterative process of focusing and sharpening our measures of relational trust.

As a form of social capital, relational trust is a resource that takes shape in the interactions among members of the school community (Bryk et al. 2010). It is as a critical resource for many different outcomes. At present, most studies of trust have examined its impact on academic achievement. While this is a critical outcome, it does not capture the full range of benefits inherent in relational trust. Our work with CAP suggests that trust may be a critical factor in increasing college ambition. This suggests many additional possible outcome measures, including postsecondary enrollment and completion, dropout rates, and access to financial aid and scholarships.

In research one often worries about such issues as non-compliant subjects, changes in the composition of the treatment group, and fidelity of implementation of the treatment. Often overlooked are the expectations of the subjects and how these expectations relate to specific actions, and whether such actions are shared with others participating in the treatment. It is not the information, pedagogical techniques, or technology in and of itself that creates a change; it is if the intended subjects perceive the treatment as important, whether it has value beyond one's

personal motivation, and if it is shared and acted upon by multiple actors. If the outcome is going to college, what are the students' expectations and do those expectations match the expectations of family, peers, and teachers and how do these expectations align with actions. Without taking a closer examination of social ties, we will miss how micro-level interactions of students and teachers can affect the outcomes of reform.

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Chapter 3
The Interconnectivity of Trust in Schools

Megan Tschannen-Moran

3.1 Introduction

Trust has been conceptualized as a multidimensional construct that involves both confidence in the other and a willingness to take risks on the part of the trusting party, whether an individual or a group. Specifically, trust is defined as the willingness to be vulnerable to another party based on the confidence that the other party is benevolent, honest, open, reliable, and competent (Hoy and Tschannen-Moran 1999; Tschannen-Moran 2004a). Trust is increasingly recognized as an essential element in high-functioning schools because trust undergirds cooperative behavior. Without trust organizational effectiveness and efficiency is severely hampered (Bryk and Schneider 2002; Tschannen-Moran 2004a; Uline et al. 1998). Thus trust involves specific expectations of role relationships and is seen as a vital ingredient in the work of schools.

In schools, principals, teachers, students, and parents all have expectations that the other parties will behave in ways that are deemed to be right and good. The fulfillment of these expectations over time acts as a resource in times of transition and change (Bryk and Schneider 2002; Mishra 1996). Within the context of schools, trust is considered a normative property that results from multiple social exchanges between members of one group of individuals with members of another group. A number of studies have established that faculty trust varies sufficiently between schools, in comparison to the variability within schools, for it to be considered a property of the school (Forsyth at al. 2011; Tschannen-Moran 2009; Tschannen-Moran and Goddard 2001). Teachers as a group form trusting bonds with various other role groups, including their colleagues, the principal, students, and parents. In like manner, students form collective perceptions of the trustworthiness of teachers, and parents form perceptions of the school.

This chapter explores the interrelationships of trust across five pairings that are relevant to schools: faculty trust in the principal, colleagues, and clients, parent trust

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in schools, and student trust in teachers. While various sets of these relationships have been examined in previous studies, this is the first attempt to examine the interconnectivity of all five. In addition, the extent to which this set of interrelated trust variables works in concert as well as independently to explain variance in student achievement at the elementary, middle school, and high school levels is explored.

3.2 Interconnections Within and Across Role Groups in Schools

3.2.1 Faculty Trust in the Principal

Principals live in glass houses. Like leaders in any organization, they do much of their work in the public eye. Whether they are on stage at an assembly, leading a committee meeting, walking down the hall, or stopping to chat with a student, their actions are under continuous scrutiny. Teachers keep a watchful eye, interpreting the principal's actions to discern whether they will choose to extend their trust. Particularly in the early stages of the relationship, it is vital to teachers to determine whether their principal is trustworthy because they are vulnerable to the organizational authority held by the principal. Principals have at their disposal the means to either reward or punish teachers of whose behavior they approve or disapprove, thus teachers are dependent on the benevolence and fairness of the principal in exercising their essential evaluative role. A principal who is trusted can be the glue that holds a school community together, whereas a principal who is not trusted by faculty can cause teachers to devote their energies to protecting themselves from anticipated harm or redressing ways they have felt wronged (Tschannen-Moran 2004a). A growing body of research attests to the potent impact of these contrasting realities on school outcomes. For example, faculty trust in the principal has been linked to healthy and productive school climates whereas when faculty distrust the principal the climate is likely to become closed and dysfunctional (Hoffman et al. 1994; Hoy et al. 1996; Smith et al. 2001; Tarter et al. 1989, 1995; Tarter and Hoy 1988; Tschannen-Moran 2004a, 2009; Tschannen-Moran et al. 2006).

For principals to earn the trust of their teachers, they must conduct themselves with authenticity and integrity (Tschannen-Moran and Hoy 1998). Authenticity has to do with a willingness to share one's heart, humanity, and foibles with others. Principals who come across as too guarded in what they are willing to reveal about themselves can be perceived as though they are simply playing a role, as in a play, and thus their motivations may be regarded with suspicion. Authenticity also involves a willingness to take responsibility for one's mistakes. It means refraining from blaming others for personal failings as well as from using one's authority to manipulate subordinates. The perceived authenticity of the principal has been correlated to faculty trust in the principal (Hoy and Kupersmith 1985; Hoy and Henderson 1983). Moreover, integrity speaks to the alignment between the principal's

words and deeds, as well as living according to a set of core values or principles. When teachers begin to perceive a discrepancy between their principal's words and actions, suspicion is the likely result. Once school leaders' verbal statements are regarded with suspicion, it will be hard for them to earn or regain trust because language is an essential tool leaders must use to lead and inspire people. Finally, a sense of fairness and fair play is an essential element of integrity, refraining from using one's authority to play favorites or to improve one's personal outcomes.

Principals also win the trust of their faculty through their willingness to extend trust, which is evident through openness in communication and in decision making. When principals withhold information from teachers, it evokes suspicion as teachers wonder what is being hidden and why. Openness in decision making, inviting not only teachers' involvement but influence over organizational decisions that affect them, can create the conditions necessary to foster mutual trust between teachers and principals (Tschannen-Moran 2001). Creating decision-making structures and granting discretion in instructional decisions that rely on teacher expertise and commitment to students builds trust (Bryk and Schneider 2002; Tschannen-Moran 2004a). A collegial leadership style, in which a school leader is perceived to be approachable and open to the ideas of others, has been linked to greater faculty trust in the principal (Tschannen-Moran and Hoy 1998). Subordinates who report a high level of trust in their leader are more likely to have higher levels of confidence in the accuracy of information coming from the leader, a greater desire for interaction with the leader, and greater satisfaction with communication with the leader (Roberts and O'Reilly 1974).

Principals foster the open flow of information coming to them by being open with communication that flows from them (Bryk and Schneider 2002). Teachers who trust their principal are more likely to disclose accurate, relevant, and complete data about problems, as well as to share their thoughts, feelings or ideas for possible solutions (Zand 1997). When high trust allows for candor and the open exchange of information, problems can be disclosed, diagnosed, and corrected before they are compounded. Mistakes are viewed as opportunities for learning and refinement rather than for blame and castigation, resulting in greater openness and honesty in the face of disappointing results. This openness then allows collective problem-finding and problem-solving to characterize the professional dialogue in a school (Hoy and Sweetland 2001; Tschannen-Moran and Hoy 2000; Tschannen-Moran 2004a, 2009). The open communication that high trust environments make possible confers a competitive advantage to organizations in times of turbulence and change (Mishra 1996). Schools where trust is high can help avoid rigidity and a "hunkering down" mentality that organizations often fall victim to in the midst of crisis (Daly 2009). Communication flows more easily and resources are shared rather than hoarded so that they can be allocated in ways that will have the greatest benefit for the survival and flourishing of the organization.

Whether faculty trust their principal also relies heavily on the competence of the principal. For school leaders to cultivate faculty trust involves fostering a compelling collective vision, modeling desired and appropriate behaviors, coaching faculty to align their skills with the school vision, managing organizational resources fairly

and skillfully, and standing ready to mediate the inevitable conflicts that emerge as educators engage in the complex work of schooling (Tschannen-Moran 2004a, 2009). To garner the trust of faculty seems to require that leaders balance the task dimension with the relationship dimension of leadership (Tschannen-Moran 2004a). A leadership style that is narrowly focused on the task dimensions of leadership at the expense of relationships may damage trust in the principal, but so may a leadership style that emphasizes relationships to the detriment of task accomplishment. School leaders with a professional orientation adopt enabling school structures (Adams and Forsyth 2007; Hoy and Sweetland 2001). They do not abuse their power to enforce policies through an over-reliance on coercive punishments, but neither do they abdicate their responsibility for leadership. They engage in coaching and collaboration to bring underperforming teachers into alignment with professional standards, as well as to provide resources to continually extend the professional knowledge of all teachers in their building (Tschannen-Moran 2004a). Reliability in following through on decisions and promises also contributes in substantive ways to faculty trust in the principal.

To meet the challenging new standards that have been set for schools, school personnel must go well beyond minimum performance of their duties, and school leaders need to know what is necessary to foster these extra-role behaviors. Organizational theorists have asserted that transformational leadership behavior on the part of leaders will motivate workers to go beyond their formally prescribed job responsibilities and to give their very best to the task. However, in a study that examined the antecedents of faculty extra-role behaviors, faculty trust in the principal outstripped transformational leadership behaviors as a predictor of organizational citizenship behaviors (Tschannen-Moran 2003). Transformational leadership behaviors have been presumed to inspire followers to greater citizenship, but there was no significant correlation between those behaviors and the organizational citizenship of teachers in the schools studied. Trust alone emerged as an important factor in relation to greater citizenship among teachers. Likewise, faculty trust in principals has been linked to faculty perceptions of both the professional orientation of a principal as well as the professionalism of their colleagues, suggesting that principals set the tone of professionalism and trust in their buildings (Tschannen-Moran 2009).

3.2.2 Faculty Trust in Teacher Colleagues

A generation ago, teaching was described as work that was done primarily in isolation from other adults and in which norms of autonomy and equal status were especially prized (Little 1990). With the reform initiatives of recent decades, including the pressures of the accountability movement and the press for greater professionalism, the work arrangements of teachers have shifted in ways that require greater collaboration (Tschannen-Moran et al. 2000). The hallmarks of professional practice include the deprivitization of practice, reflective dialogue, as well as disciplined, collective inquiry in search of individualized solutions to meet the needs of clients (Cooper 1988; Louis and Kruse 1995; Marks and

Louis 1997; Louis et al. 1996). Participants in professional learning communities continually research best practices to better serve clients. Ongoing, rigorous professional inquiry supports joint deliberation as participants pursue data to bolster decision making (Darling-Hammond 1988; Elmore et al. 1996; Fullan 2003). As schools are moving toward greater alignment with the standards of professionalism, and thus more active collaboration, faculty trust in colleagues is becoming more essential to fulfilling the central mission of schools (Adams and Forsyth 2007; Tschannen-Moran 2001, 2009).

Low trust between teachers presents a significant barrier to the establishment of these new norms of professionalism and collaboration. When teachers do not trust their colleagues, whether due to perceptions of a lack of competence, benevolence, reliability or other factors, they are not likely to feel comfortable putting their own professional practice at risk through shared instructional planning, peer observations, or reflective dialogue. The level of faculty trust in colleagues has been strongly and significantly related to teachers' perceptions of the professionalism of their colleagues. Thus, where teachers trusted one another, they were more likely to respect colleagues as exercising professional judgment and demonstrating a commitment to students; whereas where teachers did not perceive their colleagues as behaving in a professional manner, they were less likely to trust them (Tschannen-Moran 2009; Tschannen-Moran and Hoy 1998). Perceptions of the behavior of their colleagues in ways that influenced trust went beyond teacher professionalism. The degree to which teachers perceived the behavior of their colleagues to be authentic (Tschannen-Moran and Hoy 1998) and the degree to which faculty reported the relationships with their peers to be collegial (Hoy et al. 1992) have both been found to correlate with teacher trust in colleagues.

The quality of the relationships in a school has been related to some important school outcomes. In exploring the extent to which the climate of a school supported innovation, Moolenaar and Sleegers (2010), using social network analysis in a sample of Dutch schools, found that faculty trust in their colleagues was related to the density of work-related conversations, and that trust mediated the relationship between the density of these conversations and the innovative climate of the school. Thus, even where teachers were engaged in active professional dialogue, a spirit of innovation would only prevail when they had trust in one another. If they did not trust each other, the conversations did not lead to a climate of innovation. In addition, the extent to which teachers reported a climate of continuous learning in their school has also been found to correlate with faculty trust in colleagues (Kensler et al. 2009). And in a study of organizational effectiveness, faculty trust in colleagues outstripped the contribution of other variables and was the only variable found to make an independent contribution to explaining variance in faculty perceptions of school effectiveness among the elementary schools studied (Hoy et al. 1992). Each of these processes, innovative climate, continuous learning, and teacher perceptions of organizational effectiveness, is postulated to create the conditions that support student learning. Finally, faculty trust in colleagues has been found to be moderately correlated to student achievement (Tschannen-Moran 2004b).

3.2.3 Teacher Trust in Students and Parents

When teachers trust their students, when they believe that their students are respectful, honest, reliable, open, and competent, they are more likely to create learning environments that facilitate student academic success. When they don't trust their students, it is likely to be evident to students in the guarded tone and generally negative affect that teachers display in the classroom as well as in informal interactions. It may also show up as a lack of warmth or empathy for students and the propensity for teachers to blame students for poor performance or behavior. Furthermore, repeated research studies have found that when teachers do not trust students, they are likewise unlikely to trust their students' parents (Hoy and Tschannen-Moran 2003). And it is likely that teachers' disposition regarding their trust of parents, whether of high or low trust, is equally evident to parents. Thus, the trust that teachers hold toward students and parents is likely to set the tone for these vital relationships.

The level of teacher collaboration with parents, as well as among teachers and with the principal, have all been found to be related to the level of trust in students and parents. In a bivariate correlation, faculty trust in parents was related to collaboration with parents. Furthermore, canonical correlation in which faculty trust in the principal, colleagues, and clients (i.e. students and parents) was regressed on a set of collaboration variables including collaboration with the principal, colleagues, parents, and students, faculty trust in clients was most influential in predicting the set of collaboration variables (Tschannen-Moran 2001).

There is a growing body of research that documents the powerful role that faculty trust in students and parents plays in fostering student achievement in both direct and indirect ways. Studies in a variety of contexts have consistently found that faculty trust in students makes an important contribution to students' academic achievement. In a decade-long study of Chicago public schools engaged in reform initiatives, Bryk and Schneider (2002) concluded that trust was a critical factor in predicting which schools would make the greatest gains in student achievement and which would sustain those gains over time. In addition, in a study of middle schools in a southeastern state, faculty trust in clients was found to be strongly related to student achievement on state tests in both English and math (Tschannen-Moran 2004b). In this study, the proportion of students receiving free and reduced price lunch was inversely correlated to faculty trust in clients and faculty trust in colleagues, but was not related to faculty trust in the principal.

The powerful role that socioeconomic status (SES) of students plays as a predictor of student success in schools has been well documented over the past 50 years. Educational researchers have searched diligently for school factors that predict achievement outcomes above and beyond the effects of SES. And yet, faculty trust in students and its close correlates have been found to do just that. Studies have demonstrated a substantial relationship between faculty trust in clients and student achievement, even when the impact of socioeconomic status was held constant (Goddard et al. 2001, 2009; Hoy 2002; Hoy and Tschannen-Moran 1999). In

addition, the collective efficacy of the faculty, that is, the shared belief among the faculty of a school that they have the capability to facilitate successful outcomes for all of their students, influences the effort that teachers invest in preparing for and delivering instruction as well as the extent to which teachers persist in finding new instructional strategies for students who are struggling. In a sample of urban elementary schools, collective teacher efficacy predicted between-school variation in teacher trust in students and the strength of the relation between collective efficacy and trust diminished very little even when SES, race, and past achievement were added as predictors (Tschannen-Moran and Goddard 2001). Furthermore, collective teacher efficacy has repeatedly been found to be related to student achievement even when school SES, minority composition, and past achievement were held constant (Goddard 2001; Goddard et al. 2000a, 2001; Tschannen-Moran and Barr 2004). In addition, when teachers trust their students, there is also likely to be a stronger press for high academic achievement, and academic press has also been found to predict student achievement, even when controlling for SES (Goddard et al. 2000b; Hoy et al. 1998; Lee and Bryk 1989; Lee and Smith 1999; Tschannen-Moran et al. 2006). Moreover, faculty trust in clients, collective teacher efficacy, and academic press are so closely linked and such potent predictors of student achievement, that together they have been framed as a composite variable called Academic Optimism (Hoy et al. 2006; Kirby and DiPaola 2011; McGuigan and Hoy 2006; Smith et al. 2001). Together, these three variables consistently do what few variables examined by educational researchers have done, and that is to explain student achievement above and beyond the influence of student socioeconomic status.

These studies offer new insight into the importance of teacher trust to student learning. The evidence is strong that faculty trust makes schools better places for students to learn. When teachers believe their students are respectful and honest, competent and reliable, they create learning environments that facilitate student academic success. Because of the tendency for 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 and students that could further impair student achievement. As teachers learn better how to cultivate high-trust learning environments in their schools, student success is likely to follow.

3.2.4 Parent Trust in Schools

Researchers and policy makers alike have increasingly recognized the importance of relationships that connect families and schools. In exploring the factors that influence parents' involvement, specifically those from economically distressed circumstances, relational school factors have been found to have a major impact (Henderson and Mapp 2002; Mapp 2003). Parents' desire to be involved in children's education is enhanced when teachers and principals recognize parents as

partners in the educational development of their children. When the school community welcomes parents into the school, fosters caring and trusting relationships with parents, honors their participation, and connects with parents through a focus on the children and their learning, parents are more likely to be involved (Henderson and Mapp 2002, p. 45). As clients in the care of professionals, parents expect thorough assessment of their child's needs, an array of intervention strategies tailored to the individual student, decisions based on evidence, as well as reliability, consistency, and even-handedness in dealings with their child (Cooper 1988, pp. 48–49).

When exploring whether parent trust could be considered a property of schools, Adams, Forsyth, and Mitchell (2009) confirmed that it varied sufficiently from school to school to be considered a property of schools. Whether parents perceived that they had a voice and could influence school decisions and whether their children felt a sense of belonging at school influenced parents' trust in the school to a much greater extent than contextual conditions such as poverty status, school size, diverse ethnic composition, and school level. This suggests that school leaders can build and sustain parent trust by aligning policies and practices to be responsive to the needs of parents and to reduce the sense of vulnerability they perceived in the parent-school relationship.

A number of studies have suggested that strong school-family relationships matter to student achievement (Conway and Houtenville 2008; Henderson and Mapp 2002; Jeynes 2005). Evidence further suggests that parental participation at school can positively impact student achievement even after the cognitive ability of the students and socioeconomic status of the families have been factored in (Epstein 1988; Mapp 2003; Purkey and Smith 1983; Westat and Policy Studies Associates 2001). In a meta-analysis on research on parental involvement in middle schools, Hill and Tyson (2009) found that while almost all forms of parental involvement were positively associated with achievement, strategies reflecting academic socialization had the strongest positive association with achievement. The authors suggested that this form of socialization is consistent with the developmental stage and tasks of adolescence. Similarly, Adams (2010) labeled this form of socialization as "home academic emphasis" and found that where there was a strong emphasis on academics at home, students were much more likely to trust teachers. Further, he asserted that the "interaction patterns between parents and students were largely a function of parent orientation, not school membership" (p. 274).

Schools serving increasingly diverse student populations may have to work especially hard to cultivate trust with parents. In an urban elementary school serving a largely Latino student population, Peña (2000) found that parent involvement was heavily influenced by the attitudes of school staff. She emphasized the importance of school staff being welcoming and taking the time to gain the trust of parents and to inform them of how they could be involved. School personnel communicated respect and benevolence when they worked to find ways around the many barriers to parent involvement, such as the availability of childcare, language differences, and cultural influences that colored parents' expectations

of how they should interact with school personnel. In addition, fostering trust was especially important for parents whose educational level was below that of the teachers.

3.2.5 Student Trust in Teachers

Finally, the importance of student trust in teachers is also supported by a compelling evidence base. Learning involves risk and vulnerability, and much of what inspires children to invest the effort required in learning happens in the interpersonal space between student and teacher. Thus, the relationships of trust between teachers and students are at the heart of the learning enterprise of schools. When students trust their teachers, a climate of safety and warmth prevails which facilitates learning. Conversely, when distrust prevails, students are motivated to minimize their vulnerability by adopting self-protective stances. The result is disengagement from the educational process. Safety comes at the expense of student investment in the learning process.

Listening to students' voices provides an interesting perspective on the development of trust between students and their teachers. In a qualitative study of urban youth involved in a multi-year intervention to support their enrollment and success in higher education, students reported that they tested the benevolence and trustworthiness of the adults in the program before they were willing to let down their guard and begin to trust them (Owens and Johnson 2009). Once trust was established, the students began to cooperate with the program structure, to demonstrate leadership within program activities, and to promote the program among their friends and family members. In addition, a study that used mixed-methods including interviews and surveys with teachers and discipline-referred students supported the association between cooperative or defiant behavior and the adolescents' perceptions of their teachers as trustworthy authority figures (Gregory and Ripski 2008). Teachers may earn the trust and cooperation of students if they use relationship-building strategies and persist in their attempts to foster trust even when students initially test their good will with defiance.

When trust between teachers and students breaks down or fails to develop in the first place, a number of problems arise. Not only is there insufficient safety to support the kinds of risk-taking necessary to learn new skills but teachers may resort to more rigid forms of discipline and control as well as the use of extrinsic rewards. Teachers who do not trust their students are likely to rely on inflexible rules and treat students as a unit rather than as individuals. When coercive actions are used to force compliance, student alienation is likely. In contrast, extending trust is likely to elicit instructional practices and behaviors based on attraction, engagement, and identification (Adams 2010, pp. 264–265).

Student trust in teachers has consistently been found to be strongly related to student achievement across a variety of contexts (Adams 2010; Lee 2007; Mitchel et al. 2010, 2008; Tschannen-Moran et al. in press). Students' trust has

an influence on student achievement through its relationship to other potent variables, such as student identification with school, student perceptions of academic press, and safety. When students trust teachers and believe that they have their best interest at heart, they will be more likely to identify with school, to value school and school-related outcomes, and to feel that they belong (Tschannen-Moran et al. in press; Mitchell et al. 2010). Moreover, Mitchell, Forsyth, and Robinson (2008) found that student trust of principal and parent trust of schools were stronger predictors of student identification with school than SES. Student trust in teachers has also been found to be related to their perceptions of academic press in their schools (Tschannen-Moran et al. in press). And among middle school students in Korea, student trust was found to be related to student motivation and adjustment to school, as well as academic performance (Lee 2007). The student-teacher trust relationship contributed both directly to students' performance and indirectly through school adjustment and academic motivation. Although student trust, student identification with schools, and student perceptions of academic press were all significant predictors of student achievement, in a regression analysis student trust was the strongest (Tschannen-Moran et al. in press). Furthermore, student trust in teachers has also been found to be related to students' feelings of safety (Mitchell et al. 2010, 2008) as well as to student attendance (Moore 2010). When students had low trust in their teachers and school leaders, they felt less safe at school and their attendance suffered.

Student trust of teachers was positively correlated with student identification with school as well as with student perception of safety (Mitchell et al. 2010). All three variables, student trust in teachers, student identification with school, and student perceptions of safety, declined as students progressed from elementary to middle school and on to high school. In a hierarchical regression, student trust of teachers made the most substantial contribution to the explanation of identification with school while student perceptions of school safety made a smaller contribution.

The relationships between teachers and students are reciprocal. Thus, when teachers trust their students, students are more likely to trust them in return (Moore 2010). Faculty trust in students and student trust in teachers are reciprocal processes; a growing body of research evidence attests to the importance of each. Educators would do well to attend to the dynamics of trust in the classroom because trust hits schools in their bottom line—student achievement (Tschannen-Moran et al. in press; Howes and Ritchie 2002; Mitchell et al. 2010; Moore 2010).

3.2.6 Summary

Trust is increasingly recognized as an essential element in high functioning schools. The research reported here reports the link between trust and school effectiveness, collaboration, collective efficacy, organizational citizenship, and teacher professionalism. Fostering trust has been related to the authenticity, collegial and considerate behaviors of principals, as well as adopting a welcoming

stance towards parents. Moreover, the relationships of trust between students and their teachers are powerfully related to student safety, identification with school, and achievement.

Based on the previous research on trust among teachers, parents, and students, three hypotheses guided this study. These were:

H1: Faculty trust in administrators, colleagues, and clients, parent trust in the school, and student trust in teachers will all be significantly and positively related to one another.

H2: Faculty trust in administrators, colleagues, and clients, parent trust in the school, and student trust in teachers will each be significantly and positively related to student achievement.

H3: Faculty trust in administrators, colleagues, and clients, parent trust in the school, and student trust in teachers will collectively explain a significant amount of the variance in student achievement.

3.3 Method

In order to test the hypotheses that faculty, parent, and student trust would be related to one another and that individually and collectively they would predict student achievement, I conducted a correlational analysis and multiple regression. Survey data were collected from two school districts, one urban and the other suburban, in a mid-Atlantic state. This section describes the participants, measures, data collection, and methods of analysis.

3.3.1 Participants

Data from 64 elementary, middle, and high schools in two school districts formed the basis of this study. The urban district included 35 elementary schools, 9 middle schools, and 5 high schools, while the suburban district consisted of 9 elementary schools, 3 middle schools, and 3 high schools. Since the school was the unit of analysis, data were aggregated to the school level. Forsyth, Adams, and Hoy (2011) have argued that trust can be considered a normative property of schools, and have offered statistical analyses demonstrating that there is sufficient variance in trust between schools (as compared to variability within schools) to justify this level of analysis.

The school scores were based on the responses of 3,215 teachers (2,581 from the urban schools, and 634 from the suburban schools) and 2,959 parents (1,867 urban + 1,092 suburban), nested within the 64 schools. All schools levels were well represented among the participants in both the faculty, parent, and student surveys (See Table 3.1). Surveys were anonymous, and demographic data on the gender and ethnicity of the respondents were not collected. Student scores were limited to

Table 3.1 Participation by level

	Context	Faculty participants	Parent participants	Student participants	Totals
Elementary Schools	Suburban	332	363		695
	Urban	1,389	1,004	4,778	7,171
Middle Schools	Suburban	121	263		384
	Urban	595	320	2,048	2,963
High Schools	Suburban	181	466		647
	Urban	597	543	1,430	2,570
Total Participants		3,215	2,959	8,256	14,430

the students from the 49 schools in the urban district. The school scores for these 49 schools were based on the responses of 8,256 students in grades 3–12. Data on gender were not collected, however, the ethnicity reported by students in the sample was 71.8% African American and 28.2% Caucasian.

3.3.2 Measures

Data were gathered using surveys to assess the trust perceptions of teachers, parents, and students. The measures of trust used in this study were developed based on the definition of trust as one party's willingness to be vulnerable to another party based on the confidence that the latter party is benevolent, honest, open, reliable, and competent (Tschannen-Moran and Hoy 2000). The response set was a five-point Likert scale anchored at (5) Strongly Agree, (4) Agree, (3) Neutral, (2) Disagree, and (1) Strongly Disagree. Student achievement was assessed using state standardized assessments. Participation in this study was voluntary.

3.3.2.1 Faculty Trust in Principal, Colleagues, and Clients

This study assessed faculty trust using the *Faculty Trust Scales (FTS)*. The *FTS* captures teacher trust in four important consistencies within the school: the principal, colleagues, students, and parents. Statistical analysis, however, demonstrated that teachers' perceptions of trust in students were statistically indistinguishable from their trust in parents so these two subscales were collapsed into one, which was labeled *Trust in Clients* (Hoy and Tschannen-Moran 2003). The *FTS* consists of 26 items divided between three subscales. *Faculty Trust in the Principal* subscale consists of eight items. Three of the items were negatively worded and consequently were reverse-coded. In the current sample, the alpha coefficient of reliability for this subscale was 0.98. Sample items include:

- The principal of this school typically acts with the best interest of the teachers in mind.
- Teachers in this school can rely on the principal.

The *Faculty Trust in Colleagues* subscale contained eight items. In the current sample, the alpha coefficient of reliability for this subscale was 0.87. Sample items include:

- Teachers in this school have faith in the integrity of their colleagues.
- Even in difficult situations, teachers in this school can depend on each other.

The *Faculty Trust in Clients* (students and parents) subscale included 9 items. In the current sample, the alpha coefficient of reliability for this subscale was 0.97. Sample items include:

- Students in this school are reliable.
- Teachers can count on parental support.

3.3.2.2 Parent Trust in Schools

The measure used in this study was an adaptation of a ten-item measure developed by Forsyth, Adams, and Barnes (2002). Two of the 10 items were taken directly from the Forsyth and Adams measure, while the remaining eight were close adaptations. A factor analysis of this measure among the urban schools in this sample found that all ten items formed a single factor (Pennycuff 2009). The reliability for this measure using Cronbach's Alpha was 0.98. Sample items include:

- This school has high standards for all kids.
- This school keeps me well informed.

3.3.2.3 Student Trust in Teachers

The *Student Trust in Teachers Scale* consisted of 10 items that were taken from the scale developed by Adams and Forsyth (2009). This scale had a Cronbach alpha reliability score of 0.93. Sample items on this scale include:

- Teachers are always ready to help.
- Teachers at this school are always honest with me.

3.3.2.4 Student Achievement

School math and English achievement were operationalized as standardized scores taken on state-mandated criterion referenced achievement tests for grades 3–8 and end-of-course tests at the high school level. Student performance is scored on a scale of 0–600 with 400 representing the minimum level of acceptable proficiency and 500 representing advanced proficiency. Student scaled scores for math and reading were averaged to produce a school score.

3.3.3 Data Collection

Data collection in the urban district made use of scannable paper surveys, while in the suburban district data were collected electronically using Survey Monkey. In the urban district, faculty surveys were administered during faculty meetings at each school to ensure broad representation of faculty and staff. Surveys were delivered to each of the 49 schools by central office personnel and picked up at a later date. In the suburban district, teachers and building-level staff in all 15 buildings were sent email invitations that provided them with the hyperlink to the survey and the password to complete the survey.

In the urban district, the parent survey measuring parents' trust in schools was sent home with all students to deliver to their parents. Stamped envelopes were provided for parents to return the surveys through the mail. In the suburban district, all parents were given the opportunity to participate in the study, with the option to complete the survey electronically or to complete a paper version of the survey. All but three of the participating parents opted for the electronic version. Parents in both districts were directed to complete the survey in reference to the school that their oldest student in the district attended.

The student survey measuring students' trust in teachers was distributed to randomly-selected homerooms representing about 50 % of the students in grades 3–12 in the urban school district.

3.3.4 Data Analysis

First, descriptive statistics were run to ensure sufficient variability among the school-level variables. Then, to test the hypotheses that faculty trust in the principal, in colleagues, and in clients would be related to one another as well as to parent and student trust, bivariate Pearson Product Moment correlations were conducted. In addition, correlations were run to analyze the extent to which each of the trust variables were related to student achievement. Finally, multiple regression analysis was conducted to assess the collective impact of the trust variables in explaining variance in a composite measure of math and reading student achievement.

3.4 Results

3.4.1 Descriptive Statistics

An analysis of the descriptive statistics found that the range of school-level trust scores varied between 1.50 and 2.85 points, with standard deviations that ranged from 0.43 to 0.66. This demonstrated that trust scores varied between the schools in

Table 3.2 Descriptive statistics

	N	Min	Max	Mean	SD
Faculty Trust in Principal	64	2.92	5.77	4.30	.66
Faculty Trust in Colleagues	64	3.72	5.63	4.59	0.43
Faculty Trust in Students	64	2.84	5.14	3.88	0.56
Parent Trust in Schools	64	3.56	5.47	4.32	0.48
Student Trust in Teachers	49	3.00	4.50	3.84	0.44
Student Achievement	64	420.78	529.60	471.87	26.90

Table 3.3 Correlation table for trust and achievement variables

	2	3	4	5	6
Faculty Trust in Principal	0.74**	0.53**	0.51**	0.26	0.43**
Faculty Trust in Colleagues		0.78**	0.72**	0.43**	0.68**
Faculty Trust in Clients			0.83**	0.64**	0.88**
Parent Trust				0.80**	0.79**
Student Trust					0.77**
Student Achievement					

*$p<0.05$; **$p<0.01$

this sample. The composite student scores also varied, with a range of 108.82 points and a standard deviation of 26.90 points. See Table 3.2 for specific results.

3.4.2 Correlational Analysis

The trust that teachers hold for their principal was strongly related to the extent to which teachers trusted one another ($r=0.74$, $p<0.01$), suggesting that trust among the adults in a school is somewhat generalized. Faculty trust in the principal was also moderately related to faculty trust in clients ($r=0.53$, $p<0.01$). This suggests that when principals are trustworthy, they set a tone that extends to teachers' perceptions of students and parents. It is interesting that the perceptions of their principal as trustworthy were also related to parents' perceptions of the trust in the school ($r=0.51$, $p<0.01$). Faculty trust in the principal, however, was not related to the level of trust students had in their teachers.

Faculty trust in their colleagues was strongly related to the level of trust in students and parents ($r=0.78$, $p<0.01$). The level of faculty trust in colleagues was also strongly related to the level of parent trust in the school ($r=0.72$, $p<0.01$) and moderately related to student trust in teachers ($r=0.43$, $p<0.01$). Faculty trust in their students and parents was reciprocated by parent trust in the school ($r=0.83$, $p<0.01$) as well as by students trust ($r=0.64$, $p<0.01$). As might be expected, parent trust in the school and student trust in teachers were strongly related ($r=0.80$, $p<0.01$). See Table 3.3.

Trust across all role groups was significantly related to student achievement. While it was important that teachers trust one another ($r=0.68$, $p<0.01$) and their

Table 3.4 Multiple regression analysis of trust variables and student achievement

Perception	Student achievement composite				
	b	SE_b	B	*t(103)*	
Faculty Trust in Principal	−3.53	4.31	−0.08	−0.819	0.417
Faculty Trust in Colleagues	8.537	8.88	0.119	0.961	0.342
Faculty Trust in Clients	22.138	6.874	0.416	3.22***	0.002
Parent Trust	20.388	13.64	0.205	1.495	0.142
Student Trust	17.100	6.921	0.305	2.471*	0.018

$F(5,43)=29.66$***, $R^2=0.78$, adjusted $R^2=0.75$
*$p<0.05$; **$p<0.01$; ***$p<0.001$

administrators ($r=0.43$, $p<0.01$), the aspect of faculty trust most strongly related to student achievement was teachers' trust in their students and parents ($r=0.88$, $p<0.01$). Also strongly related to student achievement were parent trust in the school ($r=0.79$, $p<0.01$), and student trust in teachers ($r=0.77$, $p<0.01$). See Table 3.3.

3.4.3 Multiple Regression

Given the compelling evidence of the strong intercorrelations of the various aspects of trust between different referent groups, I next wanted to see the combined contribution of the set of trust variables to explaining a composite measure of student achievement in reading and math. A multiple regression analysis revealed that the set of trust variables explained 78% of the variance of student achievement. Furthermore, two variables made strong independent contributions to explaining that variance. Those were teacher trust in clients ($B=3.22$, $p<0.001$) and student trust in teachers ($B=2.47$, $p<0.05$). See Table 3.4.

3.5 Discussion

The first hypothesis, that faculty trust in principal, colleagues, and clients, parent trust in the school, as well as student trust in teachers would all be significantly and positively related to one another, was largely confirmed. All of the intercorrelations were significantly related with the exception of one. The level of faculty trust in the principal was not related to the level of student trust in teachers. Many of these relationships were particularly strong. It is not surprising that parent trust in schools was strongly related to student trust in teachers because parents likely base much of their sense of trust on the input they receive from their children regarding their experiences in school. Where students perceive that their teachers are benevolent, honest, open, reliable, and competent, their parents are also likely to extend trust to school personnel. Where students do not feel they can trust their teachers, parents are likely to regard the school with suspicion. It was noteworthy, however, that faculty trust in clients was strongly related to both parent trust in schools and student

trust in teachers. This speaks to a strong element of reciprocity in the teacher-student relationship that extends to parents' perceptions as well. When teachers do not trust their students, where the cultural values of students and parents are perceived to be sufficiently at odds with the values of teachers that the teachers interact with guarded suspicion or even fear, it is likely to be obvious to the students and their parents. In schools where teachers tend to hold these views, they are not likely to be regarded as benevolent, open, reliable, or competent by students and parents.

That faculty trust in principal was related to faculty trust in colleagues speaks to a tone set by administrators that influences the climate of the school. Where trust in the administrator is low, trust in colleagues is likely to suffer as well. Conversely, where the principal has established high trust relationships, teachers are more likely to perceive that they can trust their colleagues as well. It is interesting and important that both faculty trust in the principal and trust in colleagues are related to faculty trust in students. This is a role group that is not necessarily tied to the relationship among the adults in a school building, and yet the evidence from this study suggests that where the adults trust one another, they are more likely to extend trust to their students as well. Moreover, where distrust characterizes the relationships among the adults in a school, the trust between teachers and students is likely to suffer as well.

The second hypothesis, that faculty trust in principal, colleagues, and clients, parent trust in the school, and student trust in teachers would each be significantly and positively related to student achievement was also confirmed. All five aspects of trust in schools were found to be significantly and positively related to a composite measure of student achievement scores in reading and math. The strength of the correlations, ranging from 0.43 to 0.88, demonstrate that trust is not a "nice to have" feature of school climate—it is an essential element of productive schools. When a culture of trust pervaded the schools in this study, where teachers trusted their administrators, their colleagues, and their students, achievement was higher. Faculty trust was not the only driver of positive outcomes identified in this study, however. Students who trusted their teachers learned more, posting higher student achievement scores. And even parent trust was related to more positive outcomes for students on state-mandated tests. The schools in this study included both urban and suburban schools as well as schools at the elementary, middle, and high school levels, suggesting that trust is important across a variety of school contexts.

The third hypothesis, that faculty in principal, colleagues, and clients, parent trust in the school, and student trust in teachers would collectively explain a significant amount of the variance in student achievement was also confirmed. That 78% of the variance in student achievement could be explained by this set of trust variables is powerful evidence that trust matters in schools. Few other variables examined by educational researchers come close to this level of predictive power. The non-significant beta weights for faculty trust in principal and in colleagues suggest that the portion of these variables that contributed to the bivariate correlations with student achievement was largely variance that was shared with faculty trust in students. Recall that faculty trust in clients was correlated with faculty trust in administrators at $r = .53$ and with faculty trust in colleagues at $r = 0.78$. Similarly,

the proportion of student achievement explained by parent trust in schools revealed in the bivariate correlation was apparently primarily variance that was shared with student trust in teachers ($r = 0.80$). Interestingly, parent trust in schools shared a large proportion of variance with teacher trust in clients ($r = 0.83$), so that may also have contributed to its non-significant beta weight in the presence of the set of trust variables.

3.6 Implications

3.6.1 Implications for Practice

The implications from these findings are far reaching for the practice of school leadership. With 75% of the variance in student achievement explained by the set of trust variables, it seems clear that schools will find it nearly impossible to fulfill their essential mission unless they establish a climate of trust within and between the various role groups within the school. Central to this climate is fostering mutual trust between teachers and students. School leaders should be alert for signs of teacher aggression and have effective means of intervention when signs of teacher distrust in students surfaces, whether as isolated cases or as a more generalized climate of distrust.

The findings of this research also suggest the importance of principals earning the trust of their faculty. They can earn this trust by extending a sense of care for the teachers and staff of their schools, not just for the instrumental role they serve within the school but also as human beings. They must demonstrate authenticity, by taking responsibility for their actions, resist blaming others for their mistakes, and avoid abusing their authority through manipulation. Furthermore, they must let their personality and passion for their work find expression, so that they come across as being "real" and not simply as an organizational actor playing a role. In addition, administrators who wish to receive trust would do well to extend trust by being open with information, including teachers in decisions that affect them, and sharing power by delegating without micromanaging. They must also be scrupulously honest in all their dealings, even (and perhaps especially) when standards of propriety require confidentiality in ways that limit openness. Principals are more likely to be trusted when they are approachable and demonstrate openness to ideas and suggestions made by teachers, staff, parents, and even students. In order to foster trust, principals must be competent in their duties as both instructional leaders and managers of the organization and reliable in their follow-through on promises. The principal must create sufficient trust that teachers feel comfortable in disclosing difficulties as they arise so that problems can be addressed when they are manageable, not hidden until they become too severe to hide. School leaders should be alert to symptoms of distrust and have strategies for rebuilding trust that has been damaged.

The growing body of research on trust in schools makes clear that school leaders need to be knowledgeable in matters of trust. They need to know that the time

it takes to establish and maintain trusting relationships is time well spent because it helps create the conditions necessary for schools to meet their goals. In order to garner the trust of their faculties, principals must be trustworthy in their own actions, demonstrating an unfailing ethic of care as well as the highest integrity in all their dealings. Principals must also work to create the conditions for faculty trust to develop. The findings of this study suggest that when principals are trustworthy, they set a tone that influences how teachers relate to one another, and that where teachers are trustworthy with one another, they are more likely to extend that trust to their students.

For schools to fulfill their duty to students, a context that is responsive to student needs must be cultivated. This will necessitate that leaders strengthen the norms, attitudes, and values of teachers so that leaders can trust teachers and grant them discretion as professionals. This study provides strong evidence that creating conditions that strengthen faculty trust in students and parents will pay dividends in student achievement. There is also evidence that cultivating student trust in teachers is likely to lead to greater student identification and engagement with school (Tschannen-Moran et al. in press; Mitchell et al. 2010). Without trust, students will seek to minimize their vulnerability, resulting in 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 could further impair student achievement.

Teachers, as well as students and parents, will look to school leaders for competence in navigating conflict skillfully (Cosner 2009; Tschannen-Moran 2004a). Competence in school leadership requires not only inspiring teachers in their commitment to students but also challenging and supporting teachers who fall short in their duty to improve their instructional practice. Adopting a trusting stance is not the same thing as taking a lax orientation where teachers are not held accountable in their responsibilities to students. Principals must address instances of unprofessional or untrustworthy behavior on the part of teachers in a proactive but respectful manner in order to foster strong collegial relationships between teachers. Coaching teachers through new expectations and providing professional development to assist teachers in resolving the inevitable conflicts inherent in joint work will assist teachers in fostering the strong relationships that undergird collaboration and a professional orientation in schools.

If schools are to garner the benefits of greater trust among the faculty and students, fostering a trusting work environment through trustworthy leadership on the part of principals is an important place to start. The behavior of principals plays a critical role in setting the tone of trust within a school. Thus, it is imperative that principal preparation programs alert prospective school leaders to the essential role that trust plays in the success of their schools. These fledgling school leaders should be taught to focus on the development of trust as a crucial component of leadership. Prospective principals should be taught the importance of these skills during their preservice training and have these skills reinforced in ongoing professional

development throughout their careers. Leadership coaching is a particularly powerful form of professional development as it can assist school leaders to navigate the complexities of their particular situations. Trust, as an important element of the expressive functions of schools, contributes substantially to school effectiveness (Uline et al. 1998). School leaders would do well, then, to be equipped to cultivate trust in their schools.

3.6.2 Directions for Future Research

The findings of this study open new avenues for research on the dynamics of trust in schools. There is a growing interest in the importance of trust in interpersonal relationships to well-functioning organizations and the literature of trust in schools continues to grow. The groundwork laid to date provides a rich foundation for future scholarship on trust in schools. A number of directions for future research emerge from this current study. We need greater clarity to understand the dynamics that foster trust. Teachers are dependent on principals, but so too are principals dependent on teachers; it is the interdependency that makes both parties vulnerable and in need of trusting relationships. An understanding of the conditions and processes that enable teachers and administrators to learn to trust and cooperate is critical as schools increasingly are faced with the volatility of changing expectations. To what extent is faculty trust in the principal and colleagues related to teachers' propensity to innovate and take risks? To what extent is faculty trust in the principal related to the collective teacher efficacy beliefs of a school faculty?

We would do well to continue to build on the knowledge base of trust in situations of reform and organizational change. We need to know more about the mechanisms for building initial trust, whether a school leader is entering a building where heretofore trust has been low or whether the principal is assuming leadership of a high-trust learning community. How does a principal build trust in a school turnaround or a school in distress? How does a new principal foster trust when following on the heels of a well-loved principal? Longitudinal studies of the formation of trust in schools would be useful.

One of the most serious issues that most schools face may be the problem of broken trust. When trust is broken between administrators and teachers, suspicion and psychological withdrawal are likely to result. When trust is broken between teachers and students, a cycle of punishment and withdrawal or rebellion may result, setting up a dynamic that is deleterious to cognitive and social-emotional development of students. Both administrators and teachers would do well to be aware of the dramatic costs of broken trust and use that knowledge to encourage openness and cooperation and to prevent the abuse of power. What school conditions produce such knowledge? How can such knowledge be transformed into positive outcomes? The process of repairing broken trust is difficult and costly. Studies that examine the process of rebuilding broken trust in schools are essential if we are to begin to break through the barriers of building more trusting school cultures.

Faculty trust in principals and in colleagues are important elements of organizational life, but they represent only part of the complex of trust relationships found in schools. The reciprocal trust between teachers and students has not received adequate attention. Similarly, the trust between teachers and parents, and between administrators and parents have been virtually ignored. For example, to what extent is faculty trust in clients reciprocated by students and their parents, and how is it related to communication, collaboration, and cooperation with parents? Furthermore, educators and researchers need to understand more about the mechanisms that link trust and achievement. We need further exploration not only of how trust relationships among teachers, parents, and students relate to risk taking inherent in learning but also of how they influence persistence and effort. Teachers' self-efficacy beliefs may be hampered in a climate of distrust. Teachers' level of trust in relation to their classroom management strategies and their attitudes about student control also seem promising avenues to explore in understanding the link between trust and achievement. Researchers need to work vigorously to unlock the secrets of trust in school settings.

3.7 Conclusion

Clearly, trust is a salient aspect of school life. It is an important end-in-itself but it is also related to other important organizational outcomes. School leaders and those who prepare future school leaders would do well to attend to the growing body of research suggesting the importance of cultivating teacher-student trust in schools. Developing strategies for fostering deeper trust, especially in multi-cultural and low-income environments where trust may be more challenging, are crucial skills for those who would lead schools in our increasingly diverse society. Scholars, too, would do well to attend to issues of trust as they explore the conditions that foster school success. Schools are likely to benefit from a greater understanding of the dynamics of and consequences of trust in schools. For schools to live up to the aspirations that we have for them, they will need to function as high-trust organizations.

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Chapter 4
Organizational Predictability, the School Principal, and Achievement

Patrick B. Forsyth and Curt M. Adams

4.1 Introduction

The rise of the human relations movement in the first half of the twentieth Century brought with it an intense interest in the idea of cooperation necessitated by the coordination of the modern, departmentalized organization. Most notorious, of course, was the classic treatise of executive function offered by AT & T chairman Chester I. Barnard, who claims that the creative function is the essence of leadership.

> This is the coalescence that carries 'conviction' to the personnel of organization, to that informal organization underlying all formal organization that senses nothing more quickly than insincerity. Without it, all organization is dying, because it is the indispensable element in creating that desire for adherence—for which no incentive is a substitute—on the part of those whose efforts willingly contributed constitute organization (Barnard 1938, pp. 281–282).

He is joined historically in the affirmation of cooperation's necessity by the likes of prominent sociologists and organizational theorists Robert K. Merton (1957), James G. March and Herbert A. Simon (1959), Alvin Gouldner (1950), Victor A. Thompson (1961) and many others, influenced by Emil Durkheim's (1933) insight that cooperation is dependent on the recognition and embrace of mutual dependence. In education, we can point to no less a luminary than Jean Piaget who touched on this subject: "The more complex the society, the more autonomous is the personality and the more important are the relations of co-operation between equal individuals" (Piaget 1948, p. 336).

These claims placing cooperation at the center of effective human organization seem strangely at odds with prevailing trends in the management and leadership of schools. For example, current education policy established by government, public

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pressure, and the enticements of philanthropic foundations all advocate and emphasize outcome measurement and "value-added" metrics–ostensibly in the service of accountability. The idea of schools, or other organizations for that matter, existing as cooperative systems seems to have been forgotten, even as evidence of the failure and limitations of these narrow, outcome-driven experiments mounts (Dubnick 2006; Baker et al. 2010; Heck 2000; Ravitch 2011; Fullan 2010; Harris 2011; King and Bouchard 2011; Thanassoulis and Portela 2002). The wisdom of Thompson seems like a plea from a long distant past: "… all organizational processes and arrangements should have as a manifest purpose the furthering of cooperation. It must, however, be co-operation based upon the mutual recognition and acceptance of interdependence, which is the only possible foundation" (Thompson 1961, p. 197).

In this chapter, we hope to reintroduce the notions of cooperation, interdependence, and predictability as they relate to school leadership and performance. Predictability can be seen as similar to outcomes, but different, as we hope to demonstrate. Specifically, the purpose of this study is to explore the utility of a latent variable (organizational predictability) and its consequences for school effectiveness operationalized as academic performance.

4.2 Task Complexity and Cooperation

McEvily, Perrone and Zaheer assert that managing "interdependence among individuals, units, and activities in the face of behavioral uncertainty constitutes a key organizational challenge" (McEvily et al. 2003, p. 92). The need for achieving predictable cooperation in organizations seems undisputed, if ignored by current trends in leadership. What is less clear is how to achieve it and whether or not the means to achieve it are compatible or mutually exclusive, and under what conditions. The literature favors two avenues for achieving predictable cooperation. The first way is to reduce uncertainty or risk through control mechanisms (Blau and Scott 1962; Eisenhardt 1985). The second is to reduce uncertainty by increasing trust, which replaces uncertainty with willingly embraced risk (Bachmann 2006; Bruhn 2001; Curseu and Schruijer 2010; Jones and George 1998).

Theorists have argued that the confidence partners have in cooperative relationships comes from either control or trust (Aulakh et al. 1997; Forsyth et al. 2006; Leifer and Mills 1996; Zaheer and Venkatraman 1995). Specifically, Das and Teng (1998) describe control as regulatory processes that make predictable the mutual interests of partners. Trust, on the other hand, is not a process, but a belief or attitude about a partner's "goodwill and reliability in a risky exchange situation" (Gambetta 1988; Nooteboom et al. 1997; Ring and Van de Ven 1992). The question appears to be, "Can control and trust function together, and if so, how?" Are trust and control alternative, complimentary, or supplementary means to achieve cooperation and predictability?

Theory and evidence on this question are on some levels non-convergent. While some say the mere presence of control suggests the absence of trust (Argyris 1952; Rousseau et al. 1998; Creed and Miles 1996), others argue that control, under the right circumstances, can increase trust (Goold and Quinn 1990; Das and Teng 1998; Sitkin 1995). Still, others claim that only one type of control, formal, is at odds with trust or obviates its need (Bachmann 2006). There is evidence that organizational outcomes may differ based on the type of control used (Aulakh et al. 1997; Eisenhardt 1985; Hoy and Sweetland 2000; Kirsch 1996; Ouchi 1979). Also, the type of control mechanism used (output, process, or social) can have specific consequences for trust as hypothesized by Aulakh et al. (1997). Still other scholars propose a contingency approach, arguing that trust is only diminished when the type of control utilized is not appropriately matched with the organization's complexity, outcome uncertainty, or behavior observability (Kirsch 1996).

Because we are interested in public schools, it is important to explain the conditions under which control and/or trust elicit teacher cooperation and the cooperation of interdependent groups such as parents and students. Trust functions quite differently from control mechanisms in enabling cooperation. Control constrains behavior, thereby promoting a predictable and secure environment in which cooperation potentially can thrive; control puts the "rules of the game" on the table, along with the expectation that the rules will be observed. On the other hand, trust absorbs uncertainty, transforming it into risk (Bachmann 2006). So, trust does not remove uncertainty, rather, it enables groups and individuals to cooperate having accepted a certain amount of risk and uncertainty.

To address the question of whether control and/or collective trust elicit cooperation and predictability in schools, it is important to understand the particular nature of the school's task. We specify "collective trust," referring to the normative, group beliefs in the trustworthiness of other groups or individuals in organizations. It has been argued that this normative form of trust, rather than high levels of interpersonal trust, is the organizational property that has particular relevance to cooperative climate of school organizations (Forsyth et al. 2011).

When an organization or group's task is complex (not programmable, unable to be routinized, difficult-to-measure outcomes, and success depends on inter-group cooperation), formal control is often incompatible with success because it specifies behaviors and practices *a priori* that limit the requisite flexibility workers in the technical core (teachers) need to do their complex work. When a group's task is simple (programmable, standardized process, easily measured and evaluated outcomes), formal control may be quite effective. As Eisenhardt says, "… the task characteristics determine which control strategy is appropriate" (Eisenhardt 1985, p. 136). Our position is that schools are complex organizations. The processes they use to address their tasks are not effectively standardized because children are diverse on many dimensions: interest, motivation, prior learning, health, cognitive skills, etc. Moreover, to be successful, schools depend on the cooperation of multiple, interdependent groups: students, parents, teachers, and administrators. Because trust elicits cooperation in uncertain and complex conditions, it is especially suited to play an essential role in fostering cooperation, predictability, and ultimately, goal

attainment in schools. Thus, the complexity of the task has implications for the mix of control and trust that a leader can use to achieve predictability, a set of organizational conditions, especially human cooperation, that enhance the likelihood of achieving specified goals (Barnard 1938).

Dirks and Ferrin's (2002) meta-analysis on subordinate trust confirms that trust in the leader is related to important organizational outcomes, including organization commitment, commitment to leader decisions, intent to leave the organization, organizational citizenship, and job performance. Trust is especially important when the task is complex, because control mechanisms that work in more programmable organizations are often ineffective or even counterproductive. Costa found that task ambiguity and functional dependence were positively related to trust (Costa 2003). Thus, trust emerges where we find task ambiguity and interdependence because under these dual conditions, trust is a condition that effectively elicits cooperation. In effective organizations whose tasks are complex, leaders build trust by acting in ways that reveal them as trustworthy to groups and individuals. They act in ways consistent with the criteria for judging trustworthiness, namely they exhibit benevolence, honesty, openness, reliability and competence in their day-to-day behavior (Tschannen-Moran and Hoy 2000; Forsyth et al. 2011).

Our discussion thus far leaves unresolved the problem of formal control and school leadership. It is difficult to dispute the fact that schools need rules and procedures to regulate some processes. And, school activities need coordination by individuals accountable to the communities they serve. Hoy and Sweetland have found that it is not formal controls *per se* (bureaucratic formalization and centralization) that are destructive of trust, flexibility, and cooperation. Instead, they found that it is the perceptions and feelings of those in the organization toward the particular bureaucratic structures under which they work that can threaten trust. Formalization and centralization, when regarded by teachers as supportive of their work, are positively related to teacher trust of the principal (Hoy and Sweetland 2000, 2001; Forsyth et al. 2006). Here, formalization refers to the regulatory structures embedded in rules, policy and expectations. Centralization refers to the concentration of decision-making at the highest levels of hierarchy. Hoy and Sweetland (2000, 2001) labeled bureaucratic characteristics positively regarded by teachers "enabling school structures" in contrast with "hindering school structures," which teachers perceived as interfering in their efforts to do their work.

Consistent with the evidence and theory emerging in the general trust literature, we propose that enabling formalization and centralization, while clearly types of formal control, facilitate cooperation and provide a vital threshold for collective trust formation among teachers, ultimately leading to organizational predictability and goal accomplishment. Indeed, trust researchers have found that some formal control increases the perception that another person or group will cooperate (Luhmann 1979; Bachmann 2006). Rules and hierarchy that are regarded by school employees as enabling provide a structural threshold for trust formation among interdependent groups in schools, while not restricting legitimate autonomy and flexibility (as do hindering forms of control). They are an appropriate source of principal leadership and catalysts of intergroup cooperation.

4.3 Predictability, Instructional Capacity, and Academic Achievement

Theoretically, then, in schools, cooperation and organizational predictability might best be achieved by the establishment of enabling formalization and centralization combined with the development of collective faculty trust in principal. The evidence seems clear that the kind of empowerment fostered by enabling structures only enhances performance in trusting organizational climates (Jones and George 1998; Mayer et al. 1995; McAllister 1995). To enable testing this framework, we specified organizational predictability as a higher-order factor consisting of enabling formalization, enabling centralization, and collective faculty trust in principal. These conditions combine to create an organizational climate that achieves predictability through professional rather than bureaucratic control. Since the purpose of predictability is to assure the organization's successful accomplishment of its primary goals (in schools, student learning) we then use the latent variable to determine if it explains variation in school performance, indirectly, through its influence on the instructional capacity of teachers who make up the technical core.

Organizational predictability is especially critical when system inputs are nonstandard, output measures are error-filled, the process enacted by the technical core is difficult to evaluate reliably, and effectiveness requires the simultaneous effort of multiple groups and individuals. The evidence does not support the use of traditional control approaches to assure predictable effectiveness under these conditions. To achieve predictable school effectiveness, the role of cooperation among interdependent role groups is key. Achieving predictability in schools particularly requires eliciting the cooperation of those who make up the technical core, namely the teaching corps. Thus, our proposed latent variable "organizational predictability" it is reasoned, creates an organizational environment most likely to elicit teacher cooperation with the mission of the school, namely, designing and delivering competent learning activity and meeting the psychological needs of learners. A cooperatively produced instructional program, it is argued, nurtures instructional capacity of the faculty and in turn produces enhanced instruction, and school effectiveness. We thus structure the test of this explanation using two directed hypotheses:

H_1 Organizational predictability in schools is a latent variable composed of enabling formalization, enabling centralization and faculty trust in principal.

H_2 Organizational predictability predicts school achievement indirectly through the instructional capacity of the teacher cohort.

4.4 Method

This study was part of a broader investigation of social conditions in a large southcentral urban school district. The 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 % are African American, 29 % are Caucasian, 25 % are Hispanic, 8 % are Native American, and 2 % are Asian. Eighty-three percent of the students qualified for the federal lunch subsidy. Nearly 2,400 teachers are employed in the district. Teachers average 10 years of teaching experience and approximately 25 % of teachers hold advanced degrees.

Survey methods were used to collect social indicators of capacity and climate in elementary, middle, and high schools. Studying urban schools allowed us to explore the effects of organizational predictability in a setting where school improvement has generally been inconsistent and social resources have been scarce. Survey and achievement data from students, teachers, and schools in a single urban district controlled for differences in how urban districts approach the design, implementation, and evaluation of school reform. The use of a single district for the study obviously contributes to both strengths and limitations of the research design.

4.4.1 Data Source

Data were collected in the spring of 2011 from teachers in 85 schools in South School District. Researchers administered electronic surveys through the Qualtrics system to all classroom teachers. Teachers in each school were randomly assigned to one of two surveys. Usable responses were received from 1,039 teachers across the district, resulting in a response rate of 68 %. Two schools were excluded from the analysis because they had fewer than five teacher respondents, leaving 83 schools. School achievement and demographic data came from the state department of education.

4.4.2 Measures

Enabling Formalization is based on the collective perceptions of teachers that the rules, regulations, and policies of their school enable their work rather than hinder it. Enabling Formalization provides teachers with guidelines while retaining flexibility (Hoy and Sweetland 2001). It was operationalized as a 6-item instrument with a 6-point Likert response set ranging from “never” to “always.” A sample item is “Administrative rules in this school are guides to solutions rather than rigid procedures.” Hoy and Sweetland provide evidence of the measure’s construct validity (2001, p. 305). The internal structure of the items was tested with data from this study using principal axis factor analysis. Factor loadings ranged from 0.64 to 0.78, with an alpha coefficient of 0.87, confirming overall reliability.

Enabling Centralization is based on the collective perceptions of teachers that the hierarchical and decision-making structures of the school enable their work rather than hinder it. Enabling Centralization helps teachers solve problems by situating decisional authority where it needs to be (Hoy and Sweetland 2001). It was

operationalized as a 6-item instrument with a 6-point Likert response set ranging from "never" to "always." A sample item is "The administrative hierarchy obstructs student achievement." Hoy and Sweetland provide evidence of the measure's construct validity (2001, p. 305). The internal structure of the items was tested with data from this study using principal axis factor analysis. Factor loadings ranged from 0.60 to 0.71, with an alpha coefficient of 0.87, confirming overall reliability.

Faculty Trust in Principal was conceptualized using the multifaceted definition of Hoy and Tschannen-Moran (1999), namely that trust is one party's willingness to be vulnerable to another party based on the confidence that the latter party is benevolent, reliable, competent, honest and open. It was operationalized as an 11-item instrument with a 6-point Likert response set ranging from "strongly disagree" to "strongly agree." A sample item is "Teachers in this school can rely on the principal." Validity and reliability of the trust scales have been well documented (see Forsyth et al. 2011; Tschannen-Moran 2004). A school aggregate of teacher respondents was created by averaging sampled teacher perceptions.

Instructional capacity was specified as a latent condition observable in collective efficacy, faculty trust in colleagues, and instructional program coherence. Collective efficacy was measured with the Collective Teacher Efficacy Scale of Goddard et al. (2000). The scale consists of 12 Likert-type items with a 6-point response set. Validity and reliability are supported through field studies and existing research that consistently reports factor loadings above 0.60 and alphas above 0.85 (Adams and Forsyth 2006; Goddard and Goddard 2001; Goddard et al. 2000). The instructional program coherence scale was adapted from an instrument developed by the Consortium on Chicago School Research. Six Likert-type items were measured on a 6-point scale. Alpha's ranging from 0.84 to 0.90 suggest the survey's reliability. Faculty trust in colleagues was measured with the 8 items from the Omnibus Trust Scale that capture teacher trust in their colleagues (Hoy and Tschannen-Moran 1999; Tschannen-Moran 2004).

School Performance was operationalized using average math and reading achievement on state mandated tests from a random selection of 5th, 7th, 9th, and 11th grade students. Achievement scores were measured on a standard scale ranging from 400 to 990. The state sets the proficiency threshold at 700.

Social composition was measured as a latent variable observable through school free and reduced lunch rate, and the percent of white students in a school.

4.5 Analysis

We first calculated Intra-Class Correlations (ICC) to justify aggregation of the observed variables; both ICC(1) and ICC(2) were estimated. ICC(2) [(MSB—MSW)/MSB] is derived from a random effects ANOVA and measures the reliability of group means (Bliese 2000). This statistic provides an estimation of the within-group agreement among individuals in the sample. Reliability values at or above 0.60 are desirable for ICC(2) (Cohen et al. 2001; Ostroff 1993). ICC(1) [SSB/(SSB + SSW)] tests

for group dependence by estimating variance attributed to group membership. The ICC(1) is also derived from a random effects ANOVA but relies on the sum of squares between and within rather than the mean square between and within. Each ICC provides a different estimation of group dependence: homogeneity of group member beliefs with ICC(2) and variance attributed to group differences with ICC(1).

We tested our hypotheses with a fully latent structural regression model using AMOS 7.0. Organizational predictability was specified as a latent variable with the observable factors of faculty trust in principal, enabling formalization, and enabling centralization. Instructional capacity was also specified as a latent variable. Its measured properties included collective efficacy, program coherence, and faculty trust in colleagues. We controlled for the effects of school free and reduced lunch rate (FRL), and ethnicity by creating the latent social composition variable. These controls ensured that any effect of organizational predictability or achievement would not be an artifact of school social composition. School achievement was also specified as a latent factor with math and reading achievement being the observable properties. Modeling the constructs as latent variables allowed for measurement error to be accounted for in the analysis. Unit loading identification (ULI) was used by constraining the path residuals to 1.0 (Schumaker and Lomax 2004). Maximum likelihood estimation was used because the observable variables met the multivariate normality assumption.

Several model fit indices were used to test the fit between the hypothesized model and the sample data. Brown (2006) recommends using a combination of indices that account for absolute fit, parsimony correction, and comparative fit. Consistent with this guideline we used chi-square to test absolute fit, Root Mean Square Error of Approximation (RMESA) to test model parsimony, and Comparative Fit Index (CFI) and Tucker-Lewis Index (TLI) to test comparative fit.

4.6 Results

We divided the report of our findings into two sections. The first includes an overview of simple descriptive data related to variables included in the study and evidence related to the appropriateness of aggregation of variables. The second section reports results from the Structural Equation Model used to test the indirect relationship between organizational predictability and school performance as predicted by the second hypothesis.

4.6.1 Descriptive Statistics and Intraclass Correlations

Descriptive data are presented first (Table 4.1). The average school FRL rate was 85 %. The average percentage of students classified as minority was 67 %. These statistics describe a school social composition that is largely minority and high poverty. There was variation in these compositional elements across schools as indicated by

Table 4.1 Descriptive statistics of observed variables

Variable	N	Mean	SD	Min	Max
F/R lunch rate	85	85	22.6	16	100
Enabling formalization	85	21.7	3.0	14	27
Enabling centralization	85	23.3	3.3	14	29
Faculty trust in principal	85	34.4	6.8	18	48
Program coherence	85	17.2	2.5	11	22
Collective efficacy	85	46.8	6.6	33	64
Faculty trust in colleagues	85	35.8	4.0	26	44
Minority	85	67.4	18.5	25	99
Avg. reading achievement	85	713	43.6	635	823
Avg. math achievement	85	716	46.3	636	844

Table 4.2 Intraclass correlation coefficients for observable properties of organizational predictability and instructional capacity

Variable	ICC(1)	Chi square	ICC(2)	F-Ratio
Enabling formalization	0.23	247.00**	0.65	3.06**
Enabling centralization	0.21	239.49**	0.67	8.34**
Faculty trust in principal	0.32	376.14**	0.79	4.70**
Program coherence	0.22	263.94**	0.73	3.46**
Collective efficacy	0.35	394.23**	0.79	4.75**
Faculty trust in colleagues	0.19	212.75**	0.66	3.01**

**$p < 0.01$

a minority range of 25–99 %, and a range of FRLunch rate of 16 to 100 %. Average school math and reading achievement were 716 and 713 respectively.

Intraclass Correlation Coefficients confirm the nested nature of the observed variables (Table 4.2). ICC-2 estimates of 0.60 exceed the threshold used to indicate acceptable within-group agreement among teachers (Cohen et al. 2001; Ostroff 1993). Further, ICC-1 estimates confirm school-level variability in the observable properties of organizational predictability and instructional capacity. School differences in the observed variables were significantly greater than 0. Collectively, the ICC estimates indicate strong within-group agreement of school means and significant variance in teacher perceptions attributed to school differences. These results support the theoretical claim that organizational predictability is an emergent school property.

Bivariate correlations show strong relationships among the observed properties of organizational predictability, instructional capacity, and social composition (Table 4.3). Also noteworthy were the intercorrelations between the observed properties of organizational predictability and instructional capacity. In particular, enabling formalization, enabling centralization and faculty trust in principal each had a stronger relationship with program coherence than collective efficacy and faculty trust in colleagues. The properties of instructional capacity had stronger relationships to math and reading achievement then the properties of organizational predictability.

Table 4.3 Bivariate correlations of observed variables

		1	2	3	4	5	6	7	8	9	10
1.	Enabling formalization	1.0	0.78**	0.71**	0.67**	0.41**	0.43**	0.19	0.20	−0.19	−0.25*
2.	Enabling centralization		1.0	0.73**	0.69**	0.45**	0.49**	0.21*	0.27**	−0.25*	−0.30**
3.	Faculty trust in principal			1.0	0.60**	0.34**	0.37**	0.12	0.17	−0.20	−0.26*
4.	Program coherence				1.0	0.55**	0.61**	0.37**	0.27**	−0.28**	−0.44**
5.	Collective efficacy					1.0	0.50**	0.61**	0.58**	−0.72**	−0.60**
6.	Faculty trust in colleagues						1.0	0.28**	0.30**	−0.21*	−0.33**
7.	Math achievement							1.0	0.79**	−0.54**	−0.54**
8.	Reading achievement								1.0	−0.57**	−0.47**
9.	FRL rate									1.0	0.71**
10.	Minority										1.0

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

Table 4.4 Model fit indices

Fit Index	Criteria	Estimates
Chi-Square	Non-Significant	13.24 (p = 0.058)
RMSEA	< 0.05	0.04
CFI	> 0.95	0.95
TLI	> 0.95	0.96

4.6.2 Structural Equation Model

We first report fit indices in order to assess the association between our hypothesized model and the sample data (Table 4.4). As mentioned, model fit indicates the degree to which relationships specified in the measurement and structural parts of the hypothesized model align with relationships found with data from our sample. We report indices of absolute, parsimony correction, and comparative fit. When combined, the fit indices suggest a good fit between the hypothesized model and our sample data. Specifically, chi-square met the not statistically significant standard, RMSEA was below 0.05, CFI was 0.95, and TLI was above 0.95. Additionally, standardized residuals were below the absolute value 1.96 suggesting path relationships were not under- or over-estimated by the parameter estimates (Brown 2006). From the perspective of model fit, relationships specified in our hypothesized model were supported with data from our sample.

Fit indices are a good global estimate of the hypothesized model, but they do not reflect the strength of specific direct and indirect relationships (Brown 2006). Standardized parameter estimates from both the measurement and structural components of the model were used to test our hypotheses (Table 4.5). Parameter estimates statistically significant from zero confirm the hypothesized relationship between the latent organizational predictability construct and its observable properties. To be specific, organizational predictability had a strong and significant effect on enabling formalization ($\beta = 0.95$, $p < 0.01$), enabling centralization ($\beta = 0.99$, $p < 0.01$), and faculty trust in principal ($\beta = 0.83$, $p < 0.01$), accounting for over 69% of the variance in each observable property. Results of the measurement model support the hypothesis that organizational predictability is a higher order factor comprised of enabling formalization, enabling centralization, and faculty trust in principal. These properties unite to create a teaching and learning environment where professional control engenders predictable structures and processes.

Results of the structural model confirm the hypothesized indirect effect of organizational predictability on academic achievement (Fig. 4.1). Organizational predictability was not directly related to achievement but it operated through instructional capacity of the teaching corps to influence achievement. Schools with stronger organizational predictability had higher instructional capacity ($\beta = 0.54$, $p < 0.01$). Instructional capacity in turn was strongly and significantly related to academic achievement ($\beta = 0.59$, $p < 0.01$). Thus, schools with stronger organizational predictability had teachers who viewed the instructional program as coherent, who trusted their teaching colleagues, and who had higher collective efficacy. These teaching conditions combined to influence achievement.

Table 4.5 Standardized parameter estimates and critical ratios for school achievement

Variable	Critical Ratio	Direct Effect	Indirect Effect	Total Effect
Organizational Predictability	1.2	0.11	0.33	0.44
Social Composition	−1.1	−0.32	−0.34	−0.66
Instructional Capacity	5.4	0.59	___	0.59

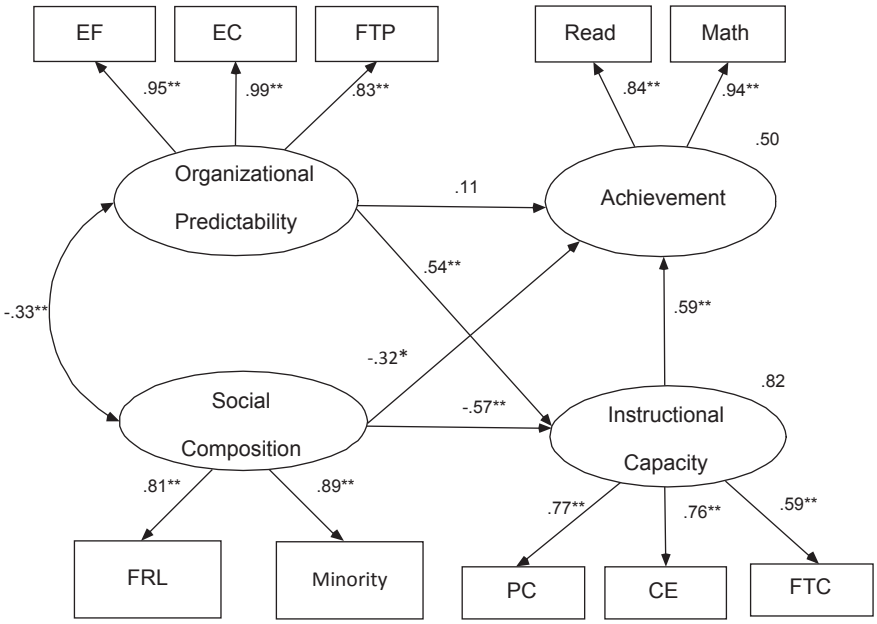

Fig. 4.1 Empirical results from the Fully Latent Structural Equation Model

Note to Fig. 4.1.: PC = Program Coherence, CE = Collective Efficacy, FTC = Faculty Trust in Colleagues, EF = Enabling Formalization, EC = Enabling Centralization, FTP = Faculty Trust in Principal, Reading = school average reading score, Math = school average math score. Parameter estimates are standardized regression coefficients. Organizational Predictability and Social Composition combined to explain approximately 82 % of the variance in Instructional Capacity. Fifty percent of the variance in achievement was explained by the model. Residual variance for instructional capacity (0.18) and achievement were relatively small (0.51).

Social composition of the school also contributed to instructional capacity but in hindering ways. Schools with higher poverty and higher minority student compositions tended to have lower instructional capacity ($\beta = -0.57$, $p < 0.01$) and lower achievement ($\beta = -0.32$, $p < 0.01$). That stated, social composition was not entirely predictive of instructional capacity or achievement. As evident in Table 4.5, the indirect effect of organizational predictability on achievement (0.33) was as

strong as the indirect effect of social composition on achievement (0.34). Further, instructional capacity had a stronger direct effect on achievement than social composition. In short, results of the structural model are promising. They suggest that organizational predictability can counter the adverse achievement effects of poverty and minority status by producing instructional environments that support effective teaching through faculty trust in colleagues, program coherence, and collective efficacy.

4.7 Discussion

We began by pointing to a concern for the disappearance of cooperation from contemporary discussions of school effectiveness and accountability. We argued, or perhaps restated the classical case, for the central importance of cooperation in achieving organizational predictability and effectiveness under certain conditions. The case was made that schools are arch-typical with respect to these conditions, and that their organization structures and leadership best achieve cooperation through means supported by empirical evidence. Our study provides evidence and a conceptual framework especially informative for urban school contexts.

Our findings, of course, do not challenge the importance of outcome measures for schools. They do, however, suggest that embracing control systems more appropriate for manufacturing, such as counting "look-fors" in teacher evaluation (the equivalent of industrial piece-work), will prove ineffective for achieving predictability in all but mindless compliance. Our findings do suggest that predictable outcomes and practices in urban schools are attainable through structures and hierarchy that endow teachers with autonomy in their teaching practice. Ultimately, organizations that do complex work such as schools must rely on those in the technical core to do their work carefully and competently, understanding that performance evaluation and outcome measurement are, under these circumstances, costly, often invalid, sometimes impossible, and destructive of cooperation and organizational citizenship. This leaves trust-building and the de-emphasis of traditional control mechanisms as the critical path to achieving predictability.

In addition to the components of organizational predictability identified in this chapter (enabling organizational structures and trust of the principal), we refer to Eisenhardt's "fourth option" for producing organizational control that she calls "people policies" that rely on selection, training, and socialization (1985). In the absence of accurate, affordable or credible performance measurement, the role of the leader is distinctive. School principals, then, although certainly charged with the task of eliciting predictability and cooperation from the interdependent partners in the education enterprise, must achieve it with a narrowed set of tools, few taken from the business/industrial toolbox of control.

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Chapter 5
Teacher Trust in the Principal: Factor Structure and Effects

Monica Makiewicz and Douglas Mitchell

5.1 Introduction

Public school administrators and teachers are under pressure to improve student achievement—raise test scores, improve attendance, reduce discipline problems, etc. Several recent studies have focused on the importance of trust in schools (Bryk et al. 1994; Romero 2010) as a factor contributing to student achievement. In schools reporting high levels of trust among faculty members, researchers have found gains in student performance—predominantly on standardized tests (Bryk and Schneider 2002). Studies have also found that these schools have fewer discipline issues and higher attendance rates (Bryk et al. 1994).

The issue of trust has become very important to schools and to organizations in general (Bryk and Schneider 2002). As Bryk and Schneider report, the current workforce composition has increased in diversity—the minority percentage of the workforce was 17% in the 1980's and over 25% in 2000. This increase in diversity requires individuals from different backgrounds to work together—less able to rely on interpersonal similarity and common background experience to encourage collaboration. Establishing mutual trust provides one way for helping employees to effectively work together and collaborate on projects. Trust is also needed because control mechanisms (e.g., a manager's direct supervision) need to be removed to empower employees and encourage self-direction.

Particularly with respect to school leadership and teacher professionalization, two types of faculty trust have been a focal point of recent study—trust among teachers and teacher trust in the principal (Tschannen-Moran and Hoy 1998). In addition, several studies have focused on faculty trust in students and parents as being

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predictive of achievement (Forsyth et al. 2011). Trust among teachers needs to exist to foster collaboration and willingness to work together (Tschannen-Moran and Hoy 1998). Coleman (1990) states that "a group whose members manifest trustworthiness and place extensive trust in one another will be able to accomplish much more than a comparable group lacking trustworthiness and trust" (p. 304). Schools are faced each day with difficult issues—school safety, truant students, persistent academic failure. They need to be able to come together to collaborate on problems and develop strategies—new instructional practices, effective classroom management strategies, etc. However, trust among teachers is not enough. The principal needs to be trusted to be able to lead the school staff in these collaborative efforts—provide guidance, resources, and support (Bryk and Schneider 2002). Trusted principals also provide an environment where teachers can experience success and failure as part of the learning process (Boles and Troen 1997).

Catalyzed by the widely recognized work of Bryk and Schneider (2002), organizational trust has become a core concept in the analysis of school reform and improvement. How trust in a school principal is established and maintained has been difficult to explain, however. The research on trust in principals is recent, limited in volume, and built on earlier studies of trust. These studies have developed a substantial variety of explanations for why one individual trusts another. Early research variously conceptualizes trust as:

- A behavioral intention or an internal action of the trustee giving their trustors confidence (Mayer et al. 1995; Rousseau et al. 1998; Lewis and Weigert 1985);
- Something in the developed personal characteristics of the trustee evoking confidence from trustors (Butler and Cantrell 1984);
- An action or condition that motivates trustors' cooperation or risk taking (Lewis and Weigert 1985);
- As a personality trait that develops early in one's life and remains stable through adulthood (Rotter 1967).

To help alleviate the confusion, some researchers attempted to establish the difference between trust as a situational state and trust as a personality variable, with trust propensity defined as a stable individual difference that affects the likelihood that a person will trust (Mayer et al. 1995). Others carefully separate trust as an act of reliance from trustworthiness—the characteristics of the trustee that elicit the trusting response (Mayer et al. 1995).

These differing viewpoints complicate efforts to synthesize available research. Overall, trust in leaders is generally analyzed from one of two different theoretical perspectives: trust as an effect of developed relationships or trust as an attribute of trustee character (Dirks and Ferrin 2001). The relationship-based perspective looks at social exchange processes (Konovsky and Pugh 1994; Whitener et al. 1998). Trusted parties provide or exchange benefits in response to the needs of the others (Clark and Mills 1979; Fiske 1992). From this perspective trusted individuals are seen as acting honestly and with mutual consideration. The character-based perspective examines trustee characteristics and how they influence a trustor's willingness to trust (Mayer et al. 1995). Both the character and the relationship perspectives have been relied on to examine trust in school principals.

This paper adopts the character based approach and utilizes the concepts and data collection methods developed by Mayer et al. (1995; see also Mayer and Davis 1999). Mayer et al. (1995) analyze prior studies of trust and focus on trust's antecedents and outcomes to develop a theoretical model for explaining how individuals (trustors) come to trust influential others (trustees) in complex organizations. They begin with an antecedent of trust—the trustors general propensity to trust other people. Here they use a concept of trust similar to that used in Rotter's (1967) early work where trust is defined as "an expectancy held by an individual or group that the word, promise, verbal or written statement of [another] individual or group can be relied upon" (p. 651). Rotter's theory treats trust as a psychological disposition or trait—a generalized expectation about the trustworthiness of another party. Mayer et al. (1995) refers to this generalized trait as an individual's propensity to trust. This propensity is defined as "a stable within-party factor that will affect the likelihood the party will trust" (Mayer et al. 1995, p. 715). That is, individuals have various levels of a general willingness to trust others. This willingness to trust others will impact how much trust a trustor will have for a trustee without regard to background information or prior experience with the trustee. This propensity has been found to be influenced by developmental experiences, personality types. and cultural backgrounds (Mayer et al. 1995; Hofstede 1980).

Mayer and Gavin (2005) analyzed the common characteristics of existing approaches to trust to develop a model of dyadic trust that clarifies the role of interpersonal trust in risk taking. They define trust "as the willingness to be vulnerable to another party when that party cannot be controlled or monitored" (Mayer and Gavin 2005, p. 874; Mayer and Davis 1999). Their theory also separates trust from its antecedents and outcomes. The trustor's perceptions regarding the trustee's trustworthiness are considered to be antecedents of trust. Trustworthiness is based on whether the trustor perceives the trustee has the following distinct characteristics:

- Ability: the trustee has the necessary skills and competence to carry out the requirements of the position;
- Benevolence: the trustee cares about the trustor's welfare;
- Integrity: the trustee acts accordingly to a set of principles that the trustor finds acceptable (Mayer and Gavin 2005; Mayer and Davis 1999).

They agree with Mayer et al. (1995) that the trustor's propensity to trust can help to explain trust before any relationship has developed. However, the interrelationship of ability, benevolence, and integrity is also important to consider. Ability is specific to a given task because the trustee may have the ability to accomplish one task but not another (Mayer and Gavin 2005). For example, a person may have the technical skills necessary for his/her job but have very little aptitude or training to build interpersonal communication. However, having the ability to do a specific task does not, by itself, lead to trust. Trust is built as a relationship begins to develop between the trustee and the trustor. As the relationship continues to develop, interactions between the trustee and trustor provide the trustor with information regarding the trustee's benevolence. The trustor can also obtain information on the trustee's integrity through third-party sources and observations (Mayer and Gavin 2005).

A key component of the Mayer and Gavin (2005) perspective on trust is the relationship between trust and risk because risk is intrinsic to trustor vulnerability (Deutsch 1958). They contend that trust is a generalized behavior with an, "intention to take risk, whereas its outcome is actually taking risk" by a trustor in a relationship with a trustee (Mayer and Gavin 2005, p. 874). The trustors' risk taking behaviors actually make them vulnerable to the trustee, rather than simply being willing to be vulnerable as a predisposition. The theory also proposes that when risks are taken by trustors, positive organizational performance outcomes will tend to result due to increased collaboration, innovative ideas, etc. With these successes, the trustor's earlier perceptions of the trustee's trustworthiness is strengthened and the level of trust increases (Mayer and Gavin 2005). This process can be continuous and self-reinforcing as higher levels of trust result in more risk taking (Mayer and Gavin 2005). However, negative organizational outcomes result in the trust that previously existed being damaged.

Two other factors can strengthen trust relationships: (1) trustor/trustee background similarity and (2) frequent interactions between the trustor and the trustee. Zucker (1986) studied interactions among unfamiliar persons—individuals who have little or no information about one another. Analyzing existing research on trust in organizations, she found that trust can be built and fostered between members of an organization sharing similar characteristics. She relied on two kinds of indicators of similarity to help determine trust. The first type calls for an association in a common cultural system—ethnicity, family background, gender, national origin (p. 15). The second type deals with membership in a subculture that holds common expectations of its members regarding any of the following: membership in a professional organization, professional certification or license, an educational degree, etc. (p. 16). Though not the primary aim of this study, the data reported here includes some analysis of the demographic characteristics of the trustor and the trustee—i.e. gender, ethnicity, age, level of education, years teaching and years as principal (Lowry 1973). McAllister (1995) proposes that interpersonal trust arises from the positive affect derived from relationships grounded in reciprocated interpersonal care and concern and is not motivated by self-interest. To be able to determine the other party's motives, there needs to be sufficient interaction to be able to make a confident attribution (McAllister 1995; Lewis and Weigert 1985).

Data collected for this study are used to validate the factor structure of teacher trust in principals and address the following research questions:

1. How do teacher perceptions of a principal's competence, benevolence, and integrity affect their level of trust in that principal?
2. Do teachers have a measureable propensity to trust that affects their trust in principals?
3. Does the frequency of interaction between teachers and principal affects trust levels?
4. How does a teacher's background similarity to the principal affect his/her level of trust in that principal?
5. Is the level of teacher trust for principals linked to school wide student achievement?

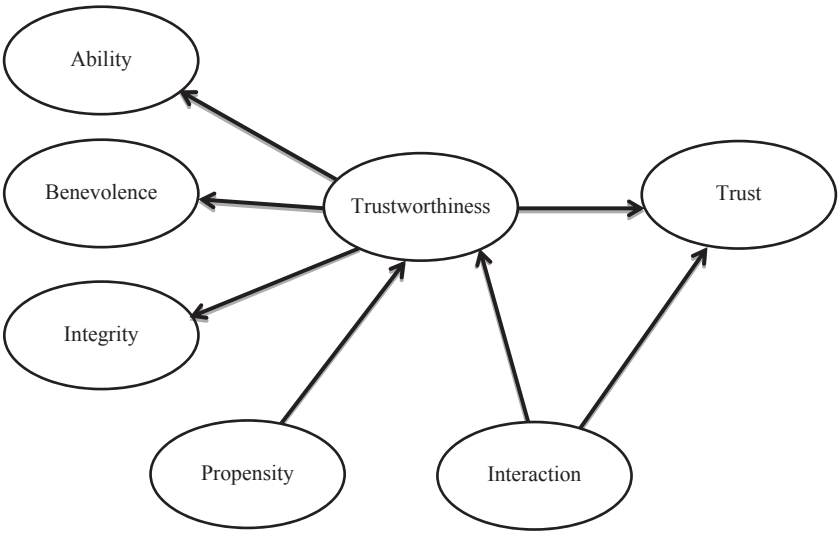

Fig. 5.1 Hypothesized latent factor structure for teacher trust of principals

5.2 Methods

Data for this study were collected using a modification of a survey instrument developed by Schoorman et al. (1996a). The modification replaced the private sector term "manager" with the public school category "principal" as the focal trustee to be evaluated (see the modified survey in Appendix A and descriptive statistics for survey responses in Appendix B). Data from the four-part self-administered survey were analyzed using the IBM Structural Equation Modeling (SEM) program AMOS ©. The AMOS model links six latent factors: (a) principal perceived Ability, (b) principal Benevolence toward teachers, (c) principal perceived Integrity, (d) overall principal Trustworthiness, (e) teachers' general Propensity to trust others, (f) the frequency of various types of principal-teacher Interaction patterns, and (g) the actual Trust level teachers report having for their principals. The hypothesized relationships among these latent factors are shown in Fig. 5.1.

In addition to these latent factors, our study gathered six demographic data elements on teachers and their principals: Age, Gender, Ethnicity, Education, Years in Teaching, and Years in Current Position. Finally, overall school achievement as measured by Academic Performance Index (API) scores published by the California Department of Education for 2008-09 was collected for each school. Part I of the survey includes items on the following:

- Six questions assessing teachers' perceptions of the professional ability of their principal
- Five questions assessing teachers' perceptions of the benevolence of their principals

- Six questions assessing teacher perceptions of their principal's integrity, and
- Four questions assessing the willingness of teachers to actually trust their principals (Mayer et al. 1995; Mayer and Gavin 2005).

Part II of the questionnaire probes the frequency of various types of interaction between teachers and principals (McAllister 1995). Part III asks about the general propensity of teachers to be trusting individuals (Mayer and Davis 1999). Part IV asks the six socio-demographic items used to test for the influence of common background characteristics. Findings from earlier studies by Mayer et al. (1995), using confirmatory factor analysis, documented the scale reliability of the survey instrument. Their analysis found that trustworthiness to consist of three distinct factors with Cronbach's α reliabilities of 0.93, 0.95, 0.96, respectively. Their propensity to trust factor was also reliable with a Cronbach's α of 0.71 to 0.75. A Likert type scale is used throughout the survey.

A total of 377 teachers from 13 elementary schools in one Southern California school district responded to the survey. All teachers in each school were asked to participate, responding groups ranged in size from 17 to 47 with an average of 31.3 per school. Mean-substitution was used to eliminate a total of four missing values. The data were then analyzed using AMOS Structural Equation Modeling software.

5.3 Data Analysis: Procedures and Results

Data analysis was undertaken in four steps. First, univariate descriptive statics indicated that the items used to measure the three components of trustworthiness (ability, benevolence and integrity) and the four items measuring the overall level of principal trust were substantially skewed toward the high end of the item scales making it necessary to shorten the scales to 3-point scales by combining the lowest two scores with the middle range score to form the lowest levels of trustworthiness and trusting attitudes. The teachers in this school district had substantial confidence in the trustworthiness of all of the principals they evaluated, and were generally predisposed to trust them highly. Additionally, one item, Survey Part II, item #8, "How frequently do you attend a faculty meeting held by principal?" had no variance (all respondents replied with a "3" indicating that they met monthly). This item was dropped from further analysis. Descriptive statistics for all survey items are reported in Appendix B.

The second step in developing an overall model of teachers' trust was to determine whether the seven hypothesized latent factors adequately summarize the overall structure of survey responses. To do this, an AMOS confirmatory factor analysis was run for each cluster of measurement variables. The results of this series of confirmatory analyses are as follows:

1. Ability (Survey items 1–6): The confirmatory model for the ability items produced a Goodness of Fit Index (GFI) of 0.948 (df = 9; $p = 0.000$; RMSEA = 0.122),

indicating a relatively weak fit between the assumed factor and the data from these teachers. Factor loadings were strong, however, ranging from 0.74 to 0.84 (with $p=0.000$ for all loadings), and the Cronbach's Alpha for these items as a scale is 0.89, indicating that by traditional scale analysis this is a reasonably strong factor. Thus, we decided to preserve this factor and then see if we could produce an overall model with an acceptable fit to the data by trimming one or more of the measurement variables from the final model.

2. Benevolence (Survey items 7–12): Confirmatory factor analysis for the five benevolence items produced a model that had a somewhat more acceptable fit to the data with a GFI of 0.98 (df=5, $p=0.002$), and the RMSEA to be 0.085. Factor loadings for the confirmatory factor are quite large and reliable, ranging from 0.76 to 0.90 ($p=0.000$ in all cases). Cronbach's Alpha for this scale is an acceptable 0.92, and this maximum likelihood factor accounts for about 76% of the total variance of these five items. Nevertheless, as will become evident below, the factor is sufficiently ill-fitting to the data that variable trimming will be required to produce an acceptable comprehensive model.
3. Integrity (Survey items 13–18): The six items used to measure integrity produced an overall factor fit that was weaker than the ability and benevolence factors. Except for survey item #15 "Principal actions and behaviors are not consistent", the factor loadings for the items in this factor are reasonably high (ranging from 0.71 to 0.89) with reliability of $p=0.000$ for all items, including #15. The GFI for this factor is 0.903 (df=9, $p=0.000$) and the RMSEA is 0.179—indicating substantial correlations among the residuals of these survey items, presaging a need to significantly trim measurement variables to produce an empirical model of this theoretical construct. Nevertheless, Cronbach's Alpha for this scale is an adequate 0.86, and the first maximum likelihood factor analysis accounts for about 63% of the total variance of these six items.
4. Trust (Survey items 19–21): The four survey items measuring trust produced only a relatively weak confirmatory factor. Even though high reliabilities ($p=0.000$) exists for all factor loadings, the overall fit of this latent factor to the underlying survey items is not satisfactory. The GFI is 0.951 (df=2, $p=0.000$) and the RMSEA is 0.220 which indicate substantial correlations among the residuals. The strongest residual correlation ($r=0.463$) exists between TRUST19 (I would be willing to let the principal have complete control over my future at this school) and TRUST21 (I would be comfortable giving he principal a task or problem which was critical to me, even if I could not monitor his/her actions). The Cronbach's Alpha for these four items is only 0.69—suggesting enough for a group analysis, but not for the assignment of a trust value to specific individuals. The first and only significant maximum likelihood factor analysis also accounts for only 25% of the variance of these four items which leaves a substantial variance unaccounted for with this factor—however, there is only one component with an eigenvalue above 1.0.
5. Interaction (Survey items 1–15 of Part II): Two types of principal teacher interactions are analyzed—general frequency of interaction (Survey Part II, items 1–4) and specific types of frequency (Survey Part II, items 5–15). The four survey items assessing frequency were modeled after the interaction questions provided

by McAllister (1995). The other 11 survey items assessing specific types of frequency were included to study more specific school related interaction patterns among teachers and principals. When combined, these 15 items produce a two factor solution. The first factor, general frequency, represents correlations among the four items from McAllister (1995). The second factor, specific frequency, reflects correlations among the school specific items developed for this survey. All of the items except SFI15 (How frequently has the principal raised concerns about student behavior or discipline?) produced reliable ($p=0.000$) factor loadings on their respective factors.

The overall fit statistics indicate a less than satisfactory overall fit among the interaction items. The GFI is only 0.879 (df=76, $p=0.000$) and the RMSEA is 0.103. The Cronbach's Alpha for general frequency is 0.71 and for specific frequency is 0.78—indicating weaknesses in the items for these two scales. Since the two factors are correlated ($r=0.97$), the general frequency items were excluded from further the study and the remainder of the analysis included only the specific frequency construct. Once again, it became clear that the measurement items would need to be culled to identify items that compose a more coherent factor for use in the general trust model.

6. Propensity (Survey items 1–8 in Part III): Factor loadings for the eight survey items measuring propensity are relatively low (0.36 to 0.54), but are reliable at the $p=0.000$ level. Despite high factor loading reliabilities, however, the overall fit of this latent factor to the underlying survey items is not satisfactory. The GFI is only 0.852 (df=20, $p=0.000$) and the RMSEA is 0.180 indicating a very limited fit of the propensity factor to the responses to these eight survey items. The Cronbach's Alpha value of 0.70 and a first maximum likelihood factor analysis that accounts for only 33% of the sample variance on these eight survey items confirms the weakness in this factor (and two other components report eigenvalues above 1.0 indicating a multi-factor structure for the propensity items). Clearly significant measurement adjustments will need to be made to enable this factor to be considered in an overall model.
7. Trustworthiness (A second order factor accounting for correlation among the ability, benevolence and integrity factors): Since this second order factor has no independent measurement variables, it was examined only during construction of the comprehensive factor structure model described below.

The third step in the data analysis was to create a fitted model of the relationship among the latent factors by maintaining the theoretical framework shown in Fig. 5.1, but trimming from the analysis measurement items that produce significant variance that is uncorrelated with the latent factor being measured and, therefore, destroying the ability of the model to fit the measured date.

After trimming the weak measurement variables, a global picture of principal trust illuminated by the teacher survey data emerged. The best fitting model is presented in Fig. 5.2. As indicated by the seven ellipses shown in the figure, principal trustworthiness maps the relationships among three underlying perceptual factors of ability, benevolence [bene], and integrity. Four survey questions remain as

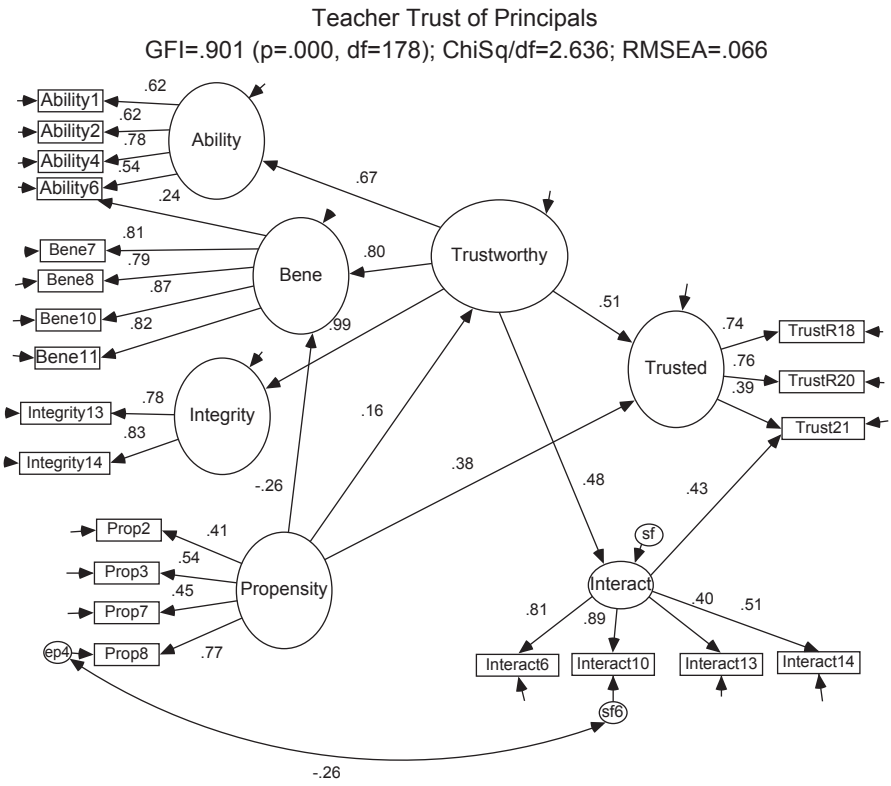

Fig. 5.2 A model of principal trust

acceptable indicators of principal ability. These questions ask respondents to assess whether the principal is, (1) "capable of performing his/her job," (2) "successful in things he/she tries to do," (4) knowledgeable, "about the work," and (6) "well qualified." The question asking about being "well qualified" which Mayer et al. found to be a component of ability was, by these teachers, also associated with the benevolence [bene] factor. In addition to this item, benevolence includes assessment of whether the principals are, (7) "concerned about my welfare," (8) seeing my needs and desires as, "important," (10) he/she "looks out" for me, and (11) is going out of his/her way to "help me." Only two of the integrity items ultimately fit into this structural model: (13) whether the principal will "stick to his/her word," and (14) "be fair in dealings with others." Thus, while only 10 of the 17 measurement items borrowed from Mayer and his colleagues are retained in the final structural model, these 10 items continue to reflect an adequate representation of the three Mayer et al. factors of trustworthiness—ability, benevolence and integrity. The retained items certainly have an acceptable level of face validity to encourage continued use of the Mayer et al. labels for the three latent factors.

In contrast with Mayer and colleagues who used more traditional factor and scale analysis, and stopped with the identification of three independent trustworthiness factors, our research hypothesized the existence of a second-order factor composed of the shared variance among these three first order factors. As can be seen by the overall fit statistics (GFI > 0.90 and RMSEA = 0.066), the existence of this second order factor is confirmed by the data from the 377 teachers in this study.

The remaining latent factors in Fig. 5.2 (propensity, interaction [interact], and trusted) measure the context of principal trust. In its trimmed form, propensity is composed of four survey items asking respondents whether: (2) "most experts tell the truth," (3) people will "do what they say they will do," (7) people answer "polls honestly," and (8) "adults are competent at their jobs." The final, Interact, factor is also composed of four items which ask how frequently teachers, (6) "meet with the principal to discuss problems," (10) "work on a project with the principal," (13) the principal leads, "staff development or training," and (14) the principal has "expressed praise or criticism of teaching." Although the factor structure is broadly acceptable, there remained a significant correlation between the residuals of Propensity 8 and Interact 10. This anomaly has no obvious explanation. The final construct, labeled "trusted" preserves three of the four trust questions which ask whether the teachers: (18) would "not let the principal have influence", (20) would "keep an eye on the principal," and (21) "would be comfortable giving the principal a task or problem" (items #18 and #20 are reverse coded to measure trust rather than mistrust).

5.4 Results

Several important observations are supported by the model presented in Fig. 5.2. First, while not all of Mayer and colleagues items are retained for teachers in this study, there is a strong structural framework of three first-order factors composing a global principal trustworthiness second-order factor. Second, this second order factor is a strong predictor of teacher trust for their principals (the path coefficient = 0.51). Third, the general propensity to trust has a substantial impact on both the teachers' perceptions of the trustworthiness of the principals and on their decision to actually trust him/her. Fourth, surprisingly, the propensity factor has a negative influence on the teachers' perceptions that their principals are benevolent. Fifth, the frequency of various kinds of interaction between teachers and principals constitute an interaction factor (i.e., frequencies are intercorrelated), and this latent factor is both the consequence of teacher perceptions of principal trustworthiness and a contributor to just one of the measurement variables assessing their willingness to actually trust (item #21 on being comfortable giving the principal a critical task or problem).

Having identified a robust structural model relating trustworthiness perceptions to actual trust and identified the influence of an overall propensity to trust and the patterns of interaction between teachers and principals, we turned attention to

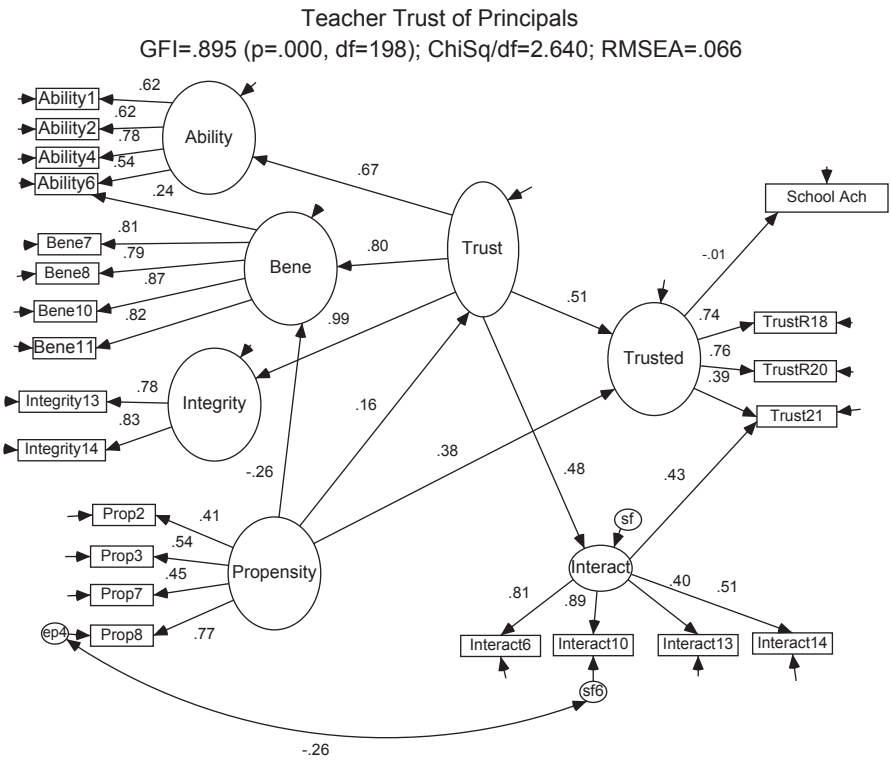

Fig. 5.3 The contribution of trust to school-wide achievement

one measure of organizational consequence—whether schools with greater trust had produced higher average student achievement. We did not have teacher by teacher achievement measures and were forced to rely on school wide averages, likely blunting the prospects of finding significant effects. As shown in Fig. 5.3, as feared, we found no relationship between the teachers' reported trust level for their principals and the overall achievement among their students. The path coefficient from "trusted" to "school ach" is a mere −0.01 (and this is the only coefficient shown in Fig. 5.2 that is not statistically significant at the $p < 0.01$ level).

Finally, we examined the relationships between teacher and principal demographic characteristics and the structure of the trust model. Put simply, we found no significant relationships between principal and teacher demographics and any of the latent factors shown in Figs. 5.2 and 5.3. It is unclear from the data for this study, however, whether the lack of relationship is due to the limited variability in the sample, the overall high levels of trust in this school district, weak demographic measures, or some other contextual factor. In any event, our data do not support any inferences about the demographic links between teacher and principal trust relationships.

5.5 Discussion

This project makes two important contributions to the literature on organizational trust in the schools. First, it not only confirms the existence of the three component factors of trustworthiness identified by Mayer and his colleagues, it demonstrates that there is a second-order global factor that helpfully summarizes the coordinated impact of these three component factors. Second, this study confirms that the principal/teacher interactions in the school are related to the levels of trust, but provides no evidence that, in this school district, at least, there is any important relationship between principal/teacher trust and the overall achievement of students in the schools.

The objectives for this study were to investigate the concept of trust, its meaning, antecedents, and outcomes as they apply to teacher trust in principals. Subjects were comprised of public school elementary teachers (N = 377) who self-selected to participate in a survey that contained questions regarding the trustworthiness of their principals, their frequency of interaction with their principals, their overall propensity to trust others, their actual level of trust in their principals, and background demographic information. A variety of research design specialists caution against biases in judgment that arise from self-selection decisions to participate (or not) in a research study. Jaccard and Jacoby (2010, p. 293–294), for example, describe ten different biasing effects that may arise ranging from not understanding the base-rate of a behavior when identifying the amount of it seen in a particular setting to wishfully thinking that the most desirable outcomes are the most frequently observed. In the current study, these biases are probably fairly low because we have examined thirteen different schools and found that one statistical model fits essentially all cases equally well. Demographic data were also gathered on each of the subjects' principals—one from each of the 13 school sites. Analyses of these data, framed by organizational theories on trust, assisted in meeting the original objectives of this study.

The data analyses were undertaken in order to construct a well-fitting structural model of teacher trust in their principals. The initial trust model was based on the work of Mayer and Davis (1999) and their study of the factor structure of trustworthiness and the actual level of trust given an individual's general propensity to trust. The model also incorporated McAllister's (1995) work on frequency of interaction between the trustor and trustee and Zucker's (1986) research on background similarity between the trustor and trustee. Student demographic contributions to the model were made to determine how they might be affecting the actual level of trust in schools. A measure of overall student achievement was also tested to see if teacher trust levels have a significant relationship with overall school level student performance.

The trust model developed from the data in this study confirms the existence of a second-order factor for trustworthiness which integrates the first-order factors for ability, benevolence, and integrity. Teachers consider their principals to be trustworthy if they view the principal as possessing high levels of ability, benevolence, and integrity. Integrity has the greatest impact on trustworthiness—followed by benevolence and then ability. A teacher's propensity to trust others was found to have its strongest effect on the actual level of trust teachers express for their principals. The

propensity factor also affects teacher perceptions of principal trustworthiness. While propensity to trust has an overall effect on principal trustworthiness, it is negatively related to the benevolence component of trustworthiness. This result is unexpected and may indicate that teachers with higher propensity to trust base their judgments of trustworthiness more on the basis of principal ability and integrity and give less weight to perceptions of benevolence—perhaps because they feel most people are benevolent and do not scrutinize the principals from this perspective. Specific frequency of interaction has a strong link to perceived trustworthiness. As the number of specific interactions increased so did the level of principal trustworthiness. The causal direction is uncertain, however. In Fig. 5.2, the coefficient shown is 0.48 with interaction frequency as the dependent variable (that is, increases in trustworthiness lead to increased rates of interaction). The linkage was tested in both directions, however, and the coefficient would be 0.46 with trustworthiness as the dependent variable. Very modest disturbances in the data could be responsible for the appearance of a stronger link with interaction as dependent on trustworthiness. There is no reason to suppose that the relationship is not interactive with greater trustworthiness producing more frequent interaction, which in turn promotes greater trustworthiness.

The factor structure accounting for actual teacher trust of their principals was found to be independent of the specific school context or the particular principal being evaluated. This was found by first constructing the structural equation model using the school identifier as a grouping variable and creating a "stacked" model allowing each school to produce its own coefficients of relationship. With the model stacked, we gradually constrained all coefficients to be identical across all of the schools. Placing these constraints did not degrade the model fit (indeed, the coefficient constrained model fits somewhat more parsimoniously than does the independent groups model). Thus, it is safe to conclude that the factor structure of the trust relationships between teachers and their principals is not significantly dependent on which school one looks at, but is, rather, a general characteristic of all thirteen schools in this study.

We also noted that, a significant relationship between principal and teacher trust and background similarity between teachers and principals as Zucker (1986) proposed does not exist in this dataset. Student demographics and overall student achievement also show no significant relationship to the trust that exists between the teachers and principals in this study.

Although this study was based on a trust model proposed by Mayer and Davis (1999), results of confirmatory factor analysis only weakly supported the Mayer and Davis model. The model developed here was unable to retain all of the measurement items of the original model without destroying the model fit. By trimming ill-fitting items, however, a robust model for the Mayer and Davis three-factor construct was identified. The final trust model remained stable for the thirteen schools in the study even when all model coefficients were constrained to be equal across schools (though two of the thirteen schools had too little response variance to be included wen the schools were separated).

McAllister's (1995) four items measuring frequency of interaction were incorporated into this study's survey. Additionally, eleven items assessing specific types of interaction between teachers and principal were included. These items covered

such things as teacher observations, discussions on student behavior (Lewis and Weigert 1985). Strong correlations among the residuals of these interaction measurements led to a majority of the items being removed—including all of McAllister's (1995) four items. The retained items covered meetings to discuss problems/issues, working on a project, attending principal-led meetings, and instances of the principal expresses praise/criticism of teaching activities. Further study needs to be conducted on the reasons why the exploratory analysis identified these variables as being appropriate to include in the model. Findings in this study depart from McAllister's (1995) conclusion that the frequency of interaction between employees and managers affect the level of supervisor trust. The relationship is much stronger to the perceived trustworthiness of the principal than to the actual level of trust.

This study's was also unable to confirm existing theories that argue that there are significant relationships between the levels of teacher trust in his/her principal and the following:

- Background similarity between a teacher and his/her principal (Zucker 1986);
- Student demographics (Zucker 1986); and
- Student achievement (Tschannen-Moran 2001; Hoy and Tschannen-Moran 2003; Bryk and Schneider 2002, 2003).

A larger sample size and/or stronger model may find stronger links between trust and teacher and/or principal backgrounds and/or student demographics and achievement. This study was limited to a single aggregate measurement of student achievement—a school's Academic Performance Index score. Other measures of student achievement (i.e. a teacher's grades, student pass rate, etc.) and/or growth in a specified measure of student achievement over time may have significant relationships to the level of teacher trust in their principals.

The primary objective of this study was to gain insight on what helps foster trust in principals. Current studies suggest that higher levels of trust in the principal leads to increased collaboration among teachers and the principal in school improvement efforts—resulting in gains in student achievement, fewer student behavior and attendance issues, etc. (Tschannen-Moran 2001; Hoy and Tschannen-Moran 2003; Bryk and Schneider 2002, 2003). However, most of these studies have been limited to measuring characteristics of a principal's trustworthiness (i.e. benevolence, integrity, competency/ability, etc.) and the level of principal trust rather than focusing on analyzing antecedents and/or outcomes of trust in depth. For example, these studies have tied trust to higher levels of student achievement—yet, there is a lack of analysis regarding whether the growth in student achievement was the result or the cause of the level of trust in the principal.

What this study proposes is that other factors other than a principal's trustworthiness need to be considered in studying the level of principal trust. Research is needed to help guide a principal's behavior and actions. One area for further research is the strong relationship between the frequency of interaction between a teacher and principal and a teacher's perception of a principal's trustworthiness. This study was limited to number of interactions. Further exploration could focus on what occurs during these interactions and/or the result of these occurrences that possibly could lead to higher levels of trust. The issue of whether low levels of student achievement (test

scores, grades, etc.) will lead to low levels of principal trust or whether a principal can build trust despite lack of growth is one area to pursue. Another area would be if there are instances of low levels of trust despite high levels of student achievement and what the principal could do to rebuild trust (or what he/she is doing to destroy trust).

One important reason further analysis of principal trust is needed is because professional development and/or principal preparation programs have been found lacking in training regarding how trust develops and is maintained among staff members (Bulach and Peterson 1999; Bryk and Schneider 2003; Brewster and Railsback 2003). If further study provides more insight to what factors have the most impact or effect on trust, principal training programs and/or staff development could integrate this information into their curriculum to increase its value and applicability to principals that seek to build trusting relationships.

Appendix A

***Part I*: Please indicate the extent to which you agree or disagree with each of the following statements. You will do this by circling the appropriate number to the right of the statement. The following format shows each response number stands for:**
5 = Agree Strongly; 4 = Agree; 3 = Neither Agree nor Disagree; 2 = Disagree; 1 = Disagree Strongly

1.	The principal is very capable of performing his/her job.	1 2 3 4 5
2.	The principal is known to be successful at the things he/she tries to do.	1 2 3 4 5
3.	I feel very confident about the principal's skills.	1 2 3 4 5
4.	The principal has much knowledge about the work that needs to be done.	1 2 3 4 5
5.	The principal has specialized capabilities that can increase our performance.	1 2 3 4 5
6.	The principal is well qualified.	1 2 3 4 5
7.	The principal is very concerned about my welfare.	1 2 3 4 5
8.	My needs and desires are very important to the principal.	1 2 3 4 5
9.	The principal would not knowingly do anything to hurt me.	1 2 3 4 5
10.	The principal really looks out for what is important to me.	1 2 3 4 5
11.	The principal will go out of her/his way to help me.	1 2 3 4 5
12.	The principal has a strong sense of justice.	1 2 3 4 5
13.	I never have to wonder whether the principal will stick to his/her word.	1 2 3 4 5
14.	The principal tries hard to be fair in dealings with others.	1 2 3 4 5
15.	The principal's actions and behaviors are not very consistent.	1 2 3 4 5
16.	I like the principal's values.	1 2 3 4 5
17.	Sound principles seem to guide the principal's behavior.	1 2 3 4 5
18.	If I had my way, I wouldn't let the principal have any influence over issues that are important to me.	1 2 3 4 5
19.	I would be willing to let the principal have complete control over my future at this school.	1 2 3 4 5
20.	I really wish I had a good way to keep an eye on the principal.	1 2 3 4 5
21.	I would be comfortable giving the principal a task or problem which was critical to me, even if I could not monitor his/her actions.	1 2 3 4 5

***Part II*: Please indicate how often you interact with the principal for each of the following statements. You will do this by circling the appropriate number to the right of the statement. The following format shows each response number stands for:**
5 = Daily; 4 = Weekly; 3 = Monthly; 2 = Every Few Months; 1 = Yearly; 0 = Never

1.	How frequently does the principal initiate work-related interaction with you?	0 1 2 3 4 5
2.	How frequently do you initiate work-related interaction with the principal?	0 1 2 3 4 5
3.	How frequently do you interact with the principal at work?	0 1 2 3 4 5
4.	How frequently do you interact with the principal informally or socially at work?	0 1 2 3 4 5
5.	How frequently do you exchange emails or telephone calls with the principal?	0 1 2 3 4 5
6.	How frequently do you meet with the principal to discuss problems and/or issues?	0 1 2 3 4 5
7.	How frequently do you meet with the principal to discuss your teacher evaluation and/or observations?	0 1 2 3 4 5
8.	How frequently do you attend a faculty meeting held by the principal?	0 1 2 3 4 5
9.	How frequently do you help supervise students with the principal?	0 1 2 3 4 5
10.	How frequently do you work on a project with the principal?	0 1 2 3 4 5
11.	How frequently do you encounter the principal out and about in the school building or grounds?	0 1 2 3 4 5
12.	How frequently has the principal urged you to adopt district program guidelines or materials?	0 1 2 3 4 5
13.	How often has the principal led staff development or training sessions?	0 1 2 3 4 5
14.	How frequently has the principal expressed praise or criticism of teaching activities by any staff members?	0 1 2 3 4 5
15.	How frequently has the principal raised concerns about student behavior or discipline?	0 1 2 3 4 5

***Part III*: Please indicate the extent to which you agree or disagree with each of the following statements. You will do this by circling the appropriate number to the right of the statement. The following format shows each response number stands for:**
5 = Agree Strongly; 4 = Agree; 3 = Neither Agree nor Disagree; 2 = Disagree; 1 = Disagree Strongly

1.	One should be very cautious with strangers.	1 2 3 4 5
2.	Most experts tell the truth about the limits of their knowledge.	1 2 3 4 5
3.	Most people can be counted on to do what they say they will do.	1 2 3 4 5
4.	These days, you must be alert or someone is likely to take advantage of you.	1 2 3 4 5
5.	Most salespeople are honest in describing their products.	1 2 3 4 5
6.	Most repair people will not overcharge people who are ignorant of their specialty.	1 2 3 4 5
7.	Most people answer public opinion polls honestly.	1 2 3 4 5
8.	Most adults are competent at their jobs.	1 2 3 4 5

***Part IV*: Please circle the response that best describes you.**

1. Highest degree obtained:	A. BA/BS B. MA/MS (30 units) C. MA/MS (60 units) D. EdD E. PhD F. Other: ____
2. Gender:	A. Female B. Male
3. Age:	A. 22-32 B. 33-43 C. 44-54 D. 55-65 E. 66+
4. Total years teaching:	A. less than 1 year B. 1-3 years C. 4-6 years D. 7-9 years E. 10-12 years F. 13-15 years G. 16+ years.
5. Total years employed at current school site:	A. less than 1 year B. 1-3 years C. 4-6 years D.7-9 years E. 10-12 years F. 13-15 years G. 16+ years.
6. Demographic group you most closely identify with:	A. African American B. American Indian/Alaska Native C. Asian D. Filipino E. Hispanic or Latino F. Pacific Islander G. White (not of Hispanic origin) H. Other

Appendix B

Survey Response Descriptive Statistics

Table B1 Teacher perceptions of principal trustworthiness and trust

Variable	Label	Min	Max	Mean	Std Dev
Principal ABILITY items					
P is capable of performing his/her job.	ABILITY1	2	5	4.54	0.62
P is known to be successful.	ABILITY2	2	5	4.47	0.67
I feel confident in P's skills.	ABILITY3	1	5	4.50	0.71
P has knowledge of work to be done.	ABILITY4	2	5	4.51	0.67
P has specialized capabilities for work.	ABILITY5	1	5	4.15	0.88
P is well qualified.	ABILITY6	2	5	4.56	0.63
Principal BENEVOLENCE items					
P is concerned about my welfare.	BENE7	1	5	4.28	0.89
My needs/desires are important to P.	BENE8	1	5	4.21	0.87
P would not knowingly hurt me.	BENE9	1	5	4.47	0.82
P looks out for what is important to me.	BENE10	1	5	4.08	0.89
P goes out of his/her way to help me.	BENE11	1	5	4.25	0.87
Principal INTEGRITY items					
P has strong sense of justice.	INTEGRITY12	1	5	4.31	0.86
P will stick to his/her word.	INTEGRITY13	1	5	4.36	0.91
P tries to be fair in dealing with others.	INTEGRITY14	1	5	4.46	0.79
P's actions and behaviors are not consistent.	INTEGRITY15	1	5	4.04	1.18
I like the P's values.	INTEGRITY16 (R)	1	5	4.31	0.85
Sound principles guide P's behavior.	INTEGRITY17	1	5	4.26	0.93
Principal TRUST items					
I wouldn't let P influence issues important to me.	TRUST18 (R)	1	5	3.96	1.06

Table B1 (continued)

Variable	Label	Min	Max	Mean	Std Dev
I would let P have complete control over school.	TRUST19	1	5	2.74	1.17
I wish I could keep an eye on the P.	TRUST20 (R)	1	5	4.23	1.03
I would give P critical task or problem	TRUST21	1	5	4.06	0.91

Note: Items labeled with (R) are reverse coded

Table B2 Frequency of teacher/principal interactions and propensity to trust items

Variable	Label	Min	Max	Mean	Std Dev
FREQUENCY of INTERACTION items					
P initiates work-related interactions?	FI1	1	5	3.77	0.80
I initiate work-related interactions?	FI2	1	5	3.52	0.87
Interact with P at work?	FI3	2	5	4.10	0.84
Interact with P informally or socially at work?	FI4	1	5	3.20	1.12
Exchange emails or phone calls with P?	SFI5	1	5	3.68	0.78
Meet to discuss problems or issues?	SFI6	1	5	3.46	0.77
Meet to discuss evaluation/observation?	SFI7	2	4	2.27	0.45
Help supervise students with P?	SFI9	3	5	3.48	0.51
Work on project with P?	SFI10	0	5	3.20	0.79
Encounter P out and about school grounds?	SFI11	3	5	4.25	0.46
P urged you to adopt guidelines/materials?	SFI12	1	5	1.67	0.52
P has led staff training/development?	SFI13	1	4	1.89	0.53
P has expressed praise or criticism of teaching?	SFI14	1	4	3.09	0.71
P has raised concerns about student discipline?	SFI15	1	4	2.46	0.55
PROPENSITY to TRUST items					
One should be cautious with strangers.	PT1	1	4	2.37	0.90
Experts tell truth about their limits.	PT2	1	5	2.70	0.81
Most people do what they say they will.	PT3	1	5	3.38	0.75
Be alert or people will take advantage of you.	PT4	1	5	2.72	0.88
Sales people honestly describe their products.	PT5	1	4	2.58	0.73
Repair people will not overcharge you.	PT6	1	4	2.51	0.76
People answer opinion polls honestly.	PT7	1	5	3.18	0.80
Most adults are competent at their jobs.	PT8	1	5	3.38	0.72

Table B3 Social and demographic characteristics of the sample

Variable	Label	Min	Max	Mean	Std Dev
TEACHER, PRINCIPAL and SCHOOL Characteristics					
Teacher Gender: 0=F; 1=M	TGENDER	0	1	0.26	0.44
Teacher is Afro American	TDEMOA	0	0	0.00	0.00
Teacher is Native American	TDEMOB	0	0	0.00	0.00
Teacher is Asian American	TDEMOC	0	1	0.02	0.13
Teacher is Filipino	TDEMOD	0	1	0.01	0.09
Teacher is Hispanic	TDEMOE	0	1	0.19	0.39
Teacher is Pac Islander	TDEMOF	0	0	0.00	0.00

Table B3 (continued)

Variable	Label	Min	Max	Mean	Std Dev
Teacher is White	TDEMOG	0	1	0.67	0.47
Teacher is Other	TDEMOH	0	1	0.12	0.32
Average School API Score	APISCHOOL	760	851	789.10	29.05
Percent Non-White Students	MINORITY	42.6	95.99	74.47	18.50
ELL Population	ELLPOP	9	78	46.72	28.53
Spec Ed Population	SEDPOP	19	79	54.70	22.26
Total School Enrollment	ENROLL	474	935	803.41	105.66
Number of Teachers in School	NTEACHERS	24	47	40.44	5.21
Free/Reduced Lunch Eligible	LAAPOP	28.18	94.52	67.80	21.29
Principal Degree Held (1 = BA/BS; 4 = EdD)	PDEGREE	2	4	2.30	0.60
Principal Gender (1– F; 2 = M)	PGENDER	1	2	1.67	0.47
Principal Age (2 = 33–44; sd ~ 2.3; Mean ~ 43.5)	PPAGE	2	3	2.95	0.21
Principal Years in Teaching	PYRSTEACH	4	5	4.56	0.50
Principal Years as Principal	YRSP	2	4	2.98	0.73
Teacher Educ Level (1 = BA/BS; 4 = EdD)	TDEGREER	1	4	1.69	0.86
Tchr Age Grp (2 = 33–44; sd ~ 10 yrs; Mean ~ 35)	TAGER	1	4	2.17	0.95
Tchr Yrs Taught Grp (4 = 7–9 yrs; sd ~ 4.7 yrs)	TYRSTEACHR	2	7	4.26	1.56
Tchr Yrs in School (3 = 4–6 yrs; sd ~ 4.7 yrs)	TYRSSITER	1	7	3.17	1.58

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Part II
Trust and Teaching

Chapter 6
The Effects of Standards Based School Accountability on Teacher Burnout and Trust Relationships: A Longitudinal Analysis

Anthony Gary Dworkin and Pamela F. Tobe

6.1 Introduction

In a complex society the education of each successive generation of students is placed in the hands of strangers who are assumed to be benevolent, caring, committed to the welfare of children, and competent. Effective schools and school reform rest upon the mutual trust among stake-holders; in fact, it is the presence of mistrust that can sabotage efforts for substantial and beneficial change (Tschannen-Moran and Hoy 2000; Hoy et al. 2000, 2006; Bryk and Schneider 2002; Forsyth et al. 2006). The emphasis of these studies has been on the social psychology of interpersonal trust. However, the causes and effects of trust operate at more than the individual or interpersonal level.

Global factors, including the national movement toward greater school accountability and the implementation of such accountability strategies, including the mandate for high-stakes testing, can play dominant roles in the shaping and maintenance of relational trust. Accountability mandates have consequences for the morale of school actors, often because their implementation alters vulnerabilities of actors and tests the extent to which actors view one another as benevolent, reliable, competent, honest, and open (Tschannen-Moran and Hoy 2000). The present chapter explores the longitudinal effects of changing school accountability mandates on teacher morale and burnout and its relationship with teacher trust of school administrators, colleagues, students, and the parents of their students. The mandates have increasingly altered teachers' expectations about their job security and therefore, challenged the level of trust that teachers have in those whose performances affect their fate and compensation.

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6.2 Trust

The concept of trust is multifaceted. In their analysis of urban elementary schools, Hoy and Tschannen-Moran (1999) conceptualized five dimensions of trust associated with schools: competence, benevolence, reliability, honesty, and openness, while Hoy and Tarter (2004) add vulnerability to the listing. Tschannen-Moran and Hoy (2000) conducted a meta-analysis of studies of the facets of trust (willingness to risk vulnerability, confidence, benevolence, reliability, competence, honesty, and openness). Building on Coleman's work on social capital, Bryk and Schneider (2002) examined two forms of relational trust: organic and contractual. This dichotomy traces its ontological origins back to Toennies, Weber, and especially Durkheim, all of whom distinguished between social relations based on organic and mechanical solidarity, or what would be found in a folk or urban society (i.e., a *gemeinschaft* or a *gesellschaft*). For Bryk and Schneider "Organic trust is predicated on the more or less unquestioning beliefs of individuals in the moral authority of a particular social institution, and characterizes closed, small-scale societies" (Bryk and Schneider 2002, p. 16). Trust is interwoven into the very fabric of social relations and its violation is met with outrage and even severe sanctions (Durkheim 1964; Homans 1961; Blau 1964).

Contractual trust by contrast, is weakly vested in moral-ethical relations. "A contract defines basic actions to be taken by the parties involved. The terms of the contract explicitly spell out a scope of work to be undertaken by the parties involved, or a product or service to be delivered" (Bryk and Schneider 2002, p. 17). Because of its specificity, the task of determining whether the terms of a contract have been met or violated is relatively simple. Violation of the terms of the contract are likely to be met with lawsuits. In modern, complex societies, both organic and contractual trust are present, although there is a predominance of contractual trust. Difficulties often arise when individuals view contractual work relations as if they were based on organic trust. Thus, relations that are specified in contract and occur in bureaucratic settings are overly interpreted as based on a common moral and emotional footing. Violations of the terms of a contract are thus seen as betrayal.

It is our contention that the result of the shift from organic to contractual trust, occasioned by an expanding school accountability system, has resulted in heightened levels of teacher burnout. Prior to externally-based accountability, the mutual understanding between teachers and school districts was that teachers would provide instruction in the best interests of their students and districts offered autonomy in the classroom. This understanding constituted a loosely coupled system (Weick 1976). Only when there was clear evidence of incompetence or a teacher failed to consider the best interests of children would districts intervene.

Contractual trust however, demands accountability and specifies penalties for its violation. The supposition of contractual trust is that teachers will act in their own best interests over those of their students, and need to prove routinely there competence. Ironically, the basis for contractual trust is distrust of the individual. This distrust demands accountability but also redefines relationships in schools from teacher and student, mentor and mentee, to seller and buyer, or merchant and

customer. Students (or the parents and community) pay for a commodity and the sellers (schools and their employees) must deliver to the satisfaction of the buyer or his/her surrogate (student).

The growth in the size of schools, particularly in urban areas, has created an environment where the lack of inter-personal connectedness within the school jeopardizes the effectiveness of the school. People do not know one another but they also don't know where or how they fit into the functioning of the school. Yet, the very size and complexity of the school organization necessitates an awareness of interdependence which is likely to be lacking. The pathological outcomes of a diminished sense of interdependence can be alienation, burnout and distrust.

Parental perceptions of the school and its work, and the trust and cooperation needed between home and school to create an effective school learning environment, is more difficult in situations of diversity. Teachers and principals may come from very different cultural references (economics, linguistics, values) than their students and parents. Further, teachers and principals may also have different cultural references amongst themselves. This lack of understanding between cultural references can lead to further distance between individuals and engenders distrust. Tschannen-Moran and Hoy (2000) noted that confidence, reliability and competence are central facets of trust. When class and cultural differences exist between teachers and others in the school (especially students and their parents) it is likely that teachers will assume that there is also a lack of shared values. The perceived lack of shared values in this diverse environment reduces the confidence in the abilities and intentions of others, including doubts regarding the competence, reliability, and belief in the good intentions of others (benevolence).

6.3 School Accountability and the Modified Social Contract

Eighty years ago, in his seminal study of teaching, Willard Waller observed that "the political organization of the school is one which makes the teacher dominant, and it is the business of the teacher to use his *(sic)* dominance to further the process of teaching and learning which is essential to social interaction of the school" (1932, p. 9). More than 40 years later Dan Lortie noted that school administrators exercised limited authority over teachers, as teachers "may choose to pay little heed" (1975, p. 74) to their supervisors, especially if they were tenured. Colleges of education imparted in their students the sentiment that teachers had professional autonomy once they closed their classroom doors. In fact, Weick (1976) described the school organization in which teachers and their instruction were minimally coupled to the expectations of school administrators, state education agencies, and the public as a "loosely coupled" system.

The status of teachers was lower than that of many professions, in part because it was a predominantly female occupation, and in urban areas in the latter part of the twentieth century, an occupation with sizeable minority incumbents. Teaching, according to Lortie (1975, p. 10) is a "special" but "shadowed" occupation.

> Teaching seems to have more of its share of status anomalies. It is honored and disdained, praised as "dedicated service" and lampooned as "easy work." It is permeated with the rhetoric of professionalism, yet features income below those earned by workers with considerably less education. It is middle-class work in which more and more the participants use collective bargaining strategies developed by wage-earners in factories. (1975, p. 10)

However, until the development of the Standards-based School Accountability Movement, teaching offered one guarantee. Teachers could assume that unless they committed serious offenses, they were guaranteed life-time employment. The trade-off in public school teaching was that once one gained tenure, or a permanent contract, an individual was assured job security. Under the new accountability system, teachers can no longer expect to have classroom autonomy or that their employment would always be secure. The result has been increasing levels of teacher burnout and changes in the nature of the trust between teachers and other stake-holders in schools.

In fact, there is evidence that the morale of America's teachers has been negatively impacted by the various waves of school reform. Detailed analyses by Dworkin and his colleagues (Dworkin and Townsend 1994; Dworkin 1997, 2001; Dworkin et al. 2003) have displayed the changing effects of school reform legislation on teacher burnout.

6.4 The Standards-based School Accountability Movement

The Standards-based School Accountability Movement can trace its origins to the release under the Reagan administration of the report *A Nation at Risk* (1983) by the National Commission on Excellence in Education. The report held that the nation was at risk of failing to remain competitive against other economies of the world because the nation's students were deficient in science, mathematics, and an array of other skills linked to a globally competitive labor force. Recently, Dworkin and Tobe (2012a) chronicled the waves of school reforms that followed the 1983 commission report, including "*America 2000*" in the first Bush administration, "*Goals 2000*" in the Clinton administration, "*No Child Left Behind*" (*NCLB*) in the younger Bush administration, and "*Race to the Top*" in the current Obama administration.

Each wave of reform has initiated greater demands for accountability imposed upon schools and teachers, leading to competency testing of teachers in some states (following *A Nation at Risk*), decentralized decision-making and a call for world class academic standards (following *America 2000*), the use of high-stakes standardized testing to assess student achievement (*Goals 2000*), and the use of the results of high-stakes testing to assess schools and teachers (*No Child Left Behind* and a *Race to the Top*). The later reforms (especially *No Child Left Behind*) incorporated progressively increasing standardized passing criteria for sub-groups of students (based on ethnicity, poverty status, home language status) to judge school and

teacher performances. Low performances resulted in the right of students to change schools and determined whether schools should be closed and re-opened as charters with a completely new staff.

The reform movement did not emerge by chance. Conservatives, business leaders, and middle class parents had expressed concern over perceived changes in schooling following the Civil Rights Movement, school desegregation, and a focus on diversity and multiculturalism. Each of these changes was seen as claims-making efforts by previously excluded groups whose gains threatened those with more power, privilege and property. Berliner and Biddle (1995) labeled *A Nation at Risk* (1983) a product of a *Manufactured Crisis* intended to result in the weakening of the public schools and the passage of legislation that would permit the middle class to redirect their public school tax dollars toward private school tuition. The Standards-based School Accountability Movement rests on an array of assumptions about public schools and human motivation. The core premise of the movement has been that the public schools are broken and that only through *external* intervention can they be fixed. Further, the imposition of free market forces and competition, which advocates of the reforms suggest have worked so well for American industry, will turn the schools into more efficient and effective systems for the delivery of educational services.

School accountability systems assume that schools and school personnel cannot adequately evaluate how well they are preparing the nation's children for college and careers, instead, assessments must be based on externally-imposed standards and tests. Externally-imposed accountability systems, by their very nature, assume that some outside agent needs to hold accountable individuals whom if left to their own efforts would fail to teach adequately or would not make adequate academic progress. External accountability systems are premised upon a *hierarchy of distrust.* The public and federal policy makers including business, have little trust that the state's will provide an education that prepares children to be part of a competitive labor force in a global economy. In turn, states do not trust the school districts, and school districts do not trust their principals, teachers, and ultimately students (Dworkin and Tobe 2012b). Nevertheless, *NCLB* and *Race to the Top* assume that through threats and the prospect of school closures and the termination of school employees, the school districts will work harder and help students raise their achievement test scores by legitimate means. However, in a hierarchy of distrust, actors focus on the appearance of desired learning outcomes and not necessarily the actual attainment of the substance of those learning outcomes. There have been numerous analyses of how state education agencies, school districts, schools, and school personnel "game the system." A few of these analyses include those by Booher-Jennings (2005), Booher-Jennings and Beveridge (2007), Weitz-White and Rosenbaum (2007), and Dworkin (2008). Additionally, work by Dworkin et al. (1994, 1997, 2003, 2009, and Dworkin and Tobe 2012b) have explored how each of the waves of school reform affected the morale of teachers and the likelihood that teachers will burn out.

Phi Delta Kappa/Gallup Polls reported every September in the PDK magazine report public attitudes about the public schools. They also represent a form of an

index of public trust or distrust in educational institutions. During the period when A Nation at Risk was released, public confidence in the public schools (PDK/Gallup) were at their nadir. The PDK/Gallup Poll asked respondents to provide grades from "A" to "F" to the nation's public schools and to the local schools in the respondents' communities. As has always been the case, people have a more favorable opinion of their own local schools than schools across the nation. Years earlier, when the first Gallup Poll of public confidence in the public schools was published at the end of the 1960s, half of the American public gave grades of "A" and "B" to the performance of the nation's schools and a higher percentage gave similar grades to their local schools (Elam et al. 1993). By the time of the publication of *A Nation at Risk* (1983), less than one third of Americans gave high marks to the public schools. More recently the percentage of respondents giving high grades to the nation's schools has risen, but never to the levels seen in the 1960s (PDK 2012).

6.5 Teacher Burnout

The term "Burnout" was first coined by the psychologist Freudenberger (1974) to describe a condition in which human service professionals such as teachers, nurses, and social workers, "wear out." Following Freudenberger (1974) publication, psychologists offered an operationalization of the construct and developed a scale to assess burnout. The most frequently used psychological measure of burnout was the scale developed by Christine Maslach (1978a, 1978b, 1993). The Maslach Burnout Inventory (MBI) identified three dimensions of burnout: emotional exhaustion, a sense of loss of personal accomplishment, and depersonalization where the student, patient or client was at fault. Subsequent work by Maslach and Jackson (1981), Cherniss (1980 and 1992), Iwanicki and Schwab (1981), and more recently by Friedman (1991, 1995, 2003) and Farber (1991) validated the dimensions. Burnout leads human service professionals to withdraw emotionally from their work, to perform less effectively, and even to become hostile toward those they are expected to help. Most psychological models of burnout 'blame the victim' or attribute to the victims an unwillingness to cope with multiple life stressors. From a psychological perspective, burnout is seen as a personal weakness rather than an institutional weakness; the solutions are therefore aimed at changing the individual by enhancing coping skills and stress management (Abell and Sewell 1999; Farber 1991; Gold and Roth 1993; Pines 1993).

Alaya Pines (1993), in another psychological approach, characterized burnout as an existential crisis, where the value of the individual's work and sense of self-worth are questioned. In this conception of burnout, teachers come to question why they are doing this unappreciated and underpaid job and question what difference their efforts make. These questions reflect self-doubt, a diminished sense of self-worth and value of their work. Workers often define themselves in terms of their work roles; diminished satisfaction with work represents diminished appraisal of their own worth.

As a sociological concept, burnout is explained in terms of structural and organizational causes, rather than as a result of failings of the individual to cope with stress. The initial sociological view arose from six dimensions of alienation (Seeman 1959, 1975) powerlessness, normlessness, meaninglessness, isolation, self-estrangement, and cultural-estrangement. In this conceptualization of burnout, teachers may feel powerless in the educational system or in their school; normless in that school rules may be perceived as dysfunctional, unenforceable or non-existent; meaningless because they are unable to achieve their personal goals or incapable of making a difference in their students' lives; feel isolated or estranged from their colleagues and principal; and teachers may believe their students and families do not share the same cultural and educational values as they do.

Stress can still be a precipitating factor in teacher burnout but from the sociological view the causal elements operate within the organization of schooling, the policies that dictate how teachers are appraised, and how they are expected to conduct themselves within their teaching role. Accountability systems that hold teachers responsible for the learning outcomes of their students in settings where teachers have little control over the non-classroom activities of their students, create structural barriers that deprive teachers of their sense of control over outcomes.

Both psychological and sociological conceptualizations of burnout posit job-related stressors as casually implicated. The hierarchy of distrust that underlies current high-stakes accountability systems exacerbates job stress and hence, burnout. The result of increased job stress is a diminution in teacher trust of students and administrators, and this can become circular. Increased stress leads to increased burnout, which results in decreased trust of students, colleagues, and administrators, which heightens job stress and in turn burnout. In fact, Dworkin et al. (2003) noted that especially in high poverty schools, neither the teachers nor the principals are willing to place their personal fate in the hands of their students and their students' parents and therefore they adopt pedagogical styles that leave little to student initiative and reject democratic schooling. Instruction limits student choices and tends to emphasize the so called "drill and kill" formats. Teachers are less satisfied with their jobs when they do not trust their students (Van Houtte 2006), such trust is dependent upon teachers' perception of the teachability of the students (Van Maele and Van Houtte 2011). In turn, teacher trust is also diminished when there are significant cultural and class differences between teachers and students (Van Houtte 2007).

Analysis of samples of Texas teachers surveyed in 1977, 1986, and 1991, which included data collected prior to the Standards-based School Accountability Movement, during its inception under *A Nation at Risk*, and after the implementation of America 2000 revealed a pattern in burnout levels for teachers with varying years of experience (Dworkin and Townsend 1994). In the 1977 data set, burnout was highest among neophyte teachers and lowest among teachers with 15–20 years of experience. However, when the first school reforms were instituted and required competency testing of teachers, burnout levels in those data (1986) were significantly higher for all experience levels than in the previous 1977 study. Burnout in 1986 was highest among teachers with between 10 and 15 years of experience who they considered themselves to be competent, but the accountability system assumed that they were no different than new teachers and had to prove themselves. By the

time of the 1991 survey, competency testing and accountability had become a way of life and teacher burnout subsided to levels that were mid-way between those found prior to the reforms and those found at the inception of reforms. Subsequent cohorts of teachers produced levels of burnout that varied with the extent to which the newer reforms threatened their continued employment (Dworkin 2001, 2009; Dworkin et al. 2003; Dworkin and Tobe 2012b).

6.6 Predictors of Teacher Burnout

Substantial research has outlined the factors that either contribute to teacher burnout or that sustain its opposite, teacher resiliency. A catalogue of such predictors has been summarized in Dworkin (1987, 2009). Most researchers agree that job stress is a key factor in creating burnout (Freudenberger 1974; Maslach 1978a, 1978b, 1993; Maslach and Jackson 1981; Cherniss 1980, 1992; Pines 1993). Other factors found to be significant include teacher demographic characteristics such as gender, ethnicity, and teaching experience; role conflict and role ambiguity (Schwab and Iwanicki 1982), which heightens job stress; and the presence of support by administrators and colleagues, which enhances coping abilities. These factors that exacerbate or retard burnout are briefly described in what follows.

Job Stress The two major perspectives of teacher burnout, one based on clinical psychology and one based on sociology, both see job stress as a central causal element. The psychological perspective conceives of burnout as a stress-induced response characterized by emotional exhaustion, a loss of a sense of accomplishment, and depersonalization. The sociological perspective also sees stress as instrumental in burnout, but contends that burnout is a form of role-specific alienation, characterized by feelings of powerlessness, meaninglessness, isolation, normlessness, and estrangement. The gap between the expectations created in pre-service training and the experiences of teachers in classrooms, especially the highly stressful classrooms of high-poverty schools exacerbate the sense of burnout. Pre-service public school teachers come to expect through their training that they will be accorded professional autonomy and professional respect. They often feel that teaching is a calling and that their students will eagerly accept the knowledge that they have to offer. Their experiences are at considerable odds with their expectations. They are often faced with few resources in the classroom and treated with little respect and much abuse.

Safe Schools Schools that are fraught with drug and gang problems, disruptive students, and bullying students create two categories of stressors that adversely affect teacher morale and a sense of trust. The presence of danger heightens teacher job stress, a significant causal factor in burnout. In this current era of school accountability, teachers are assessed on the extent to which they raise student standardized test scores; campus insecurity and danger affect student achievement of the vic-

tims of school violence and bullying, and also the performance of the whole class, including the bullies (Bru 2009). Thus, a school that is not safe and secure is likely to have depressed test scores amongst all students, resulting in elevated teacher stress due to fear of negative job appraisals, increased burnout, and diminished trust among individuals within the school.

A broad array of activities can make a school unsafe and insecure, some of which constitute illegal acts and others that diminish the effectiveness of teaching and learning. Three elements of unsafe and insecure schools included in the construct are the presence of legally-defined crimes against the person or property, student bullying behaviors, and markedly disruptive student behaviors in class.

Schools that are persistently dangerous under NCLB can be deemed INOI (In Need of Improvement) and can face sanctions, including school closing. Dangerous schools impact teachers and exacerbate burnout in two distinct ways. The threat of teacher and student victimization is itself a stressor that can affect teacher morale and burnout. Additionally, dangerous schools tend to be low-performing schools, with teaching and learning disruptions depressing student performance.

In schools where gang violence and criminal activities spill over from dysfunctional neighborhoods, the level of job stress experienced by teachers and administrators significantly increases their burnout and diminishes their work commitment. Vettenburg (2002) noted how teachers who feel unsafe in their workplace have difficulty focusing their attention on teaching and the stress associated with the perception of physical danger diminishes their commitment to their students and their work. The investigator further noted that mitigating student aggressive behavior alone was less significant than changing the organizational climate. Likewise, Orpinas et al. (2000) noted that both students and teachers who feel unsafe are more likely to miss class; it is the organizational climate that defines the work environment for teachers and reinforces a sense of distrust of students, colleagues, and administrators.

Prior work has also linked the lack of school safety, teacher burnout, and distrust for two reasons. Increased risk of crime and victimization of teachers is in itself a job stressor, which can heighten burnout. However, victimization of students is associated with diminished academic performance of those victimized and those who are victimizers. Even if the safety issues are limited to psychological bullying behavior (as opposed to violent crime) or disruptive student behaviors, the results are that students will learn less, perform less well on tests, including state-mandated standardized tests, and thereby increase the accountability risk to schools and teachers. Further, diminished student achievement adversely affects the teachers' sense of accomplishment, as the teacher has less evidence that her/his teaching practices have been effective in promoting learning. It is therefore expected, that in relatively unsafe schools, teacher burnout will be higher and that as the accountability system changes from minimally threatening to severe (e.g., school closings and staff terminations), burnout levels among the teaching staff will increase.

Principal and Peer Support Stinnett and Henson (1982) and Duke (1984) argued that principals and peers could provide social buffering and support that would

reduce teacher burnout. Similar observations were made by Dworkin (1987, 2009), Saros and Saros (1992), and Blasé (2009). In his early study of teacher burnout, Dworkin (1987) examined four kinds of principal teacher relationships: principal was not influential and unsupportive, principle was not influential and supportive, principal was influential and unsupportive, and principal was influential and supportive. Under the conditions of principal supportiveness (regardless of level of influence on district administration) the relationship between job stress and teacher burnout was not significant. Unsupportive principals on the other hand were associated with a strong relationship between job stress and teacher burnout. The level of teacher reported job stress did not differ across the four types of principals, suggesting that a supportive principal breaks the functional connection between job stress and burnout.

Peer support was also associated with reduced teacher burnout, however, Dworkin et al. (1990) found that only when the principal was supportive would peer support have a significantly diminish burnout. However, the threat of school closure under accountability systems may lead to principals being placed under greater stress, too. Such stress can lead principals to be less trusting of their staff, thereby exacerbating burnout among all involved. Additionally, unsupportive and stressed principals so affect all teachers that attempts at supportiveness by colleagues reinforces the tensions that pervade the job. In attempting to provide support colleagues validate the perceived stress levels. However, Dworkin (2009) noted that as the school accountability system imposed stressors on principals, their capacity to serve as a buffer and reduce teacher burnout diminished.

Teacher resilience and decreased burnout are cited as products of collegial support in the research by Howard and Johnson (2004) and Freidman (2003). It would be expected that school reform strategies, including team teaching associated with mainstreaming of special education students, content specialization, curriculum standardization, and response to intervention strategies, would increase collaboration among teachers and create contexts for mutual support. We would then expect that the role of collegial support in mitigating teacher burnout would also improve over time. One countervailing pressure on collegial support, is the reward structure in accountability systems that has teachers competing for bonuses and thus perhaps less willing to share effective practices.

6.7 The Context of Trust and Burnout: Introduction to the Data Sets

The data used in the current study are drawn from a single, large school district in the Houston metropolitan area. The students from the district generally come from families living in poverty (82 % of the students are on free or reduced lunch status) and are overwhelmingly minority group members (Latino, African American, and Asian American). The total student body numbers over 60,000 and the teaching staff exceeds 4,000 individuals assigned to 67 campuses. Demographically, the district

resembles the majority of the school districts that are within the City of Houston and the areas that closely surround the city. The district has received awards from the Texas Education Agency, as well as national awards, for the performance of their students on state mandated standardized achievement tests (the Texas Assessment of Academic Skills [TAAS], and later the Texas Assessment of Knowledge and Skills, [TAKS]). Nevertheless, campuses in the district have a range of accountability ratings assigned to them by the Texas Education Agency (from "Exemplary" to "Low Performing"). The senior author has worked with the district and its upper administration for 20 years and conducts annual attitudinal climate surveys for the district.

The 2002 teacher data set was enumerated early in the spring of the year, soon after the passage of *No Child Left Behind*, but before any of the accountability details were made public. In fact, the survey was completed before the "Dear Colleague" letter that specified terms of the new law was sent out to state education agencies by US Secretary of Education Rod Paige. Although Texas had a working accountability system with student testing and the evaluation of schools in place for several years, there was little evidence to suggest that low student performance would have consequences for teachers or schools within the state at the time of the 2002 survey. However, the 2002 survey was collected four months after 9/11 and three months after the beginning of the war in Afghanistan. Thus, the social context in which the survey was conducted remained with numerous stressors. The 2002 data set consisted of 2,869 surveys of K-12 teachers.

The 2004 survey was also administered during the spring semester. The state legislature had enacted a law ending social promotion as a practice for students who failed the state-mandated standardized test, the TAAS (1994–2002) and the TAKS (2003–2011). Students in grades three, five, and eight had to pass relevant sections of the test in order to avoid having to attend summer school or repeat the current grade. While *No Child Left Behind* had specified consequences for teachers and school when student failure resulted in schools and districts not meeting their AYP goals, AYP passage standards were still relatively low in the 2003–2004 academic year. Teachers recognized that, while testing had become high stakes for students, the reality of teacher terminations if a school failed to meet AYP goals was minimal. Recently, Dworkin and Tobe (2012a, b) described this time period through 2010 as one in which teachers had become cynical about the threats to continued employment specified by *NCLB*. In reality, few if any teachers lost their jobs due to low student achievement in Texas schools. The 2004 survey consisted of the responses of 1,771 K-12 teachers.

The 2006 survey would likely have produced similar results as that of 2004, except for the effect of Hurricane Katrina on Houston area schools. The hurricane that destroyed many parts of New Orleans resulted in more than 150,000 residents of Louisiana migrating to the Houston area. Many school districts, and especially those in high-poverty regions of the metropolitan area, were inundated with thousands of children, many traumatized by the loss of their homes and family members. Further, the students coming from New Orleans schools were often well behind their Houston classmates in academic preparation. They had left low-performing or In Need of

Improvement (INOI) schools in Louisiana for better-performing schools in Houston. This alone challenged teachers who could not assume requisite knowledge on the part of the incoming students. Additionally, many of the school districts in Houston sought to keep the Louisiana students on the same campuses, either to contain the students or in order to enable the recent immigrants with a social network. Unfortunately, the decision permitted the reconstitution of the gang structures from some of the New Orleans schools. Survey research conducted for one school district by the authors revealed considerable threats of gang violence experienced by the Houston students attending schools with many transplanted students. There were 1,497 K-12 teachers who participated in the 2006 survey. Significant attitudinal anomalies were found for teachers, administrators and parents in 2006 surveys.

The data collection in 2009 follows the US economic crisis that occurred the fall semester before. Although many teachers experienced some decline in the value of their savings, the state retirement fund seemed to be healthy and most teachers could continue to assume that their jobs were also safe. Teacher layoffs were not yet an issue in early 2009, thus, most teachers remained somewhat cynical about risks to job security. The 2009 sample consisted of 1,825 teachers in grades K-12.

The Texas Legislature meets every other year and passes biennial budgets. The Legislature met in late spring 2009 and generally imposed budget cuts in programs and the reduction of overhead (including making buses more efficient). The surveyed district pledged not to lay-off teachers but focused on increasing efficiency in all services and used attrition. Thus, by 2010 there was only moderate evidence that the schools would experience budget shortfalls large enough to result in the termination of programs and layoffs of teachers. The 2010 survey reflects the continued belief by teachers that their jobs were secure, despite the mandates of *No Child Left Behind* for schools that failed to meet their AYP objectives. Many urban schools in Texas began to incorporate value-added models based on student test scores to assess teacher performance. High student gain scores drove additional compensation for some teachers, while lower gain scores resulted in no additional compensation. Many teacher organizations challenged the validity of the process and the calculation of value-added. Nevertheless, the accountability system resulted in no clear evidence that teachers were losing their jobs. A total of 1,560 K-12 teachers participated in the 2010 survey.

The pledge by conservatives in the Texas government not to raise taxes resulted in substantial cuts in the funding of many Texas agencies. However education suffered more than other sectors of the state economy. In 2011, the Texas Legislation and the governor addressed the shortfall in funding for state agencies by significantly reducing the state education budget. In 2010–2011 the budget cuts led to the use of low student performance as a reason for teacher layoffs. Reductions in per student funding of Texas public school amounted to a loss of more than $ 5.4 billion over the biennium. By 2012, Texas public schools lost more than 25,000 positions, including nearly 11,000 teaching jobs (Houston Chronicle 3/17/12, p. 1). The Houston area school districts lost nearly 3,000 teaching positions, some due to attrition (failure to fill jobs after teachers leave) and some due to the termination of

programs. The school district surveyed had a reduction in workforce of 6 %, mainly through attrition but had a resultant increase in class sizes.

Consequently, teachers in the 2012 survey recognized that the threats to job security *NCLB* and the Texas accountability system had advocated were becoming realized. Since many school districts in the United States rely on principals to make the initial recommendations for program closures and staff layoffs, the relationship between teachers and principals and the content of teacher-principal trust has been modified in light of the budget crisis. The sample of K-12 teachers surveyed in 2012 consisted of 1,575 individuals.

6.8 Hypotheses

This data analysis addresses two central issues: (1) the content of the accountability system and (2) changing effect sizes of the predictors of burnout in light of modifications to the accountability system. Specifically, the first asks how a modification to the content of the accountability system alters the level of teacher burnout experienced by the samples. That is, when accountability increased risks to continued employment, does the level of burnout change? Similarly, social factors heighten risks to the safety of teachers, or increase their workload (including class sizes), will these social factors be reflected in changes in the level of teacher burnout?

The second issue asks whether increasing risks to job security, caused by changes in the accountability system, or changes in social factors, affect the relative explanatory power of individual predictors of teacher burnout. That is, will the relative effect sizes of job stress, role conflict, school safety, and trust of the principal, colleagues, and students and their parents change when accountability makes job security more tenuous? Likewise, will changes in the mix of the student body alter the configuration of predictors that account for teacher burnout?

Hypothesis associated with the Magnitude of Teacher Burnout H1: As the increasing demands of the accountability system combine with decreased school funding and resources, the higher will be the level of teacher burnout.

Hypotheses Associated with the Effect of Predictors H2: Principals—as resources allocated to schools diminish under budgetary constraints, trust of principals by teachers will decrease due to their role in decision making on program cuts and teacher terminations.

H3: Colleagues—as the increasing demands of the accountability system combine with decreased school funding and resources, teachers will become more supportive of one another and thereby increase their level of collegial trust. Alternatively, it is plausible that competition for scarce and diminishing resources could lead to decreased collegial trust.

Table 6.1 Teacher burnout scale scores across years

Year	Mean scale score	S.D.	*N*
2002	0.036	0.96	2,869
2004	−0.133	0.985	1,771
2006	0.107	0.997	1,497
2009	−0.189	0.958	1,825
2010	−0.011	0.999	1,560
2012	0.241	1.085	1,575

H4: Students and Parents—as teacher performance evaluations and job security increasingly depend upon improving student test performance the less likely teachers will be to trust students and their parents.

6.9 Results

6.9.1 Changes in Burnout Levels

Presented in Table 6.1 are the means and standard deviations for the burnout scale scores for each sample of teachers collected between 2002 and 2012. Burnout is measured using the ten item role-specific alienation scale used by Dworkin and his colleagues since 1987. The scale values are in z-score format, with a mean of zero and a standard deviation of one. The scale values are likely to change depending upon the mix of attitudes and experiences held by teachers in each year, thereby causing some patterns of responses to the ten Likert items to have different scale values at one time or another. All 10 items used in the burnout scale across the six time periods were therefore pooled to develop a common scale that permits year by year comparisons. The same procedure was conducted on the items that comprise the other constructs, including the three measures of trust, stress, role conflict and role ambiguity, and school safety.

Significant differences in burnout scale scores were detected through the computation of a one-way ANOVA, followed by a Sheffe test for homogenous subsets. The Sheffe test revealed that 2004 and 2009 did not differ from one another, but displayed significantly lower mean burnout scores than did the other years. The years 2002, 2006, and 2010 were not significantly different from each other (although 2006 burnout means approached being higher than the other years), while 2012 was an extreme outlier with the highest mean burnout score.

The 2002 mean score may reflect some of the stress still felt because of 9/11, but also because testing was becoming higher-stakes, directly for students, but indirectly for teachers. The “no social promotion policy” passed by the Texas Legislature in 1999 began implementation in 2003. Teachers in 2002 knew there would be retention in grade based upon new, more rigorous, standardized tests (TAKS) that

Table 6.2 Means and standard deviations of burnout predictors

Year		Stress	Safe school	Role conflict	Principal trust	Colleague trust	Student and parent trust
2002	Mean	−0.347	0.028	0.623	0.162	0.114	−0.222
	S. D.	0.882	0.960	0.870	0.792	0.777	0.953
2004	Mean	−0.367	0.073	0.610	0.190	0.125	0.324
	S. D.	0.869	0.966	0.923	0.847	0.751	0.990
2006	Mean	0.318	−0.087	−0.482	0.036	0.026	−0.545
	S. D.	0.987	1.076	0.771	0.879	0.752	0.778
2009	Mean	0.075	0.207	−0.616	0.204	0.195	0.407
	S. D.	0.957	0.940	0.753	0.797	0.724	0.997
2010	Mean	0.286	−0.056	−0.481	−0.053	0.119	0.468
	S. D.	1.002	1.013	0.779	0.861	0.771	0.956
2012	Mean	0.500	−0.275	−0.359	−0.674	−0.667	−0.378
	S. D.	1.030	1.020	0.821	1.455	1.696	0.788

would require them to make retention decisions with all the accompanying social and organizational implications.

When teachers realized that the threats associated with NCLB did not result in terminations, the 2004 burnout levels declined. The teachers had been working with the new TAKS exam for over a year and had learned to teach to it. The 2006 year saw the influx of many high-risk, traumatized students from the post-Katrina New Orleans schools and stress levels were high for teachers, parents, and students. Burnout mean scores rose significantly. After the majority of the students from New Orleans left or assimilated into the Houston schools, job stress declined. Although the national economic recession had begun in 2008 and was even more severe in 2009, teachers in Houston were not experiencing downsizing of school districts or campuses. Consequently, burnout levels remained significantly lower than the multi-year average. By spring 2010, the economy had affected the Houston labor market. Despite the fact that teacher layoffs were not yet occurring, districts were asked by the state legislature to trim their budgets and economize. Burnout was slightly higher than in 2009, but still below that of the multi-year average. When layoffs occurred in 2011 and 2012, the level of burnout rose significantly to a mean substantially higher than had been seen before.

Teacher burnout levels appear to be sensitive to changes in the accountability system, decreased school funding which challenges job security and increased class sizes, and the perceived level of school safety. Consequently, H1 is supported by the multi-year data.

6.9.2 Changes in Predictors of Burnout

Table 6.2 displays the means and standard deviations of the burnout predictors across the six time periods. Following ANOVA's for each of the constructs across

Table 6.3 Effect of predictors on teacher burnout across years (standardized regression coefficients)

Predictors	Beta 2002	Beta 2004	Beta 2006	Beta 2009	Beta 2010	Beta 2012
Teacher stress	**0.123**	**0.069**	**0.268**	**0.266**	**0.325**	**0.336**
Safe school	**−0.298**	**−0.219**	**−0.176**	**−0.105**	**−0.189**	**−0.234**
Role conflict/ ambiguity	**0.106**	0.009	**0.246**	**0.190**	**0.221**	**0.211**
Principal trust	**−0.262**	**−0.259**	**−0.162**	**−0.184**	**−0.140**	−0.043
Colleague trust	**−0.103**	**−0.084**	**−0.059**	**−0.082**	**−0.112**	**−0.145**
Student and parent trust	**−0.149**	**−0.282**	**−0.113**	**−0.228**	−0.044	−0.001
Black teacher	−0.001	**0.047**	**0.051**	0.023	0.043	0.032
Latino teacher	0.026	**0.049**	0.027	**0.048**	0.051	−0.041
Female teacher	−0.009	**−0.053**	**−0.081**	**−0.085**	−0.046	−0.013
Grade level	**−0.051**	**−0.044**	−0.034	−0.033	0.019	0.001
Years teaching	−0.017	−0.031	−0.019	0.005	−0.019	−0.025
Constant sig.	**0.007**	**0.004**	**0.001**	**0.001**	NS	N.S.
Adjusted R^2=	**0.337**	**0.478**	**0.524**	**0.559**	**0.509**	**0.504**

Notes: Statistically significant predictors ($p<0.05$) are in **bold**
Years of Education was not significant in any of the years

years, Scheffe post-hoc tests of significance were computed to determine statistically significant differences between years. The advantage of the Scheffe over other post-hoc tests is that it does not require equal n-sizes each year.

The mean scores for the predictors followed a similar pattern as was found for *Burnout*. *Job Stress* was significantly higher in 2012 than any other year and was followed by 2006 and 2010. Other years had significantly lower mean scores for stress. *School Safety* was seen as highest in 2009 and lowest in 2012, followed by 2006 and 2010. *School Safety* was compromised by budget cuts and increased class sizes in 2012, and in 2006 by the changing student body. Economizing in 2010, including reductions to campus police budgets, resulted in perceived threats to school safety. *Role Conflict and Ambiguity* was highest in 2002 and 2004, as the Texas accountability system and its variant under NCLB were taking shape.

Principal Trust was significantly lower in 2012 than in any other year, followed by 2006 and 2010, and significantly higher in 2002, 2004, and 2009. *Colleague Trust* was also lowest in 2012 and highest in 2009. Finally, *Student and Parent Trust* were lowest in 2006 with the influx of students from New Orleans, followed by 2012, and higher in 2004, 2009, and 2010.

Table 6.3 presents standardized regression coefficients for the predictors of burnout, including the three trust measures, for each of the years, permitting comparisons of the relative effect size of each predictor. Statistically significant standardized predictors are displayed in boldface.

Across the six time periods the Adjusted R^2 varied from 0.337 to 0.559. Beginning in 2006 with the Katrina students *Job Stress* has become the most powerful predictor and even more so in 2010 and 2012 with a commensurate increase in the variance explained by the model (adjusted R^2).

Table 6.4 Predictors of teacher burnout across years (unstandardized regression coefficients)

	2002	2004	2006	2009	2010	2012
Predictors	*b* (se)	*b* (se)	*b* (se)	*b* (se)	*b* (se)	*b* (se)
Teacher stress	**0.135 (0.035)**	**0.069 (0.036)**	**0.273 (0.024)**	**0.263 (0.021)**	**0.318 (0.031)**	**0.359 (0.031)**
Safe school	**−0.309 (0.030)**	**−0.220 (0.032)**	**−0.161 (0.025)**	**−0.107 (0.028)**	**−0.187 (0.035)**	**−0.249 (0.035)**
Role conflict/ambiguity	**0.118 (0.040)**	0.010 (0.045)	**0.316 (0.036)**	**0.244 (0.033)**	**0.281 (0.046)**	**0.284 (0.045)**
Principal trust	**−0.313 (0.045)**	**−0.297 (0.046)**	**−0.183 (0.031)**	**−0.222 (0.028)**	**−0.156 (0.037)**	−0.051 (0.037)
Colleague trust	**−0.128 (0.033)**	**−0.110 (0.034)**	**−0.078 (0.030)**	**−0.108 (0.028)**	**−0.139 (0.036)**	**−0.201 (0.036)**
Student/parent trust	**−0.157 (0.024)**	**−0.260 (0.023)**	**−0.168 (0.031)**	**−0.204 (0.020)**	−0.041 (0.025)	−0.002 (0.034)
Black teacher	−0.003 (0.051)	**0.115 (0.051)**	**0.125 (0.051)**	0.054 (0.044)	0.100 (0.065)	0.079 (0.064)
Latino teacher	0.081 (0.071)	**0.148 (0.065)**	0.072 (0.058)	**0.121 (0.049)**	0.121 (0.068)	−0.109 (0.071)
Female teacher	−0.020 (0.051)	**−0.134 (0.052)**	**−0.209 (0.054)**	**−0.201 (0.045)**	−0.105 (0.064)	−0.034 (0.065)
Grade level	**−0.057 (0.027)**	**−0.056 (0.028)**	−0.042 (0.028)	−0.039 (0.024)	0.022 (0.036)	0.002 (0.036)
Years teaching	−0.010 (0.014)	−0.020 (0.014)	−0.013 (0.014)	0.003 (0.012)	−0.012 (0.018)	−0.003 (0.003)
Constant Sig.	**0.007**	**0.004**	**0.001**	**0.001**	N.S.	N.S.
Adjusted R^2=	**0.337**	**0.478**	**0.524**	**0.559**	**0.509**	**0.504**

Notes: Statistically significant predictors ($p<0.05$) are in **bold**
Years of Education was not significant in any of the years

Generally teacher demographics had a minimal and often non-significant effect on *Burnout*. The key constructed variables of *Safe School, Teacher Stress,* and *Colwleague Trust had a significant effect each year* on *Teacher Burnout*. *Role Conflict and Ambiguity*, was significant each year except in 2004. *Principal Trust* ceased to be significant in 2012, while *Student and Parent Trust* were not significant in 2010 and 2012.

To what extent were the changes in the effect size of each predictor significantly different over time? To address that question it will be necessary to examine the un-standardized regression coefficients (*b*'s) and their standard errors. The question whether a *b* for a predictor at time one is different from a *b* for that same predictor at time two can reasonably be answered using a test of the significance of difference between two *b*'s (Clogg et al. 1995). Table 6.4 displays the unstandardized coefficients (*b*) and their standard errors (*se*) for each predictor in order to observe changes in the effect size of a predictor over time. Standard errors are almost the same each year for any given independent variable.

Prior research has shown that *Stress* is usually the strongest single predictor of *Burnout* and this was certainly the case in 2012 and also in 2010. The effect of *Stress* was higher in 2012 than in any prior year other than 2010. In 2002 and 2004, *Stress* had less of an effect than the variables of *Principal Trust* and *Student/Parent Trust*. Since 2006, *Stress* has become the strongest predictor of teacher *Burnout*.

The role of *Principal Trust* in decreasing *Burnout* declined and became non-significant in 2012. Conversely, the role of *Collegial Trust* in decreasing *Burnout* was highest in 2012. *Student and Parent Trust* became non-significant in predicting *Burnout* in 2010 and 2012.

Safe School reduced *Burnout* in all years but had a stronger effect in 2002 and 2012. *Role Conflict and Ambiguity* also had a greater effect on *Burnout* in 2006 and subsequently. The three trust measures demonstrate significant changes in their relationship to *Burnout* across the time periods.

There is a general decline in the effect of *Principal Trust* on the reduction of *Burnout*. The 2002 data indicates that *Principal Trust* is one of the two strongest predictors of diminished *Burnout* but by 2012 *Trust of Principal* has no effect on *Burnout*. We conclude that the non-significant relationship between *Principal Trust* and *Burnout* is a consequence of the budget cuts and the role of the principal in determining which programs and personnel will be terminated. In addition to making difficult budgetary decisions, the continued tenure of principals is dependent upon their schools meeting adequate yearly progress goals (AYP) under *NCLB*. They are consequently more stressed by their changing roles and less able to be supportive of their teachers. Relationships between the principal and teachers initially based on organic trust have changed to the more bureaucratic form of trust (Lee et al. 1991) and in turn have weakened the principal's ability to reduce teacher burnout. As principals become more stressed and burned out themselves the less ability they have to be supportive of their teachers. In turn, the lack of supportiveness by principals fails to buffer teacher burnout but exacerbates teacher stress, further heightening burnout for both teacher and principal. The relationship between teacher and principal

stress and burnout then becomes circular and cumulative with the pressures of the accountability system.

Colleague Trust remained a modest but significant factor in reducing teacher burnout throughout the time periods. However, when *Principal Trust* ceased to have a mitigating effect on burnout in 2012, *Colleague Trust* increased its beneficial effect on burnout. It was as if teachers were transferring their reliance on principals for support to their colleagues—likely because colleagues have a shared fate. Nevertheless, the mean scores for both *Principal Trust* and *Colleague Trust* diminished significantly, especially by 2012. Thus, while neither principals nor colleagues were as highly trusted by the time that job security was being jeopardized, each unit of trust assigned to either group had different effects on burnout. Colleagues may be supportive, but they are not expected to be effective in providing job security. In fact, they may actually be competitors for diminishing resources (including continued employment). However, principals are expected to provide security and if they do not or cannot do so, they are likely to be perceived as betraying their staff and hence, less trustworthy. The fluctuation in the relationship between burnout and the principal and colleague trust measures are consistent with the predictions of H2 and H3. The mean trust levels for colleagues diminished across the time periods as the accountability system, budgetary issues, and other stressors increased (Table 6.2). This provides support for the alternative hypothesis that colleagues are competitors for diminishing resources, reducing the overall level of *Colleague Trust*.

Student/Parent Trust is significant only until 2009. As job risk increased due to accountability and budgetary problems, trust of parents and students no longer decreased *Burnout*. The effect of budgetary constraints and the school accountability system have conjoined to change the relationship between teachers and students and hence teachers and parents. When student achievement had minimal effects on teacher job security and bonuses, teachers' trust in the competency of students (one of the five facets of trust noted by Tschannen-Moran and Hoy 2000), had few consequences. Parental involvement, generally associated with higher student achievement, was not as important when job security was not threatened by low student test scores. Increasing risks due to accountability and the budgetary cuts made more salient the extent to which teachers were dependent upon the actions of people over whom they had very little control. It should be recalled that the essence of trust is the willingness to place in the hands of others outcomes that are valued by the individual (Curall and Inkpen 2006). Job security is one such outcome and hence, the data supported H4.

6.10 Discussion

The data provided support for all four research hypotheses, although additional factors have operated to impact teacher burnout. Schools are dynamic organizations in which myriad events impinge upon the routines of teachers, administrators, and students. Thus, changes in accountability standards and the extent to which the job

security of teachers is affected by those standards is nuanced by history effects, including the impact of a devastating hurricane that changed the school populations and similar devastating effects of the national and state economy that caused the state government to limit school funding. The accountability system in Texas and the escalating expectations for student performance mandated by NCLB (changes in AYP) increased stress levels for teachers and in turn, elevated the extent to which they displayed burnout responses. However, when there was evidence that the draconian threats of the accountability system were not being realized in terms of job terminations, stress and burnout levels diminished. But, once budgetary constraints imposed on school districts resulted in the closing of programs and the layoffs of personnel, the accountability system affected job security.

Burnout represents a diminution in work satisfaction and altered relationships with those in the workplace. As external stressors increased burnout levels rose and the mix of predictors changed. Trust and burnout tend to co-vary negatively. Burnout is affected by contextual factors, including those that affect workload, interpersonal dynamics, and job security. Many individuals entered teaching with the assumption that their efforts would make significant differences in children's lives. Poverty has the ironic effect of making children more needful of what teachers can offer, but also more likely to resist or at least appear to be unappreciative of those offers. The result is often that students and teachers come to think that the other does not care (LeCompte and Dworkin 1991) or is untrustworthy (Van Houtte 2006). Dworkin (1987) illustrated how principal support and trust, as well as colleague support and trust, could serve as compensatory factors in maintaining morale in light of lower student performances and support. In high poverty schools, trust of one's principal and one's colleagues made up for the fact that students were not always making a year's academic progress each year. Furthermore, teachers, once they had attained tenure, were promised job security.

The Standards-based School Accountability Movement in the United States altered the equation and the understandings that school stakeholders had with one another. Teachers were no longer trading lower pay for job security (compared with the business sector); they were recipients of both lower pay and job insecurity. Additionally, the terms of their contract with society changed. It was not their own efforts that determined how well they were appraised; rather it was the efforts of their students on externally created, standardized tests. Additionally, their own appraisals had significant ramifications for continued employment and even the likelihood that their schools could be closed. Schools that systematically failed to meet AYP goals under *NCLB* could lose significant (and likely high-performing) members of their student bodies and face reorganization as a charter school with an entirely new teaching staff.

Prior to the external accountability system the trust between stakeholders, and especially between principals and teachers, was organic in nature. Trust was based not simply on the roles of teacher and administrator, but also included friendships among school personnel. In urban school districts relationships were often more formal than in rural contexts mostly because of school size but the bureaucratic formality has been exacerbated by high stakes standards of accountability. The dichotomy

of organic and contractual trust is an *ideal type*, no actual relationship in large-scale social systems is purely one or the other. Both before and since accountability, trust relationships have contained a combination of formal and informal elements however, the issue is one of the relative weight of one kind of trust versus the other. The externally-based accountability system shifted the balance toward more contractual trust, where friendships counted for very little. In a system in which personal relationships count for very little and in which there is distrust between contracting partners, external threats leave individuals with few resources for real support and trust. Burnout becomes more likely and there are fewer interpersonal factors that can effectively militate against it, thus there is a circular aspect to burnout and trust. The accountability system, especially as manifested in the Texas system and in *No Child Left Behind*, is based on a theory that prescribes threats of punishment for poor performance as a motivator of teachers and students to perform better (Dworkin 2008). Such threats, however, enhance burnout and diminish trust among school actors. As Forsyth et al. (2006) and Hoy and Tarter (2004) each have demonstrated, effective school improvements are predicated on a climate of trust and a sense of justice. Accountability systems that emphasize punishments destroy trust, exacerbate burnout, and defeat the intended goals of that system.

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Chapter 7
Trust at Ground Zero: Trust and Collaboration Within the Professional Learning Community

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7.1 Literature Review

Professional learning communities (PLCs) have been extolled in the research as a way to improve student learning through the collaborative efforts of teams of teachers in a school culture with a results orientation (DuFour et al. 2005). During collaboration, teachers focus on achievement data, which drives instruction and specific intervention strategies for students. Lack of trust within collaborative teams and between teams and school administrators responsible for leading PLCs is problematic for schools (Tschannen-Moran 2001). The absence of sufficient trust within an interdependent team increases the vulnerability of teachers, inhibiting communication and shared understanding, making it difficult for schools to meet their goals for student learning (Tschannen-Moran and Hoy 2000). Trust improves teachers' willingness to collaborate and share their instructional practices with others. Forsyth et al. (2006) argue that "the route to maximizing a school's effectiveness lies along a path that is not immune to conscious efforts at building teacher and parent trust. The centrality of trust in school organizations seems unassailable" (p. 138). This research examined how trust developed and its role in facilitating collaboration within one school's learning community—operating under challenging conditions—as they began the implementation of PLCs. Findings indicate trust played a critical role in the development of collaborative teaming, particularly within a challenging context.

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7.1.1 Professional Learning Communities

An increasing number of schools and districts have adopted PLCs as a way to enhance student achievement. Research has concluded that student achievement increases when teachers and administrators formally collaborate in purposeful ways (Goddard et al. 2007; Gallimore et al. 2009; Forsyth et al. 2006). In a review of literature on the effects of PLCs, Vescio et al. (2008) concluded that "[The] unequivocal answer to the question about whether the literature supports the assumption that student learning increases when teachers participate in PLCs…is a resounding and encouraging yes" (p. 87). Thus, if implemented correctly, students stand to benefit from schools that adopt PLCs, which requires a significant shift from a focus on teaching to a focus on learning (DuFour et al. 2005).

A key characteristic of a school-wide PLC is collaborative teams. These teams consist of teachers, generally in the same department, content area, or grade level and meet together regularly to clarify purpose and priorities… participate in continuous improvement cycles of gathering data on student achievement, identify areas of concern, generate strategies for improving students' performance, support each other as they implement those strategies, and gather new data to assess the impact of their collective efforts (DuFour 2002, p. 31). The focus on student achievement should define and drive the purposeful actions of these collaborative teams. DuFour (2002) suggests that "when [schools] are relentless in their efforts to improve achievement for all students, they increase the likelihood of sustained, substantive school improvement. The research is clear and compelling on this point" (p. 31).

PLC's have three components that exert equal influence (Toole and Louis 2002; Bolam et al. 2005; Stoll and Louis 2007; Hord and Hirsch 2008): a client-oriented and knowledge-based culture; an emphasis on learning at every level in the school through reflection and inquiry; and an atmosphere of community characterized by high quality relationships. This conceptualization recognizes the importance of the type and quality of relationships within collaborative teams and within the entire school culture. "Research tells us that successful collaborative efforts include strategies that 'open' practice in ways that encourage sharing, reflection, and taking the risks necessary to change" (Vescio et al. 2007, p. 84). This type of culture, which requires participants to make themselves vulnerable to each other, will inevitably thrive or wither depending on the degree of trust that exists within collaborative teams and throughout school systems.

7.1.2 Importance of Trust

Trust is a critical component in the implementation and effectiveness of PLCs (Tschannen-Moran 2001; Bryk and Schneider 2002; Halverson 2003; Bryk et al. 2010). Trust enhances innovation (Zander and Kogut 1995), collaboration (Rousseau et al. 1998), and knowledge transfer (Leana and Pil 2006) within organizations in general and specifically within schools (Tschannen-Moran 2004). "Trust fosters

a set of organizational conditions, some structural and others social-psychological, that make it more conducive for individuals to initiate and sustain the kinds of activities necessary to affect productivity improvements" (Bryk and Schneider 2002, p. 116). Teams of teachers with high degrees of trust disclose more relevant and accurate information (Wrightsman 1992; Zand 1972; Fairholm 1994) and exhibit a higher level of organizational citizenship, defined as the willingness of employees to work beyond the minimum requirements of their position (Tschannen-Moran 2003). Tschannen-Moran (2001) also asserts "in organizations with a high level of trust, participants are more comfortable and are able to invest their energies in contributing to organizational goals rather than self-protection" (p. 313).

General definitions of trust emphasize dependence, vulnerability, risk, and reliability between parties (Gambetta 2000; Rotter 1967). Within educational contexts, Tschannen-Moran and Hoy (2000) provide a commonly used definition of trust: "Trust is one party's willingness to be vulnerable to another party based on the confidence that the latter party is (a) benevolent, (b) reliable, (c) competent, (d) honest, and (e) open" (p. 556). They suggest that school administrators and teachers should pay attention to and develop these five facets to increase opportunities of being perceived as trustworthy by colleagues.

7.1.3 Collaboration within PLC's and Trust

Collaboration is an interdependent activity because one party's success depends on the success of another party. Teachers often use collaboration to share teaching ideas and help each other solve problems (Butler et al. 2004). Over the last decade, research has shown that schools with teachers who collaborate demonstrate increased student achievement (Chapman et al. 2009; Goddard et al. 2007; Louis 2007).

Will teachers collaborate without trust? High levels of trust within a school are related to high levels of collaboration; but, when trust is absent, people are more reluctant to work closely together (Tschannen-Moran 2001). If teachers do not trust one another, they may be less likely to share their instructional practices and student achievement data. Without trust, a teacher's energy may be used in self-protection rather creating relationships with other teachers in order to teach more effectively (Tschannen-Moran and Hoy 2000). Conversely, teachers who trust each other are more likely to build effective collaborative teams with real impact on student learning (Tschannen-Moran 2001). Gill (2003) labeled trust as the glue that unites people together. Relationships of trust act as conduits for the flow of information within collaborative teams and throughout the school. Adults learn more when they collaborate, work harder, support one another emotionally, and commit to cumulative efforts (Garmston and Wellman 1997). Tschannen-Moran (2001) advises that collaboration and trust are reciprocal processes; they depend upon and foster one another. Collaboration takes place between autonomous partners who choose whether or not to participate [make themselves vulnerable], therefore, it is unlikely that collaboration will develop without at least a measure of trust (p. 313).

Van Maele and Van Houtte (2011) showed that when teachers hold similar assumptions regarding students' ability to meet educational expectations, collegial trust is strengthened. Teachers inevitably develop common assumptions regarding their students' ability to learn during collaboration, and therefore building collegial trust is an important outcome of regular team meetings.

7.1.4 The Contingency Model of Leadership Effectiveness

This study examined how principal leadership affected trust development within the school's learning community. Given that principal leadership plays a critical role in the development of trust within schools (Whitener et al. 1998), Fiedler's (1965) Contingency Model of Leadership Effectiveness provides a useful lens for examining how leadership affects trust development in PLCs. Fiedler (1979) claims that no one best leadership style is effective in all contexts. Rather, Fiedler found that the most effective leadership styles are *contingent* upon the two interrelated factors: (1) the orientation of the leader—whether their primary focus is on developing relationships with others or the accomplishment of tasks, and (2) the favorability of the situation—including leader-member relations, task structure, and leader position power (Bons and Fiedler 1976). Leader-member relations refers to "the amount of cohesiveness in the work team and the support of the team for the leader" (Ayman et al. 1995, p. 155). A favorable situation occurs when high cohesiveness exists and the group accepts the leader. Task structure represents the "clarity and certainty in the task goals and procedures that allow the leader to confidently guide the group's activities" (Ayman et al. 1995, p. 156). The situation is favorable when tasks are structured and clear, and the leader knows how to accomplish the tasks. Leader position power is defined as the "administrative authority bestowed on the leader by the organization or other source of authority" (Ayman et al. 1995, p. 156). Position power can also be determined by the amount of rewards and punishments the leader can or will impose on the subordinates for non-compliance (Miller et al. 2004). The situation becomes increasingly favorable as the leader's power and influence increases.

Fiedler's Contingency Model (1965) suggests leader effectiveness in a given favorability situation relies on the interaction between the leader's orientation (task or relationship) and the situational favorability (leader-member relations, task structure and leader power) (Miller et al. 2004). "Task-motivated leaders perform most effectively in very favorable and in very unfavorable situations, while relationship-motivated leaders perform more effectively in situations that are moderately favorable" (Miller et al. 2004; Bons and Fiedler 1976). We use this model as a theoretical lens to describe and explain the context—what *Trust at Ground Zero* looked like—and how the orientation of the leader affected trust development within this challenging situation.

In sum, PLCs affect student achievement when collaborative teams focus on student learning results. Trust affects the general function of collaboration because

of its interdependent nature. The development of trust can facilitate collaborative teams, and leadership style can play an important role in the development of trust relationships.

7.2 Problem Statement and Research Questions

This study examined how trust evolved and how the level of trust helped or inhibited collaboration within PLCs, specifically under challenging school conditions. Given that PLCs are becoming a common strategy for schools to improve student learning and, that PLCs require effective collaboration, and that trust is a significant factor in creating a collaborative culture, the development of trust is critical to a school's ability to achieve goals of learning for all students. If collaborative teams of teachers do not have sufficient trust, they will not be open and make themselves vulnerable to each other by sharing their student achievement data and effective instructional practices, thus limiting their growth as teachers and resulting in a negative impact on student learning. When school administrators better understand how to recognize and reinforce the importance of trust, including how it functions and develops in teams, they can better support the development of trust in collaborative teams and develop a high trust school culture to facilitate learning for all students. This study adds to the current body of research, which consistently reports a meaningful connection between trust and collaboration in a PLC, by examining the development of trust in a school in the midst of change under challenging circumstances, including the move to PLCs. The following research questions guided our study:

1. How is trust developed specifically within challenging school conditions?
2. What is the role of trust in facilitating teacher collaboration within PLCs?
3. How do challenging school conditions affect both trust and collaboration in PLCs?

7.3 Methods

This qualitative research explored trust development in a case study of a school experiencing challenging school conditions (i.e., new principal, new school configuration, pressure from the district office to develop a PLC and other initiatives) and explored the role of trust in its collaborative teams. We utilized constant-comparative methods of analysis and grounded our findings in the data (Glaser and Strauss 1967). We selected the school—Timber Intermediate School (pseudonym) located in the western United States—based on purposive sampling with the two criteria of a school beginning to implement PLC teams and having recently undergone a new school configuration.

7.3.1 Research Context

Timber was established in 2010 after its rural school district built a new high school. The existing junior high school moved to the vacant high school building, leaving the old junior high school building unoccupied. The school board created an intermediate school in this building by bringing all of the 5th grade students from the elementary schools and all of the 6th grade students from the junior high school. However, this new arrangement meant combining teachers from an elementary school setting (e.g., teaching all subjects to a set of students that stayed with them all day) with teachers from a junior high school setting (e.g., department and speciality teachers, teaching different groups of students for 50 min each period).

School and district leadership further complicated the situation. The district directed that the new school would function like a traditional elementary school, requiring the former junior high school teachers to teach all of the subjects for a specific set of students. The district also pressured the school into several new initiatives including *becoming* a PLC. As part of the PLC structure, the teachers were assigned grade-level to teams; however, they gave no rationale to teachers about how they selected team leaders. While the district built time into the schedule for weekly team collaboration, the principal provided limited professional development to guide and direct the implementation of PLC concepts. Additional district initiatives included implementing a one-to-one laptop initiative for the 6th grade and the Sheltered Instruction Observation Protocol, an explicit model for teaching both language and content that teachers can use to improve the academic success of English language learners. The former junior high school teachers were also required to learn a new math and literacy program. These initiatives occurred while teachers were still adjusting to new colleagues on their grade level teams.

This study began at the beginning of the second year. At this point, the school leadership has just changed. The first principal had stayed only one year. The new principal, Donna (pseudonym), was unwillingly assigned to the school from an elementary school and had no experience at the secondary level, making it difficult for her to relate to the 6th grade teachers. The school had still not met to develop a collective mission and vision to facilitate a common purpose. The new principal and teachers complained that the district superintendent was forcing the vision by dictating the books that every district employee would read and discuss. Lastly, the school did not make Adequate Yearly Progress (AYP) during its first year in the new school configuration, which added pressure to raise the performance of the school or face sanctions. All of these changes combined to create a recipe for continuing discontent, decreased job satisfaction and extremely challenging school conditions.

7.3.2 Sampling and Data Collection

All 27 teachers at Timber participated in the case study. Twenty (74%) teachers were female and 7 (26%) were male. The average number of years in the teaching profession was 11 years, and most of the teachers were at Timber the entire three

years (2.7) since it opened. Teachers were evenly distributed by grades (48 % in 5th grade and 52 % in 6th grade), with only 3 (11 %) teachers reporting a grade change during the last three years.

This study conducted three focus groups with teachers during Year 2 and 3. The first and second focus groups, conducted at the beginning and end of Year 2 respectively, used the same sample of teachers ($n = 8$). The principal chose the teachers based on the selection criteria of having one available representative (not the team leader) from each of three 5th and three 6th grade level PLC teams, one special education teacher and one gifted teacher. The third round of six focus groups, held at the beginning of Year 3, included one for each of the three 5th and three 6th grade PLC teams. Focus groups included all team members—the leader and teachers. Special education or gifted teachers were asked to participate in one of six focus groups, based on their schedule convenience. Focus groups were held at the school, guided by an interview protocol designed to address the research questions (see Appendix A). Focus groups lasted approximately one hour and were digitally recorded and then transcribed to support textual data analysis. In addition to the focus group interviews, all teachers participated in an online survey at the end of year 3 regarding teacher demographics and perceptions of both team trust and effectiveness.

7.3.3 Data Analysis

We analyzed data from the online survey using basic descriptive statistics. We used qualitative analysis of the textual data from the focus groups using a grounded theory method (Glaser and Strauss 1967) with both emic and etic coding strategies (Strauss and Corbin 1998). First, with an emic strategy, the development of descriptions and explanations of trust development and collaboration within- and across-teams were drawn from themes and patterns that emerged directly from the data. Emic coding of the textual data sought to describe and explain the development and evolution of trust within and across teams and between the teams and the administration. Analyses identified emergent themes and patterns using open, axial, and selective coding (Marshall and Rossman 2011) and matrix queries (Strauss and Corbin 1998) to support data-driven descriptions and explanations regarding trust development and its role in collaboration in a challenging context.

Second, we used an etic strategy in which we coded data against pre-existing sources in the literature. First, we coded teacher perceptions of Tschannen-Moran and Hoy's (2000) five facets of trust (benevolence, openness, honesty, reliability, and competence). We coded for teachers making themselves vulnerable to the other collaborative team members or indicating a willingness to do so. Second, we etically coded evidence of formal PLC practices and informal collaboration based on the three domains of the Formative Assessment of Collaborative Teams (FACT) tool: preparation, collaboration and instruction (Taylor et al. 2013) (see Table 7.1). Lastly, we also coded the data based on DuFour et al. (2006) four essential questions regarding effective PLCs:

Table 7.1 FACT tool domains and sub-domains

FACT tool domains	Sub-domains	Selected examples of checklist items
Preparation	Protocols	Agreed upon group rules of conduct or norms
	Action plans	Action plans cover both academic and behavioral domains for individual and group/grade interventions
	Agenda	Meeting agenda is distributed prior to meeting-day
	Evidences	Every team member brings records (e.g., grade-books, attendance sheets, computer files, etc.)
	Attendance	Every member is present and on-time.
Collaboration	Roles	Team members carried out their assigned duties and roles
	Participation	Every team member made a substantive contribution to the meeting dialogue
	Expertise	Team members have identified evidence-based practices
	Professionalism	Every team member was on-task.
	Productivity	Instruction or learning is modified, informed by data
Instruction	Standards	Every team member can trace an obvious connection between each classroom lesson and a component of an accepted core curriculum
	Instructional strategies	Instructional strategies for both academic and behavior management are modeled on evidence-base practices
	Assessment	Every team member uses both academic and behavioral common formative assessments
	Screening	Every team member has identified students in greatest academic and behavioral need
	Goals	For each identified student/group of students every teacher has written explicit academic and/or behavioral goals
	Data analyses	Every team member has data on each identified student/group of students that is organized in a table or graph
	Interventions	Every student or group of students who fail to meet an academic and/or behavioral goal is given additional time and support until the goal is met
	Professional development	Professional learning is agreed upon by all team members and is relevant to FACT instruction items

1. What do students need to know and be able to do?
2. How do we know when they know it?
3. What do we do when they have not learned it yet?
4. What do we do when they already know it?

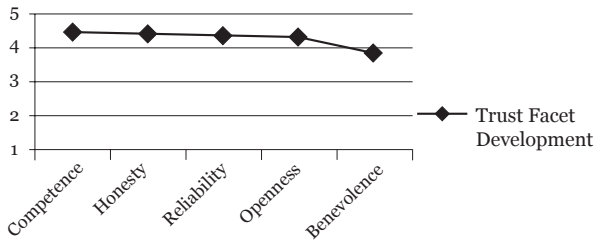

Fig. 7.1 Extent of Trust Facets within PLC Teams

7.4 Findings and Discussion

7.4.1 Trust Development within Challenging School Conditions

Addressing the first research question, findings suggest that trust developed within challenging school conditions in similar ways that it has been found to develop within more favorable conditions (Bryk and Schneider 2004; Kochanek 2005; Tschannen-Moran and Hoy 2000; Van Maele and Van Houtte 2009) with one major exception. In the challenging school conditions at Timber, trust seemed to develop only within collaborative teams, while trust did not develop between groups or with the principal. In the literature, trust develops through frequent, informal social exchanges when people demonstrate benevolence, honesty, openness, reliability, and competence to each other (Kochanek 2005; Tschannen-Moran 2004). Our findings bolster these claims.

In the PLC framework at Timber, each teacher was assigned to a PLC collaborative team. In almost every case, team members reported they developed a sense of high trust with each other, but that the trust level between the teams or between the teams and members of the administration remained stagnant and even toxic. Speaking of trust between teachers and administration, one teacher noted, "I am feeling totally not trusted, not valued, and that makes it hard." However, most teachers responded in a positive way when asked about trust on a team level, e.g., "Our team is great. I feel like we all implicitly trust each other."

All of Tschannen-Moran and Hoy's (2000) facets of trust were found to be part of the trust development processes of Timber's teams. When teachers rated the degree to which the facets were demonstrated in their PLC collaborative team, they reported that all five facets were in evidence within their teams (see Fig. 7.1). They rated competence the highest with a mean score of 4.43, followed closely by honesty at 4.39, reliability at 4.35, openness at 4.30, and finally benevolence at 3.87. The dearth of competence they perceived from the administration may have been a factor in how much they focused on the competence of their team members.

Trust in PLC teams deepened as teachers interacted, followed through on assignments, helped each other, and simply spent more time getting to know one another. These patterns reflect previous research on trust development (Bryk and Schneider 2002; Kochanek 2005; Tschannen-Moran 2004). What stands out at Timber is that

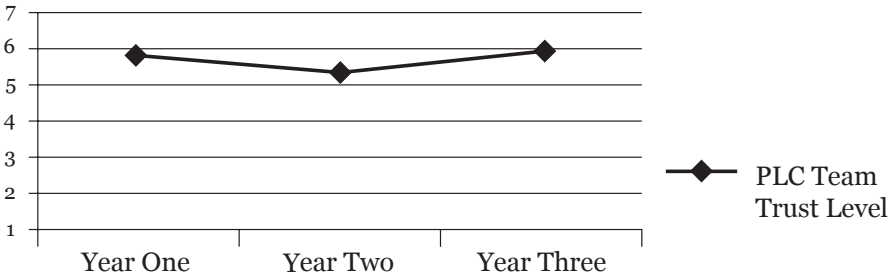

Fig. 7.2 PLC Team Trust over 3 years

team-level trust seemed to develop as a means of survival, making employment in a toxic environment bearable for each teacher. Some teachers described students and team members as the only enjoyable parts of their employment, e.g., "I love the kids, I love teaching, but this year, I hate my job." Ironically, their frustration with the principal and district as a *common enemy* brought teams closer together. One teacher indicated that, "We all have the same problem." The teams developed an *us* versus *them* mentality as indicated by another teacher, "We really learn more from each other… more than we can get from the district telling us what to do."

Outside of the teams, trust at Timber remained low and did not improve. Teachers frequently reported that after 3 years they still felt a division between the grade level teams, e.g., "I think the teams are still divided. I have the professionalism, but I can't say I have the trust." One teacher described this division between the grades by saying, "It's just two different approaches, two different styles. It's like two different worlds trying to exist in one world."

While teachers reported the levels of trust within their PLC collaborative teams for all three years as quite high (see Fig. 7.2), 6th grade teachers felt that trust within their teams fell during the second year when the new principal was brought in. Whether Donna intended to or not, her entrance put the 6th grade teachers on the defensive, and it remained that way for the second and third year of the school. The 6th grade teachers frequently expressed frustration with Donna's *elementary focus*, which did not align with their *secondary focus*. Although the teachers at Timber built high trust relationships within their PLC teams, having high trust teams did not enable them to overcome the division between the grades created with the new school design.

7.4.1.1 Relational Trust

In an effort to better understand and describe the concept of trust, some scholars have divided the foundations upon which perceptions of interpersonal trust are developed into two categories: relational and competency-based trust (Barber 1983; Cook et al. 2005; McAllister 1995). Relational trust is based on perceptions of be-

nevolence, goodwill, openness, positive relationships, and motivations, discerned primarily through affect and emotion, while competency trust is based on perceptions of ability, competence, and integrity, discerned primarily through cognition (Edwards 1990; Lewis and Weigert 1985). Relational trust is a personal knowledge of and trust of another's goodwill (Hite 2005). Relational-based trust increases, as one party is perceived as behaving benevolently and looking out for the other party's best interest. Each party then has the motivation to maintain the personal relationship, inhibit opportunism, and encourage collective value-seeking behavior. Following Hallam et al. (2012), we aligned relational trust with two of Tschannen-Moran and Hoy's (2000) five facets: benevolence and openness.

Findings indicated that teachers at Timber developed high levels of relational trust within their PLC teams. The teachers described their comfort with each other, e.g., "I trust these guys one hundred percent, with all my data, with all my ideas, with all my questions. I trust everything they tell me." They described their personal relationships with their team members. One teacher expressed how nice it was to "just have someone to listen and understand your frustrations." Relational trust developed as team members helped one another and became more open with one another. Teachers often described how their team shared teaching ideas, shared information about their personal lives, and counseled with one another through difficult situations. A first-year teacher described her interaction with her team this way: "They all made it very clear that they are here to help me. [A team member] is always sticking copies in my box of things I might want to do, and [another] is right next to me so she gets all my questions. So, just really quick, I got that these guys are on my side; they want me to do well. They want me to succeed." Another new teacher described how she became more open with her team and share her students' test scores:

> When you're a new teacher, you worry about how you are teaching and your scores, and how they are going to compare to the other teachers who are experienced… so it's nice to hear other people say, "Oh my kids didn't do that well on this test." And I can say, "Mine didn't either." It makes it more comfortable. Also the fact that other teachers are willing to share their scores, it builds your trust. They are willing to share, so I'm willing to share. It's something that progresses over time.

The teams at Timber enjoyed relational trust with each other because they quickly showed high personal regard for one another, shared teaching ideas, and gradually opened up and offered personal information and student data.

7.4.1.2 Competency Trust

Competency trust is a personal knowledge of and trust of another's competency (Hite 2005). Competency trust develops when a level of skill is required to fulfill an expectation and a person demonstrates they can be relied on to follow through (Tschannen-Moran and Hoy 2000). Competency trust is built over time through repeated positive interactions. Again, following Hallam et al. (2012), we aligned

competency-based trust with three of Tschannen-Moran and Hoy's (2000) five facets: reliability, honesty, and competence.

Findings indicated that collaborative teams at Timber developed and demonstrated high levels of competency trust. One teacher explained "I can like you, but there are a lot of people that I really like that I don't trust they are going to get stuff done." Teachers indicated their team members did their part: "I think that everyone comes to the team meetings and they are prepared for the most part and they have done their jobs, and I think when you fulfill your role and your job, that trust is just there." Competency trust developed on the teams as they established group norms, followed through on commitments, and fulfilled individual assignments. Almost every team described developing *group norms* as being vital to trust. Creating norms is a process where behavioral expectations of the team and of each team member are clarified (e.g., Schein 2004). Team norms included being respectful, coming prepared, sticking to time limits, offering opinions, staying on topic, maintaining confidentiality, and completing assignments. One teacher described the process by saying, "Norms… [We] expected to start on time. When you are told you are going to do something or bring something, you bring it. We expect you to do your duty. If you are assigned a duty… take care of it." Teachers linked competence with accountability. They described how following through on assignments, e.g.:

> I think it's the follow through…We started new at the beginning of the year and it took a little while, but then once people started following through … it was kind of like, "Oh, I trust you." And it built on that throughout the year. We all trusted each other, and our team worked really well together."

Teachers at Timber were also drawn to their fellow team members' expertise and experience in part because of toxic relationships that existed with the principal and district. As team members fulfilled their roles and assignments and lived up to the team norms, competency trust on the teams increased.

Not every relationship will develop both types of trust at the same rate or to the same degree. Yet, relationships can start with one type of trust that can then be leveraged to develop other types of trust (Hite 2005). Findings in this study demonstrated that competency trust developed before relational trust, given that collaborative teams had not worked together before and typically did not know each other.

7.4.2 Trust and Teacher Collaboration

Our second research question examined the role of trust in facilitating teacher collaboration in PLCs. First, findings indicated a difference between formal and informal collaboration processes. Noyce et al. (2000) argue that for teams to help students achieve, they must employ formal collaboration practices. Formal collaboration takes place when educators "engage in collective inquiry into (1) best practices about teaching and learning, (2) a candid clarification of their current practices, and (3) an honest assessment of their students' current levels of learning" (Fullan 2009, p. 90). Team inquiry is planned, group norms are followed and an agenda guides

the team meeting discussions. PLCs must have both a clear and consistent understanding of their roles and have a forum to influence change. However, without consistent understanding of the purposes and processes of collaboration, informal collaborations occur in schools to fill the gap, e.g., visiting in the hallways about what they are doing in their classrooms, talking in the faculty lounge about student behaviors, and chatting about personal issues.

While teachers typically indicated they did collaborate, our coding of their descriptions to the three FACT tool domains demonstrated that, in reality, most of their collaborations were informal rather than formal, e.g.:

> I think we collaborate with other teachers all the time. In the lunchroom, we're always talking. My room connects with two other teachers' rooms, and the three of us collaborate all the time and then sometimes with the teachers across the hall…We share ideas and worksheets and sometimes we just e-mail stuff out to people.

Teachers' descriptions of collaboration indicated they did not understand formal PLC processes. For example, a common phrase used by the teachers was that "we do PLCs." One teacher explained:

> If you take away the word PLC, it's been around forever… My mom has taught 37 years… and since the beginning, she's always been collaborating with other teachers. It's just something good teachers do. It's just all of a sudden now they're putting a name on it.

When teams are only *doing* PLCs, they are not functioning as learning communities. The language of a school culture should reflect that they *are* PLCs if the school wants to achieve sustainable results for all learners (DuFour et al. 2008; Harris and Lambert 2003).

Considering the challenging conditions at Timber, teachers became comfortable with informal collaboration. These informal exchanges allowed them to develop trusting relationships and find a common purpose, even though this purpose was aligned with the formal practices of higher functioning PLCs. One teacher explained "we actually spent a lot of time just getting to know each other before we ever looked at the data, because that's what we needed. We needed to build that trust with each other. And I think… we're pretty content with each other now." Although teachers were building trust within their teams, the emergent themes from the data, based on the FACT tool domains, suggested teachers were primarily engaged in informal collaboration practices.

Teachers rated the effectiveness of their PLC collaborative teams as average ($x = 4.58$ on 7 point scale) for all three years (see Fig. 7.3), suggesting room for improvement. In order to function more effectively, Noyce et al. (2000) recommend teachers develop more formal collaboration practices. The relational trust these teams have developed may provide the critical leverage needed to facilitate formal collaboration practices. Thus, the development of trust through informal collaboration may enhance a team's ability to collaborate more formally for a more effective PLC.

Findings identified formal collaborative processes that the teacher teams were using, organized by the three FACT tool domain themes of preparation, collaboration and instruction (Taylor et al. 2013). As Fig. 7.4 illustrates, the instruction do-

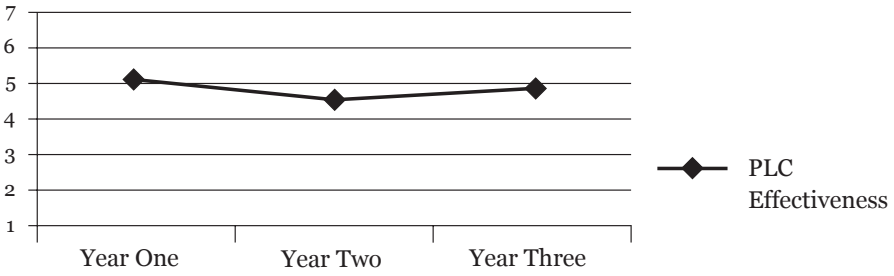

Fig. 7.3 Ratings of PLC Team Effectiveness

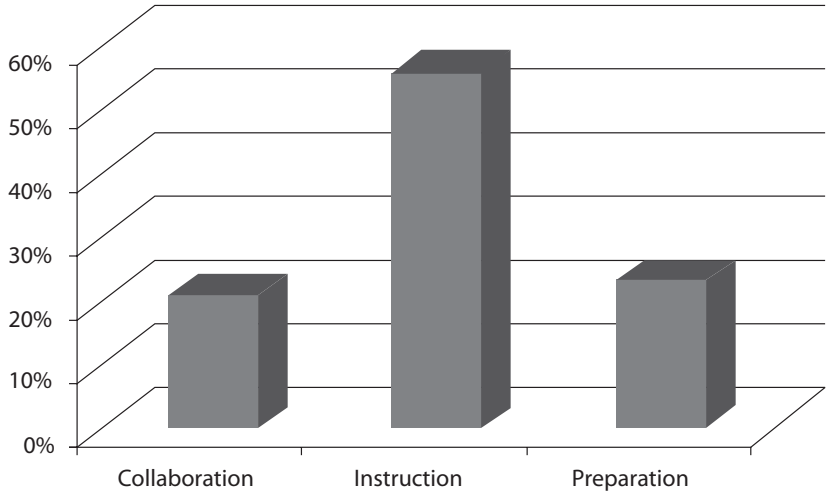

Fig. 7.4 Distribution of Coding to FACT Tool Domains (domains are not mutually exclusive)

main represented the majority of teacher comments about their team collaboration, followed by the preparation and collaboration domains.

In the instruction domain (see Table 7.1), findings indicated that while teams considered their instruction and shared teaching strategies, they were not systematically looking at student data to assess learning. Further, teachers did not use student data consistently to meet individual student needs. Data did demonstrate that most teachers believed they needed, but had not received, the professional development, training and support necessary to become high-functioning collaborative teams. Teachers saw this lack of training as an impediment to their progress in becoming a more effective, formal PLC, e.g.:

> [Teachers] don't see the personal benefit from [PLCs]. If they have never had the training, how are they going to? I'm sorry but reading Learning by Doing isn't going to make you

> want to do a PLC. I don't care what you say… you are asking a lot of these people and I think it's a little bit unfair… it's like doing algebra without knowing your times tables.

Teachers were being held accountable as if they were in a high functioning PLC, yet they had received limited training. The absence of professional development for PLCs (a critical factor in the instructional domain) also contributed to a lack of trust between teams as well as between the teams and the principal (Donna). For example, one teacher reported that "the one time I had a problem, we were in that interventions meeting, and Donna said, 'Well, your team leader should have made sure that was done,' in front of fifteen people. And I was like [gasp] and I walked out." Another teacher explained, "I just don't feel that she has my back."

The other two domains of preparation and collaboration did not emerge as themes in the data (see Table 7.1). In the preparation domain, while teachers did use agendas and establish norms, evidence of other preparation processes, such as attending to action plans and teacher-generated data, was sparse. In the collaboration domain (see Table 7.1), while teams shared teaching and classroom management practices, shared materials that engaged students, and talked about activities and field trips that would support student learning, team members were not always aware of their specific roles in the teaming process and evidence of their productivity was minimal.

The 6th grade teachers did not describe high competency trust of the principal (Donna) due to her inability to function as a principal of secondary teachers, given that her entire career had been spent in the elementary school setting. At the end of the second year, one teacher explained: "I think last year was hard… she jumps on board and … there were a lot of things going on. She's an elementary principal coming over, and she has this whole fifth grade and sixth grade and she was in a rough spot." Arguably, principals can be considered "the most important players affecting the character and consequence of teachers' school-site professional communities. Principals are culture-makers, intentionally or not" (McLaughlin and Talbert 2006, p. 56). By not promoting a positive school culture and formally functioning PLCs, Donna enabled an environment of isolation in which teams developed their own cultures. Teachers came to trust and rely only on others within their teams, but not on other teams or administrators. This lack of trust in Donna and the district gave teachers common enemies against which to rally, e.g.:

> There was absolutely no trust. We felt very undervalued… Before the split ever happened, we voiced our concerns … They didn't give our concerns any credence whatsoever, and so I think coming into the school our trust was way down as far as… having any kind of relationship with the district. That was totally gone.

In schools where PLCs are high functioning, policies and decisions are mutually determined by all stakeholders (Adelman and Taylor 2003). This shared involvement in formal PLCs promotes the sustainability of PLC implementation as well as a commitment by all participants to engage in these learning community practices as outlined by the school's administration. Yet, given that teachers did not feel a part of the decision making process that brought them to this challenging teaching environment, they questioned the decisions and did not trust the administration.

Across all teams, findings of low teacher engagement outside of their teams related to the teams' focus on informal team processes in lieu of formal practices that would better support effective PLCs. Thus, teams built relationships and trust within their teams but not between teams, a pattern, which would challenge a principal's ability to create a school-wide PLC culture.

7.4.3 Challenging School Conditions, Trust and Collaboration

Findings support the claim that challenging school conditions affect both trust and collaboration in PLCs. We offer four findings related to trust and collaboration in challenging school conditions.

7.4.3.1 Trust Development in Toxic Cultures

First, having trust within teams is not sufficient to overcome the effects of a toxic school culture. With the introduction of collaborative teams, changes must occur in the way teachers have traditionally worked and interacted. Collaboration requires a shift from teaching as an isolated practice toward a collective effort with joint goals and a collective focus on student learning. The increased interdependency and need for transparency creates vulnerability for teachers and, thus, the need for trust. Trust is important for the functioning of teams within organizations given that high trust teams lack stress between members, experience high levels of satisfaction, are committed to the team, and have high perceptions of team performance (Costa et al. 2001).

Trust within teams at Timber demonstrated these characteristics. In fact, all but one team rated the level of their team trust as high—at or near 5 (on a 5-point scale). One teacher explained, "I think we are great. I would give us a five…because there's camaraderie, we are effective and we trust one another." Yet, when questioned about the other teams in the school, teachers reported that trust levels were low across the board, e.g., "Just things I hear from other team leaders… and you know when someone is set in their ways they don't want to try something new and change." Therefore, while trust was high within teams, trust was low between teams and between teams and the administration, which inhibited the effective implementation of PLCs. Matthews and Crow (2010) argue that, "Trust is considered a critical factor in any school improvement effort especially in a PLC. When distrust is present in the school's culture, it is likely that the improvement efforts will not be effective" (p. 47). After three years, this school was still struggling to make school improvements as evidenced by their inability to achieve Adequate Yearly Progress (AYP). We reassert that trust within teams at Timber was not enough to overcome the effects of a toxic school culture, and that in this unfavorable situation, the teams bonded and learned to trust each other to protect themselves against external threats.

7.4.3.2 The Role of Vision on Trust Development in Toxic Cultures

Second, a toxic school culture requires the leader to first develop a compelling vision, along with the supporting structures necessary to reinforce their shared purposes. As Nanus (1992) asserted, "There is no more powerful engine driving an organization toward excellence and long-range success than an attractive, worthwhile and achievable vision of the future, widely shared" (p. 3). A clearly articulated mission, vision, and set of targeted goals may become even more important as the situational factors become increasingly unfavourable. As mentioned previously, in three short years, teachers at Timber have been asked to implement several new programs. These teachers did not have confidence that the principal had the knowledge and skills to direct the school or lead new initiatives such as a PLC. This is problematic because teachers are more likely to make themselves vulnerable to their leader when they have confidence in a leader's competence, reliability, and honesty (Tyler and Degoey 1996).

From the beginning, this lack of leadership and vision for the school regarding its new configuration was a confounding obstacle. Teachers came with differing beliefs and ideas about how the school would function. For example, some sixth grade teachers had left their previous elementary schools to be on a secondary model at the junior high school. One teacher explained that "all of a sudden somebody comes and says, 'Now you're going to come over here, you're going to go back to an elementary atmosphere. We're going to put you back to the nine o'clock, three thirty schedule.' That's pretty tough when you've given up the school that you like." In addition, hardly any time was spent in developing a new vision for the school, e.g., "At the beginning of the year, we talked a little bit about a vision and mission statements and so we brainstormed a little as a staff." However, it is clear that nothing came out of it because the school still does not have a concrete mission statement. After three years, teachers are still floundering, e.g., "We still don't know what an intermediate school is supposed to look like."

Leaders who clearly develop a shared mission and vision and define roles and procedures are better positioned to instill competency-based trust. Leaders seen by followers as caring, knowing the followers well, being personally involved, open with them, and liking them are more likely to instil relational-based trust (Hite 2003; Tschannen-Moran and Hoy 2000). We posit that in unfavourable contexts, teachers may initially place more weight on the ability of the leaders' competence rather than on his or her benevolence simply because of the uncertainty of the context and the resulting vulnerability they experience. In this case, not having a clear school vision was problematic. This ambiguity was further complicated by the adoption of disconnected programs and the lack of confidence that the leader had the competence to guide the implementation of these programs. All of this created a feeling of uncertainty and risk among the faculty, which fostered distrust.

7.4.3.3 The Role of Leadership on Trust Development in Toxic Cultures

Third, our findings support Fielder's Contingency Model of Leader Effectiveness (1965) which suggests that task-motivated leaders perform most effectively in very favorable and in very unfavorable situations, while relationship-motivated leaders perform best in moderately favorable situations (Miller et al. 2004; Butler et al. 1976). Using the Contingency Model of Leadership Effectiveness as a guide, the principal demonstrated a relationalship motivated orientation as a new principal. In fact, one of the reasons Donna was chosen to come to Timber was because she had been so successful at her previous elementary school at developing close relationships with her teachers and had been successful with a lower task focus. Coming from this positive school experience, her natural inclination was to continue with the same approach at Timber. However, because of the contextual differences, her attempts at relationship building were ineffective. The teachers perceived the principal's attempts to build trust with them as contrived and inauthentic e.g.:

> Last August when Donna became the principal she had a meeting that was supposed to bring us together as a team and build camaraderie. We all went up to the girl's camp… I don't really think that that brought us together as a team… I never associated with those people the rest of the year and I don't feel like I could trust them.

To assess situational factors, the Contingency Model suggests looking at three components: Leader-member relations (leader acceptance by the group), Task structure (clear-cut procedures) and, Leader power (power to reward or punish). In this study, leader-member relations were moderate to low. Most of the fifth grade team members (with an elementary disposition) liked Donna and accepted her as their leader, e.g., "I personally feel that she has done a good job of trying to bring everybody back together and try to find this even playing field where you have some intermediate, some elementary." However, the sixth grade team members seemed to be at war with the principal. A teacher in the fifth grade observed, "sixth grade teachers were just mad. They were mad at the world, and they were taking it out on anyone they came across. It was just, 'I don't like that I'm here. I don't like the school, I don't like the set-up, and I don't like the building." Another teacher observed that these "teachers were coming from six different schools. [They were] easily offended…so I just sat there and watched the battle happen."

Task structure was low across both fifth and sixth grade level teams. As previously stated, many teachers expressed concerns regarding the lack of clear-cut goals, procedures, or measureable progress or celebrations of success. These concerns were even shared by the PLC team leaders, e.g., "I mean I've been given absolutely no direction [as a team leader]. It's like, 'go off to your corner and begin." They felt like they were expected to implement PLCs without sufficient training, but were then held to a high standard for compliance, e.g.:

> It's a lot to ask of somebody because you have to be responsible for the agenda and making sure everyone has their data and you have to report back to the Guiding Light Committee [School Leadership Team] and [principal], and if things don't get done, 'Where are your minutes?

Another teacher concluded that the biggest roadblock to improving the school was "the stress load of all the expectations of this year and the lack of trust I have with my administrator." Clearly, frustrations ran high over new programs being thrust on them without time for appropriate levels of training or preparation, yet teachers felt the programs were front-loaded with expectations for compliance. For example, speaking about the new literacy program one teacher stated, "[The reading program] is too prescriptive… You lose the magic as a teacher… You might as well hire a robot to come in and recite." Teachers were expected to comply with all the new teaching programs with little buy-in and almost no rewards. One teacher pointed out, "There is no celebration… we are overworked—with no reward."

The last situational component is the leader's position power, which examines whether the leader has or used position power to reward and punish his or her subordinates in order to obtain compliance. In this study, the principal did not exercise high position power. As described by one teacher, "she would take the shotgun approach. She'll just send the message out to everyone… her role ought to be to make it more individualized." While Donna had formal position power, she did not use this power to reward or punish; however, the district did. In fact, several teachers indicated that when Donna presented new initiatives, she used the disclaimer "the district made me do it." One teacher said "I sometimes, personally, get the feeling that what we are doing is providing jobs for people [in the district office]." Not only did the principal fail to exert her position power, several teachers expressed concerns that the principal was abdicating leadership responsibility to the SWOT team—a team that determines interventions for students—and the Guiding Light Team, e.g., "We must comply with all requests from the "Guiding Light Team." This pattern indicated that much of the position power had shifted outside of the principal's direct control. Thus, the leader's position power in this school was weak, particularly when combined with the district's strong influence to punish or reward teachers.

Based on Fiedler's Contingency Model, the effectiveness of a leader's orientation is contingent upon the situation. In this case study, the combination of these three components—low relationships, low task structure and weak position power—defines the school's situation as unfavorable. A task orientation is predicted to be most effective in such an unfavorable situation. However, in the current study, Donna is clearly more relationship oriented. Therefore, using the lens of Fiedler's Contingency Model, we would expect that Donna's leadership would be relatively ineffective in this unfavorable situation, which is what we found. The performance of the group was negatively affected due to the mismatch between the relationship orientation of the leader and the unfavorable situation. This case study provides a good example of Fielder's claim that there is no such thing as one best leadership style that is effective in all contexts. Our findings support the claim that the appropriate leadership style is contingent upon the combination of the favorableness of the context and the orientation of the leader (Bons and Fiedler 1976).

7.4.3.4 Effects of Damaged Trust in Toxic Cultures

Finally, we found that damaged trust has long-term effects that are not easily repaired. While all schools have a common mission of educating students, schools have different cultural values and focuses, which can result in different levels of productivity and negativity. Daft (2008) states "culture can imprint a set of unwritten rules inside employees' minds, which can be very powerful in determining behavior, thus affecting organizational performance" (p. 424). Unfortunately, because of the way Timber began, its culture was toxic from the start and has only improved slightly over the past three years. The school culture has been plagued with low trust between the principal and the faculty and between the fifth and sixth grade teams.

This lack of trust was most powerfully evident in the damaged trust between the district and teachers. This lack of trust caused arguments, finger pointing, defensive relationships, tension and divisions that resulted in a reluctance to collaborate, share, and engage in new practices with full purpose of heart. This finding mirrors Hay (2002), who found that "employees who feel betrayed by management resort to destructive behavior such as neglect and, in extreme cases, sabotage" (p. 46). Teachers at this school believed that the district pushed them to use a highly prescriptive reading program to prove they were acting responsibly in their efforts to help the school pass AYP. Yet, teachers saw this as diverting the blame for failing AYP to the teachers. Teachers experienced real feelings of resentment about having to use this program, given that the district rationale was suspect from the beginning. e.g.:

> The biggest barrier of [the reading program] is that [the district] keeps on pushing for the testing because they want to cover [themselves] legally. So when we fail AYP again, you'll [the district] have this data that will prove that you have shown some growth. In reality, you can't use the data because it's all fear-driven.

As trust continued to deteriorate between the teams and the principal and the district, the real cost to the school was in the wasted time teachers spent in self-protective actions. Teachers became, as Kramer and Tyler (1996) describe, "increasingly unwilling to take risks, demand greater protections against the possibility of betrayal, and increasingly insist on costly sanctioning mechanisms to defend their interests" (p. 3–4). An example of the degree of sanctioning that went on between the district and teachers occurred when the district made the teachers sign a contract that they would only use a certain math program, even though it was new and they were given very little professional development before being expected to implement it with fidelity. One teacher explained, "People are really negative in general, but I think it was the thing with the math that really got us going… we had to sign contracts saying we weren't going to use anything but [the math program]…There's no other choice." Teachers also complained that the district and principal's expected weekly, computer-generated reading and math tests for all students, and that this data was to be analyzed during the weekly collaboration meetings. While this assessment process sounded good on the surface, teachers felt like all they were doing was testing, without ever having time to re-teach and focus on the needs of individual students.

These feelings of discontent were so prevalent that some teachers decided not to fully implement the program as a way to sabotage the district, e.g.:

> The district and our administrator is telling us to, 'Do this test every week. Every week, every week.' And you can meet on Monday with the data, but to me, that's not good teaching. I'm stressed trying to give a test that I already know I need to re-teach [a] concept [for], but I have to give another test; and then, I have to come talk about it… so, it's a spiral that stresses you and stresses you … I've decided for my sanity I'm going to be insubordinate.

The data being collected meant very little to the teachers, and they were simply going through the motions. Teachers were generally concerned about the pressure to perform being heaped on them by the district and principal. Teachers had lost trust in the district and principal and were fearful of all of the testing and how the district may use it against them. For example, one teacher reported "One thing that is a little concerning to me…is the stress that we are going to go to a performance based pay." Teachers pointed out that performance pay had already been piloted in one school in their district, so they could envision it going district wide in the near future.

As a result of this, and other heavy-handed moves by the district and the school principal, a common attitude of revolt began to develop as expressed by this teacher, "I just felt, I'm going to stick it to the man." The teachers at Timber were still suffering from an unfortunate beginning in which teachers believed the district had no real vision for what an intermediate school could do for students. One teacher explained, "We're sort of like the orphan of the district. They just needed a place to put us so they were just like, Let's just take these two grades and put them together and good luck." The effects of the damaged trust by the district and administration were both pervasive and enduring and were taking a long time to repair.

Damaged trust in this case had long-term effects that were not easily repaired. Authoritative position power used by the district in this environment tended to create resentment and forced teachers to go underground, using collaboration as a way to bond together against their common enemies of the principal and the district. Tschannen-Moran and Hoy (2000) lament that one of the most difficult things about distrust is that once it is established it has a strong tendency to be cyclical in nature. They warn, "When interacting with a distrusted person, even normally benign actions are regarded with suspicion" p. 550). Then what typically happens is that, "Distrust impedes the communication, which could overcome it… So that suspiciousness builds on itself" (Govier 1992, p. 56). Therefore, leaders must avoid becoming overbearing and strive to keep the communication channels open in order to repair and work to develop trusting relationships.

Future research should continue to investigate the link between Fiedler's Contingency Model of Leader Effectiveness (1965) and two categories of trust, competency-based and relational-based trust, in other school contexts. Future research should also compare the development of trust in both high functioning and low functioning PLCs. And, finally further research needs to examine the role trust plays in moving from informal to more formal collaboration practices which has been shown to impact student learning (Vescio et al. 2007).

7.5 Conclusion

Schools, such as Timber, are embracing PLCs as a way to enhance student learning. Lack of trust within the school culture inhibited the willingness of teachers to open up their practice beyond their own teams. Yet, within their teams, trust was a factor in facilitating teacher collaboration, which could enable them to share instructional strategies and student achievement data that are necessary to become truly results oriented. In the literature, differences existed between definitions of formal or results-driven (formal) collaboration and teachers' definitions of their collegial or relationally based (informal) collaboration. Teachers did not think that their level of trust in the principal had any effect on their informal collaboration. However, they did indicate that their lack of trust in the principal strongly affected their efforts to develop formal collaboration processes.

Using Fielder's Contingency Model of Leader Effectiveness (1965) as a lens in which to assess both the situational favorability and leadership orientation, the principal's school leadership focused on a relational orientation, which was incongruent with the school's unfavorable situation, resulting in a negative impact on the effectiveness of the school. Attempts by both the teachers and the principal to develop trust were stymied because of the mismatch of leadership style and situation. In challenging and unfavorable situations, task-oriented leaders should be more likely to develop a compelling school mission, structure clear and concise roles, and clarify task goals and procedures that inspire confidence that the leader can reliably lead the group to accomplish their goals (Ayman et al. 2003). These organizational components increase the favorability of the situation, which can improve the effectiveness of a relation-oriented leader.

Principals play a critical role in establishing a vision and supporting a culture of collaboration that has at its core, systems of improved learning for all students and educators. Absent this vision and support, collaborative teams struggle to find meaning. This study found that trust developed first within PLC collaborative teams as a binding element for teacher survival in a school where the climate had degenerated into a toxic culture. However, trust remained contained within the teams and did not affect the overall level of trust within the school culture. Team trust in this environment developed the same way as in other contexts with all five facets present in varying degrees of importance.

When the foundations of trust are divided into two general categories (competence and relational trust) (Barber 1983; Cook et al. 2005; McAllister 1995; Tschannen-Moran and Hoy 2000), they are comparable to Fiedler's (1965) two leadership orientations: task and relationship. In unfavorable contexts like Timber, perceptions of leader's competency-based trust (reliability, honesty, comptence) preceded perceptions of relational-based trust (benevolence, openness). In other words, teachers initially placed more weight on the leader's competence rather than on his or her relationship. Therefore, we conclude that in challenging school conditions, trust is developed by perceptions of leader competence and that a leader with a task orientation is more effective.

Finally, great care must be taken by school and district leaders to repair damaged trust because the long-term effects can be detrimental to the overall school performance. Reaseach has suggested that trust may be repaired if the distrusted actors are willing to identify, acknowledge, and assume appropriate levels of ownership for the specific events that caused the distrust (Lewicki and Bunker 1996). This process must be authentic as people seem to have a sixth sense for insincere attempts to repair relationships.

Appendix A

Focus Group Questions

Q1 What types of collaboration have you been involved in: (a) grade level (c) school-wide (c) other?

Q2 What do you currently perceive as your effective collaboration team practices? Can you give some examples from your experience?

a. Typically, what topics have been discussed during team collaboration meetings?
b. What types of data are used as a part of your collaboration meetings and how
c. How would you evaluate the use of time during these meetings, and has an agenda and/or agreed upon format been used to drive your discussions?
d. How has that changed, if at all, from when you first started collaborative teams last fall?

Q3 What have been challenges to your team's ability to collaborate effectively? Can you give an example from your experience? (If all procedural, ask: what is the role of relationships?)

Q4 How important is trust in your relationships with your collaborative team teachers? Why?

Q5 What is your understanding/meaning of "trust" or "trustworthiness"?

Q6 How do you know when someone trusts you?

Q7 How do you demonstrate to someone that you trust him or her?

Q8 If trust were on a scale from 1–5 (1 being low and 5 being high), how would you describe trust at level "1"? How would you describe trust at level "5"? How would you rate the level (1 low, 5 high) of teacher-teacher trust within your collaborative teams when you first started as a team? How would you rate it now?

Q9 What can be done to improve the level of trust within your collaborative team?

Q10 To what extent, has the team openly discussed issues of relationships and trust?

Q11 Describe a significant trust experience within your team?

Q12 What happens on daily or weekly bases that affect trust between you and your team members?

Q13 As you have participated in collaborative team meetings, how have you seen other team members interact in a way that affected the level of trust within the team?
Q14 If you were to write your own dictionary definition, how would you define the word "trust?"
Q15 How do you decide when to trust someone—if you were to write a recipe for building trust, what would be the ingredients? What is the most important aspect for you in developing trust?
Q16 What role do you think trust plays in the effectiveness of a team like yours?)
Q17 How has the principal influenced trust within your collaborative team?
Q18 How has the team leader influenced trust within your collaborative team?
Q19 Is there anything else you'd like to share about the development of trust or its role in collaborative teams?

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Chapter 8
Teacher Trust in Students and the Organizational School Context: The Role of Student Culture and Teachability Perceptions

Dimitri Van Maele and Mieke Van Houtte

8.1 Introduction

Students' alienation in school contributes to educational problems (Coleman 1961; Newmann 1981), whereas their social integration creates positive educational outcomes (Coleman 1988; Goodenow 1993; Osterman 2000). Intergenerational bonding in school, of which positive teacher-student relationships are a primary source, is a form of social integration that could counterbalance problems of students' alienation (Crosnoe et al 2004a). After all, student perceptions of interpersonal teacher behavior determine student outcomes (*e.g.,* Van Petegem et al. 2008). When students perceive that their teachers support them, students' attachment to school increases (Hallinan 2008). It is indisputable then that teachers are key actors regarding students' social integration and experiences in school.

Our work extends the above line of inquiry by focusing on teachers' relationships with students through an examination of the level of trust teachers expose in students. In this way, we examine the teacher perspective of intergenerational bonding in school. The nature of the social relations teachers have with other school actors is an important aspect of the teacher job and an important output of schooling (Ingersoll 2005; Lortie 2002). Besides, trust relations are an integral aspect of the quality of a school's social system (Goddard et al. 2009; Parsons 1951). Teacher trust in students therefore denotes the quality of school life of both students and teachers. Educational research increasingly acknowledges the

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significance of trust as indicator of positive teacher-student relationships producing favorable outcomes for student learning and teacher functioning (*e.g.,* Bryk and Schneider 2002; Forsyth 2008; Goddard et al. 2001; Imber 1973; Mitra 2009). The level of social capital on which students can appeal within their educational context increases when teachers trust their students (cf. Coleman 1988; Stanton-Salazar 1997), indicating that trust in students can be regarded as a form of teacher-based social capital available to students (cf. Croninger and Lee 2001; Smyth 2004). The importance of trust in students is partly revealed through its influence on the way teachers work and interact with students (Bryk and Schneider 2002; Tschannen-Moran 2004). When students do not experience trust from their teachers, they will be less likely to engage in learning processes (Ennis and McCauley 2002; Tschannen-Moran 2004).

The present study adds to the existing knowledge on trust in schools in the following ways. To our knowledge, this study is the first to associate the organizational school context with a quantitative measure of individual teacher trust in students across a representative sample of secondary schools (in Flanders, i.e. the northern Dutch-speaking region of Belgium). Whereas Bryk and Schneider (2002) acknowledge the importance of student-teacher trust relations, they do not measure teacher trust in students empirically, and where Hoy and others do measure it, they measure 'faculty trust in students', that is the degree of collective trust of a school's faculty in students based on teachers' perceptions about the nature of their colleagues' trust in students (see, for example, Hoy and Tschannen-Moran 1999; Forsyth 2008; Van Maele and Van Houtte 2009). Our trust items, although derived from the Hoy and Tschannen-Moran trust-scale (1999), make no reference to the teaching colleagues in school, resulting in a measure for individual teacher trust in students (see Measures section). Next, although research has related the structural and compositional school context to teacher trust (for a review, see Adams 2008), empirically measured school processes that mediate those associations remain relatively unclear (cf. Adams 2008; Goddard et al. 2009). From Bryk and Schneider's (2002) perspective it can be derived that the extent to which students meet teachers' expectations for them will influence teachers' trust in students. From this reasoning we infer that when teachers perceive the students as able to meet the educational demands imposed on them, teachers will expose trust in students. Such teachability perceptions are themselves determined by institutional characteristics of the teacher work place, such as schools' size, composition, and student culture (see Stevens 2007). For this reason, we analyze whether teacher perceptions of students' teachability mediate associations between the organizational school context and teacher trust.

Before presenting the methodological section of the study and the empirical results, a framework is provided to analyze teacher trust in students in relation to the organizational school context. We conclude with a discussion of our findings regarding teacher trust in students in secondary schools.

8.2 Teacher Trust in Schools

According to the *relational trust perspective* (Bryk and Schneider 2002, p. 20–22), trust in school embodies the social exchanges within the school around distinct sets of role relationships (Blau 1986; Merton 1957). Generally, four referents of teacher trust are discerned based on the organizational roles that occur within and around schools: students, parents, teaching colleagues and the school principal (Adams 2008). Each party has an idea about the own role obligations but equally holds some expectations about the other parties' role obligations (Bryk and Schneider 2002, pp. 20–22). Teachers observe the actions of these role groups in terms of meeting their own role expectations, which in turn affects teachers' level of trust (cf. Bryk and Schneider 2002; Sitkin and Roth 1993). Accordingly, our focus lays on how the extent to which teachers perceive the students as able to meet the educational expectations imposed on them fosters their trust in students.

When teachers make trust discernments based on their own willingness to be vulnerable to another role group, they interpret the other parties' actions in terms of benevolence, reliability, competence, openness, and honesty (Hoy and Tschannen-Moran 1999). Trust also takes different forms at different stages of a relationship (Tschannen-Moran and Hoy 2000). It is clear then that trust relationships in the school context display a multidimensional and dynamic nature (Tschannen-Moran and Hoy 2000). According to Luhmann (1979), trust is the easier option in a beginning relationship, whereas Gambetta (1988) adds that trust grows as a relationship develops. Rousseau et al. (1998) suggest that relational trust develops out of repeated interactions over time, whereas the information available to the trustor from within the relationship itself forms the basis of trust. This perspective demonstrates that the higher the extent of contact teachers have with other school actors, the bigger the pool of trust-relevant evidence to rely on teachers have at their disposal. Consequently, the extent of teacher-student contact should influence teacher trust in students because it affects the level of information available to teachers to discern whether the students behave in a trustworthy way or not.

Interpersonal processes in school are not detached from the larger social context. Teachers' behaviors, standards, attitudes, beliefs, perceptions, and teacher-student interactions are all affected by different characteristics of the institutional school context (see Bronfenbrenner 1979; Stevens 2007). For this reason, the next section focuses on how the organizational school context might influence teachers' perceptions that the students will meet the educational expectations and how this in turn could affect the level of trust in students.

8.3 Organizational School Context and Teacher Trust in Students

Following Crosnoe and colleagues who argue that teacher-student relationships are promoted in an institutional context which is communally and academically oriented (2004b, p. 63), we propose that the academic orientation of the student population affects teachers' perceptions of students' teachability, in turn affecting teachers' level of trust in students. After all, peer group influences and student norms could be powerful factors in creating strong teacher-student trust relations within high schools (Bryk and Schneider 2002, pp. 31–32). As Lortie (2002, p. 172) portrays, teachers describe their students' contributions to 'a good day' in terms of students' active participation, interest, attention, effort, and positive affection—although teachers often express discontent with students' commitment to learning (Bishop et al. 2004, p. 240). This picture aligns with the reasoning that an academically oriented student culture improves teachers' perceptions that the students will come up to the expectations imposed on them. Besides, research has proven that compositional school features influence the academic orientation of the student body (*e.g.,* Van Houtte 2004). In line, we argue that students' study culture may function as a mediating mechanism between compositional school features and teachers' perceptions of students' teachability, subsequently affecting teachers' trust.

With regard to schools' *gender composition*, Coleman (1961) already showed that girls are more study-oriented than boys. Also Warrington, Younger and Williams (2000) suggest that, as compared to boys, girls could work hard in school and still be part of the 'in crowd'. Van Houtte (2004) indicated that a high proportion of girls positively affects the general students' study culture in school. Moreover, the higher the proportion of girls in school is, the higher teachers' levels of trust in students are (Van Houtte 2007). Consequently, we suggest that higher levels of trust in students will appear when the proportion of girls in school is high because then the students' study culture in general is more academic, resulting in improved teachability perceptions.

The *socioeconomic composition* of the student body equally affects teacher-student interactions and teachers' expectations (Becker 1968; Harvey and Slatin 1975; Thrupp 1999). Goddard et al. (2001, 2009) systematically assessed a negative association between a low socioeconomic (SES) student body and faculty trust in students. Other research indicates that in low-SES schools teachers report their students to be less teachable (*e.g.,* Thrupp 1999; Van Houtte 2003). This may indicate that teachers perceive that their normative and academic expectations for students will not be satisfied within low-SES schools. In turn, these perceptions could decrease trust in students. Furthermore, a low-SES context negatively affects students' attitudes towards schooling (*e.g.,* Willis 1977; Thrupp 1999). Additionally, in Flanders, low-SES secondary schools predominantly offer the lower tracks (Tan 1998). This suggests the presence of a less academically oriented student culture in low SES schools (see Van Houtte 2006, p. 247). We therefore advance that students' study culture may be the missing link mediating the relationship between a low

socioeconomic school composition and negative teacher perceptions of students' teachability—in turn reducing teacher trust in students.

When structural and compositional school characteristics relate to the communal orientation of the school, a direct effect from the former on teacher trust seems reasonable as well. With respect to *school sector* or denomination, research has shown that private (catholic) schools show a more communal orientation than public schools (Bryk et al. 1993; Coleman and Hoffer 1987). Usually parents deliberately choose to send their children to private schools (because public schooling is more or less the standard in most countries), which should result in a high correspondence in norms and values between teachers and students (Corten and Dronkers 2005). Such correspondence facilitates teacher-student interactions and should enhance intergenerational bonding in school (cf. Crosnoe et al. 2004b). According to Coleman and Hoffer (1987), private (catholic) schools display functional communities resulting in higher levels of social capital, of which trust is an integral aspect (Coleman 1988). We therefore propose that teacher trust in students will be stronger in private (catholic) schools than in public schools.

School size equally is an important structural factor regarding the communal orientation of schools (cf. Crosnoe et al. 2004b). When the number of organizational members increases, interpersonal interactions become more complex (Talacchi 1960). Also when schools become larger, the contacts between teachers and students become more difficult (Bryk et al. 1993; Lee 2000; Meier 2002). For this reason, the formation of teacher trust in students could be hampered in large schools.

Finally, with respect to *ethnic composition*, Kramer et al. (1996) note that a shared ethnic identity serves as a basis for trusting relationships. Trust relationships in school are strengthened when people perceive one another as having a common background (Tschannen-Moran 2004; Zucker 1986). Research indicates that when teachers match with their students in terms of racial-ethnic background, teachers may perceive the relationships with their students as more positive (Alexander et al. 1987; Saft and Pianta 2001). Such findings could extend from the individual to the school level (cf. Crosnoe et al. 2004b). For example, beginning teachers in ethnically diverse schools report greater difficulties in establishing meaningful relations with students (Freeman et al. 1999). We accordingly expect a match in the racial-ethnic composition of the student body and the teaching staff to improve teacher-student trust relationships.

8.4 Research Design

8.4.1 Strategy of Analysis

The main purpose of the present study is to explore whether characteristics of secondary schools' organizational context associate with teachers' trust in students. Next to the organizational school context, the extent of teacher-student contact and

teachers' perceptions of students' teachability, socio-demographic and and role-related teacher characteristics (gender, socioeconomic status, immigrant background, teaching experience, and the nature of the subject taught) may equally influence teacher trust (*e.g.,* Bryk and Schneider 2002; Van Houtte 2006; Van Houtte 2007). Accounting for these teacher characteristics is necessary then. Multilevel analysis (HLM6, cf. Raudenbush and Bryk 2002) is therefore the most appropriate test for the research questions at hand, given the multilevel character of the data—teachers within schools–and the fact that we are dealing with a clustered sample. After testing an unconditional model—that is without specifying determinant variables at any level—to determine the school-level variance as a first step in the analyses, the effects of four structural or compositional school variables are examined: size, sector, gender composition of the student body, and racial-ethnic match of the student body and the teaching staff.

Although no official figures are available, secondary school teachers with an immigrant background are really scarce in Flanders[1]. Our representative sample includes a negligible proportion of less than 3 % teachers with an immigrant background. Consequently, a measure for the immigrant composition of the teaching staff is unnecessary to describe the degree of racial-ethnic matching between the staff and students. After all, a single measure for the proportion of immigrant students in school will indicate the degree of discrepancy between the student body and the teaching staff in terms of immigrant background composition. A majority of immigrant students is also characterized by a low social class background (Driessen 2002). Because of a high correlation between the socioeconomic and immigrant composition of the student body ($r=-0.78$, $p<0.01$), the former measure is added to the model only in a next step. Because other research has established an independent effect of immigrant background on student outcomes, controlled for socioeconomic background (*e.g.,* Opdenakker and Hermans 2006), both variables are used simultaneously in this step. Results should be approached cautiously then due to possible multicollinearity problems—although the data at hand display a low chance of such problems because of low variation inflation factors (see Van Maele and Van Houtte 2009, p. 572).

In a following step, gender, socioeconomic status, experience, subject, and the degree of teacher-student contact are included at the individual teacher level. The next step accounts for the academic orientation of the student body as mediator of associations between compositional school features and trust. Finally, to test whether the associations of the organizational school context with trust are mediated by teachers' perceptions that students will meet the educational demands teachers impose on them, a measure for teacher perceptions of students' teachability is included at the individual teacher level.

[1] In 2007, the Forum for Ethnic-Cultural Minorities roughly estimated the percentage of elementary and secondary school teachers with an immigrant background in Flanders at 1 % of the whole teaching staff (http://www.minderhedenforum.be/2onderwijs/200710allochtoneleerkrachten.htm).

As common in multilevel analysis, all variables except the dichotomous ones are grand mean centered to increase model stability (Raudenbush and Bryk 2002). In variables based on a scale (see Measures section), missing values on the items were substituted by means of item correlation substitution (Huisman 1999).

8.4.2 Population and Sample

Data were gathered within the context of the Flemish Educational Assessment (FlEA) during the 2004–2005 school year from 2,104 third- and/or fifth-grade teachers (the 9th and 11th grade in the American educational system, respectively) by means of anonymous written questionnaires across a representative sample of 84 secondary schools in Flanders. Moreover, 11,872 third- and fifth-grade students (approximately 15 and 17 years old, respectively) from the sample schools plus one additional school completed written questionnaires. Across the 85 schools, information about basic school characteristics was provided by written questionnaires filled out by the school principals.

To determine a sample of Flemish secondary schools, a multistage sampling was conducted. Based on data from the Flemish Educational Department, 240 proportional-to-size postal codes were selected first, with size defined as the number of schools within the postal code. Therefore, postal codes of large municipalities—with a greater number of (municipal) schools—had a greater chance of selection. From the postal codes, 48 were selected with a slight overrepresentation of greater municipalities. Then we asked all regular secondary schools within the selected municipalities to participate, yielding a positive response of 31 %. The 48 municipalities as well as the 85 schools in this sample are representative for the Flemish situation (see Van Houtte et al. 2005). All the third- and fifth-grade students of the 85 schools had to complete questionnaires in class in the presence of one or two researchers and a teacher. In the end, 11,945 students completed a questionnaire of which 11,872 proved to be valid—which equals a response rate of 87 %. A number of 6,081 students were in the third grade, and 5,791 were in the fifth grade. In addition, the third- and/or fifth-grade teachers of the participating schools were asked to complete an anonymous questionnaire and return it in a sealed envelope to an assigned contact person in their school. A number of 2,104 teachers across 84 schools did respond, which comes down to a teacher response rate of approximately 60 % (see Van Maele and Van Houtte 2009, p. 567).

8.4.3 Measures

Teacher trust in students. At the individual teacher level, the dependent variable was measured with 10 items derived from the trust scales developed by Hoy and Tschannen-Moran (1999), such as “You have to closely supervise the students” or “The students cheat if they have the chance”. This 5-point scale measures teachers’

Table 8.1 Descriptive statistics of the teacher and school characteristics

	Sample size	Actual score range	Minimum score	Maximum score	Mean score	Standard deviation
Individual level						
Trust in students	2066	34.00	13.00	47.00	32.00	4.61
Teachability	2066	116.00	39.00	155.00	100.15	15.31
Student contact	1985	26	1	26	17.98	5.31
Experience	2062	45	1	45	16.04	10.91
Socioeconomic status	2028	7.00	1.00	8.00	4.99	1.68
School level						
School size	84	1098	26	1124	460.01	283.90
Gender context	84	97.84	0.00	97.84	49.86	26.14
Ethnic context	84	88.20	0.00	88.20	16.05	21.51
Socioeconomic context	84	4.72	2.00	6.72	4.83	1.22
Study culture	84	5.93	16.34	22.27	19.48	1.20

general willingness to be vulnerable to the students and teachers' perceptions of students' benevolence, reliability, competence, openness, and honesty. The items of the original scale, of which some measure teachers' perceptions about the nature of their teaching colleagues' trust in students, were translated into Dutch and transformed to measure individual teacher perceptions of trustworthy students (cf. Van Houtte 2005). For example, we transformed an item such as "Teachers in this school believe what students say" into "I believe what students say". Our items, after being rescored when necessary, were rated from *absolutely disagree* (1) to *absolutely agree* (5). A scale for trust in students was obtained by calculating the sum score across the 10 items, leading to a possible minimum score of 10 and a possible maximum score of 50. Cronbach's alpha for this scale ($N=2066$; *mean* $=32.00$; $SD=4.61$) is 0.77, reflecting an acceptable and reliable internal scale consistency (see Table 8.1).

Students' teachability is measured with 31 items of the "Teachable Pupil Survey" of Kornblau (1982). This scale reflects teachers' perceptions of attributes of teachable students. It encompasses students' characteristics in terms of "school-appropriate behaviors" (such as "enjoy school work"), "cognitive-motivational behaviors" (such as "insightful, perceptive"), and "personal-social behaviors" (such as "calm") (Kornblau 1982). It is inferred that when teachers perceive the students as teachable, they will perceive that students are able to meet the educational expectations imposed on them, in turn strengthening teacher trust. The items of this 5-point scale, such as "I think that in this school the students in general are inquisitive", were rated from *absolutely disagree* (1) to *absolutely agree* (5). The scale was created by totaling scores on the 31 items, resulting in possible extreme scores of 31 and 155. Cronbach's alpha for the students' teachability scale ($N=2066$; *mean* $=100.15$; $SD=15.31$) is 0.94 (Table 8.1). As expected, teacher trust in students correlates relatively highly with teacher perceptions of students' teachability ($r=0.70$, $p<0.01$).

Student contact was measured by a teacher's weekly number of instructing hours in the school. The weekly teaching hours ranged from 1 to 26 hours. On average, teachers weekly instructed eighteen hours ($N=1985$; $SD=5.31$) (Table 8.1).

Students' study culture is based on the aggregated mean of the students' study involvement in the school. Study involvement is measured by a 6-item scale (shortened from Brutsaert 2001) and reflects how concerned students are about going to school and studying in general. The items, such as "I don't understand the importance of studying" or "Studying is a waste of time", were scored from *absolutely disagree* (1) to *absolutely agree* (5). The study involvement scale was obtained by the sum of the item scores (total score range=6–30; $N=11{,}724$; *mean*=19.41; $SD=4.05$; Cronbach's alpha=0.76). At this point we dispose of a reliable measure of study involvement at the individual student level, but to assess the variable 'study culture', an aggregation of the individual-level data was a necessary next step. A customary aggregation strategy is the calculation of the means of individual-level responses of the members of the same group or organization (Hofstede et al. 1990). To ensure allowance of aggregation, in terms of study involvement being actually shared between students (cf. Glick 1985), we calculated the mean rater reliability based on the intraclass correlation coefficient (ICC) from a one-way analysis of variance: ICC(1, k)=(between mean square−within mean square)/ between mean square (with k=number of raters in each group or organization) (see Glick 1985; Shrout and Fleiss 1979). The ICC must be above 0.60 to permit aggregation to the group level (Glick 1985; Shrout and Fleiss 1979). Study involvement was strongly shared by the students of the same school (ICC=0.89). Therefore, it is legitimate to speak of study culture (*mean*=19.48; $SD=1.20$). Study culture significantly relates to the composition of the school (see Table 8.2).

The s*chool sector* variable distinguishes between 42 private schools (coded 0) and 42 public (21 municipal and 21 state) schools (coded 1). Among the private schools, 41 schools are catholic and one is a non-confessional private school[2].

School size was measured by the total number of students enrolled in the school at the beginning of the school year, as reported by the principal. The size of the student body ranged from 26 to 1,124. Across the sample schools, the average school size was 460.01 ($SD=283.90$; see Table 8.1).

A measure for *gender context* was obtained by calculating the proportion of girls in the third and fifth years who responded to our survey. This student-derived measure correlates very high ($r=0.97$, $p<0.01$) with the measure derived from the principals' questionnaires, validating the use of the former. Our sample comprises six boys schools. On average, the sample schools have 49.86% girls ($SD=26.14$; see Table 8.1).

[2] In the Flemish educational system, no real distinction is made between public and private schools regarding state support. Historically, the private sector encountered greater development in terms of both the number of schools and the number of enrolled students. In our sample, public schools are somewhat overrepresented due to the data collection procedure favoring larger cities, in which most of the municipal schools are located.

Table 8.2 Regression analysis between structural and compositional school characteristics and students' study culture

	Study culture ($N=84$)
School sector	0.01
School size	−0.12
Gender context	0.44***
Ethnic context	0.89***
Socioeconomic context	0.62***
R^2(%)	58.5***

Results of multiple regression analysis: reported are the beta coefficients and explained variance
*$p<0.05$; **$p<0.01$; ***$p<0.001$

Ethnic context measures the proportion of immigrant respondents from a school in our sample. The principal criterion to distinguish immigrant students was the birthplace of the students' maternal grandmothers. When this information was missing (1% missing data), mothers' and fathers' nationalities were considered as most immigrant students are second or third generation and are therefore Belgian nationals. As is common practice, only Western-European birthplaces and nationalities were considered to qualify a respondent as of native descent (see Timmerman, Hermans, and Hoornaert 2002). As such we created a dichotomous variable (0=*native*, 1=*immigrant*). Of the 11,872 students responding, 1,324 (11.2%) were identified as having an immigrant background. This figure contrasts sharply to the fact that of all the teachers in our sample, a negligible number (less than 3.0%) has an immigrant background. It indicates that, across the sample schools, the higher the proportion of students with an immigrant background is, the stronger the degree of discrepancy between the student body and the teaching staff in terms of ethnic background is. On average, the proportion of students of immigrant descent in school is 16.05% ($SD=21.51$; see Table 8.1). The immigrant composition ranges from 0.0% immigrant students (six schools) to 88.20%[3].

The s*ocioeconomic context* of a school was conventionally measured by calculating the mean SES of the students at the school, namely, the mean SES of the responding students at school. We measured students' socioeconomic background by means of the occupational prestige of father and mother (Erikson et al. 1979); the highest of both was used as an indicator of the SES of students' families. The students have a mean SES of 5.20 ($N=11,173$; $SD=2.10$). The schools have a mean SES context of 4.83 ($SD=1.22$; see Table 8.1).

The *socioeconomic status* of teachers' origin was equally measured by means of the occupational prestige of teachers' father and mother (Erikson et al. 1979); the highest of both was used as an indicator of the SES of teachers' origin. Teachers had a mean SES of 4.99 ($N=2028$; $SD=1.68$; see Table 8.1).

With respect to teachers' *gender*, 777 men (code 0) and 1288 women (code 1) answered this item.

[3] Transforming the variable to reduce its skewness and adjusted analyses (not reported) yielded similar results.

Teaching experience was measured by the number of years that a teacher had been working in his/her participating school. On average, the teachers in this research had been teaching 16.04 years in their school ($N=2062$; $SD=10.91$). The scores for this variable varied from one year to 45 years (Table 8.1).

Subject was dichotomized into teaching theoretical courses (code 0), such as mathematics, languages, history, and so forth, and teaching rather practical courses (code 1), such as physical education, woodwork, plastics education, and so forth. In this research, 68,9 % of the respondents teach theoretical subjects ($N=2103$; see Table 8.1).

8.5 Results

The unconditional model indicates that as much as 23.44 % of the variance in teacher trust in students is situated at the school level ($\sigma^2 = 16.79$; $\tau_{0} = 5.14$; $p<0.001$; $N=2066$). This finding suggests that an important proportion of the variance in teacher trust in students is explained by variation in school factors.

An initial conditional analysis reveals that compositional school features significantly predict the level of trust in students (see Table 8.3, model 1). It is more likely that teachers trust the students when the proportion of girls in school is high ($\gamma^*=0.205$; $p<0.001$), and when the proportion of students with an immigrant background is low ($\gamma^*=-0.311$; $p<0.001$). Yet, when socioeconomic context is added (Table 8.3, model 2), a suppression effect between school size and SES context becomes visible because both variables are positively correlated ($r=0.41$; $p<0.01$)—and both relate in an opposite way to teacher trust. The structural factor school size is negatively associated with trust in students ($\gamma^*=-0.100$; $p<0.01$). In this step, the significant effect of immigrant composition of the student body disappears as well, indicating that it is not the presence of students with an immigrant background in itself that diminishes trust in students, but the fact that those students are marked by a lower social class background. This model shows the strong determining impact of SES context on trust in students ($\gamma^*=0.403$; $p<0.001$). Socio-demographic teacher characteristics are not significantly related to trust (Table 8.3, model 3). Teachers instructing practical courses, however, are more likely to expose slightly lower levels of trust in students as compared to their colleagues instructing theoretical courses ($\gamma^*=-0.098$; $p<0.001$). Furthermore, the more hours teachers teach in a week, the more likely they will expose lower levels of trust in students ($\gamma^*=-0.042$; $p=0.057$).

Adding the students' study culture does not change the picture (Table 8.3, model 4). The academic orientation of the students' holds no significant relation to teachers' trust, revealing that the higher chance of low trust levels within schools with a high proportion of male or socioeconomic disadvantaged students is not explained by the nature of the students' study culture in those schools (see Table 8.2).

Finally, incorporating teachers' perceptions of students' teachability alters the picture substantially (Table 8.3, model 5). Teachability perceptions strongly relate

Table 8.3 Relationships between teacher trust in students, the organizational school context and teacher characteristics

Model						
Variable		1	2	3	4	5
Intercept		32.071***	32.020***	32.169***	32.145***	32.338***
		(0.307)	(0.263)	(0.298)	(0.294)	(0.171)
School level						
School sector	γ	−0.463	−0.242	0.044	0.089	−0.301
	γ*	−0.050	−0.026	0.005	0.010	−0.033
	SE	(0.430)	(0.362)	(0.342)	(0.332)	(0.196)
School size	γ	−0.000	−0.002**	−0.002**	−0.002**	−0.001**
	γ*	−0.015	−0.100**	−0.102**	−0.092**	−0.063**
	SE	(0.001)	(0.001)	(0.001)	(0.000)	(0.000)
Gender context	γ	0.036***	0.033***	0.037***	0.030***	0.022***
	γ*	0.205***	0.190***	0.208***	0.172***	0.124***
	SE	(0.009)	(0.007)	(0.007)	(0.008)	(0.005)
Ethnic context	γ	−0.067***	−0.008	−0.012	−0.028	−0.012
	γ*	−0.311***	−0.038	−0.054	−0.131	−0.055
	SE	(0.014)	(0.015)	(0.015)	(0.017)	(0.010)
SES context	γ		1.523***	1.402***	1.185***	−0.160
	γ*		0.403***	0.371***	0.314***	−0.042
	SE		(0.197)	(0.195)	(0.212)	(0.145)
Study culture	γ				0.308	−0.023
	γ*				0.080	−0.006
	SE				(0.174)	(0.122)
Teacher level						
Gender	γ			0.043	0.046	0.112
	γ*			0.005	0.005	0.012
	SE			(0.219)	(0.218)	(0.178)
SES	γ			−0.054	−0.055	0.023
	γ*			−0.020	−0.020	0.008
	SE			(0.055)	(0.056)	(0.042)
Experience	γ			−0.018	−0.018	0.002
	γ*			−0.042	−0.043	0.004
	SE			(0.011)	(0.011)	(0.007)
Subject	γ			−0.978***	−0.973***	−0.751***
	γ*			−0.098***	−0.097***	−0.075***
	SE			(0.216)	(0.212)	(0.159)
Student contact	γ			−0.036°	−0.037°	−0.041**
	γ*			−0.042°	−0.042°	−0.047**
	SE			(0.019)	(0.019)	(0.012)
Teachability	γ					0.209***
	γ*					0.695***
	SE					(0.007)

Results of Stepwise Multilevel Analyses (HLM 6.0): unstandardized (γ) and standardized (γ*) gamma coefficients, with standard errors (SE).
*$p<0.05$; **$p<0.01$; ***$p<0.001$; °p = 0.057

to trust in students ($\gamma^*=0.695$; $p<0.001$). Besides, in this step, the significant effect of SES context totally disappears, revealing that the strong association between a low-SES context and low trust in students is explained by the fact that teachers within those schools perceive their students as less teachable.

Finally, it should be noted that the included organizational school characteristics explain 89.88 % of the variance in teacher trust in students that is explained at the school level [$(\tau_{0-}\ \tau_5)/\ \tau_{0=}0.8988$]. This points out that our included structural, compositional, and cultural school characteristics are good and reliable indicators of the association between teacher trust in students and the organizational school context.

8.6 Discussion

The development of strong intergenerational bonding in school is a crucial factor to enhance the social integration of students in school (Crosnoe et al. 2004b). Student perceptions of teachers' interpersonal behavior influences students' attachment to school (Hallinan 2008) and students' well-being (Van Petegem et al. 2008). Such students' perceptions of teacher-student relationships, and in turn students' engagement within the learning processes, are themselves influenced by the level of trust students experience on behalf of their teachers (cf. Ennis and McCauley 2002; Mitra 2009; Tschannen-Moran 2004). Given the significant role of teacher trust regarding the quality of the social relationships in school and student learning (Bryk and Schneider 2002; Goddard et al. 2009), a relevant and important focus of inquiry is investigating the determinants of trust in students at both the school and teacher level.

The main purpose of this study was to explore whether secondary school teachers' level of trust in students relates to the organizational school context. In this way, our study points out in which types of schools barriers could exist for students in developing supportive relationships with teachers. Such knowledge is important because attention to the context of schools is crucial to formulate educational policy with a social justice orientation on education (Talbert et al. 1993; Thrupp and Lupton 2006).

Our results clearly indicate that structural and compositional school characteristics do affect teacher trust in students, whereas the mediating role of an academically oriented student culture could not be confirmed. The higher the proportion of girls in school, the more likely teachers discern the students as trustworthy. This finding could be caused by, as compared to boys, girls' academic orientation being more in line with teachers' academic demands (Van Houtte 2004, 2007), as such improving teachers' trust. Contrary to our prediction which was based on the fact that a high proportion of girls in school results in a more academically oriented student culture (*e.g.,* Van Houtte 2004), the association between gender composition of the student body and trust is not explained by the nature of the students' study culture. This is also the case with respect to the impact of the socioeconomic composition of the student body on teacher trust. Although we clearly found that teachers working within lower-SES schools have lower levels of trust in students as compared to teachers instructing in higher-SES schools, our predication that this relationship is explained by the nature

of the students' study culture in lower-SES schools could not be affirmed. Thus, regardless of students' attitudes towards schooling, students in low-SES schools will be more likely to experience low levels of trust on behalf of their teachers as compared to students in high-SES schools. Furthermore, we showed the significant role of teacher perceptions of students' teachability to explain the strong and systemic relationship between SES context and teacher trust (cf. Goddard et al. 2001, 2009). Apparently, teachers instructing in low SES schools perceive the students as less teachable, as less able to meet the educational expectations imposed on them, which in turn reduces the level of trust teachers expose in the students at school.

With respect to the influence of the communal orientation of the school on teacher trust, our initial results underline the importance of school size and a racial-ethnic match between the student body and the teaching staff. Teachers instructing in private or public schools, however, do not differ in their levels of trust in students. As predicted (see Lee 2000; Talacchi 1960), the larger schools become, the lower the levels of trust teachers expose in the students. It is clear then that, to enhance intergenerational bonding in school, schools should not become too large (see Crosnoe et al. 2004a). The negative effect of a mismatch between the teaching staff and the student body in terms of immigrant background on trust is, however, caused by the fact that students with an immigrant background are marked by a lower social class background (see Driessen 2002). Our findings suggest that it is not the presence of students with an immigrant background itself that reduces trust in students, but the fact that these students are marked by a lower social class background. This aligns with the statement that the social class of the student body, not the ethnic composition, explains the majority of the variability between schools in terms of faculty trust in students (Goddard et al. 2001). Our results also partly confirm Stanton-Salazar's (1997) these that in particular racial-ethnic minority youth and youngsters with a low social class background experience barriers in developing supportive relationships with teachers because of an 'institutionalization of distrust' in schools. Our results validate that schools where minority students are concentrated could display barriers for students in developing supportive relationships with teachers due to a lack of trust in students on behalf of the teachers. This is problematic in view of a social justice orientation on education that promotes teachers to be effective with students of all backgrounds (cf. Cochran-Smith et al. 2009; Nieto 2000).

Finally, our study suggests teacher characteristics to relate to trust in students as well. Teachers who perceive students as teachable are more likely to expose trust in students. The assessed relationship demonstrates the importance of teacher expectations for students being met or not with regard to the level of trust teachers expose in students. Moreover, the more contact teachers have with students, in terms of weekly teaching hours, the less likely teachers will expose trust in students as well. Although we expected an association here, the direction of the assessed relationship points to some barriers in developing strong teacher-student trust relationships. Apparently, the more hours teachers instruct, the more the pool of trust-based evidence on which teachers rely points out that students are not to be trusted (see Rousseau et al. 1998; Tschannen-Moran 2004). On the one hand students' behaviors and attitudes could lead to lower teacher trust when teachers have a lot of contact opportunities with students, but equally the impact of the teacher work load on the nature

of the teacher-student relationships might be considered. Because we also found teachers instructing general courses to expose higher levels of trust than teachers instructing practical courses, it should be clarified more in depth how the nature of the subject taught influences the nature of intergenerational bonding in school.

The present study does not assess causal relationships due to the cross-sectional nature of the data. Longitudinal data should clarify the causal direction between perceptions of teachability and trust in students. Our theoretical framework though, derived from the fact that expectations being met or not determine teacher trust (see Bryk and Schneider 2002; Rousseau et al. 1998; Sitkin and Roth 1993), proposed that the relationship runs from teachability to trust. To create an encompassing picture of teacher-student trust relationships, a measure of student trust in teachers is necessary as well. After all, relational trust in schools that is based on organizational roles is a reciprocal phenomenon (Forsyth 2008), and reciprocal trust relationships are mutually reinforcing because each party then has a built-in incentive to be trustworthy (Coleman 1990, p. 77). It would be interesting to analyze from a longitudinal perspective how teacher trust and student trust relate to one another and how this affects student and teacher outcomes. Lastly, although research has not signaled an association between study culture and the racial-ethnic school context, our results point out this is the case. Therefore we advise further investigation of how the presence of racial-ethnic minority students affects the general study culture of a secondary school.

To conclude, we explored the quality of the social system in secondary schools by means of relating teacher-student trust relationships to the organizational school context. Our study shows that teachers' trust in students is not independent from the organizational school context. In general, teachers' perspectives of trustworthy students associate quite strongly with schools' composition and size. Students' attitudes towards studying are, however, unrelated to trust in students, whereas perceptions of teachability play a crucial role in the formation of teacher trust. Future research should establish further insight into the impact of teacher-student trust relationships on students' social integration and experiences in school. For now, we can claim that in some types of schools teacher-student trust is fostered, whereas in other types of schools barriers exist for students in developing supportive relationships with teachers.

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Chapter 9
Mentoring, Trust, and Teacher Efficacy: A Powerful Force for New Teacher Induction

Serafino M. Celano and Roxanne M. Mitchell

9.1 Introduction

There are many challenges facing public education in the United States today. There is a heightened awareness of the fact that our students are competing against young adults from other nations for opportunities in a highly competitive global economy. Many have suggested that our schools have fallen behind other nations in providing a high quality education for all students. The achievement gap between white and black students continues to be an issue in many schools across America. The publication of *A Nation at Risk* in 1983 served as a wake-up call for Americans to realize that our system of public education was failing many young people. Subsequently, the No Child Left Behind Act (NCLB) established national goals of higher standards and accountability for the education of all children. A major component of NCLB is the requirement of all schools to staff classrooms with highly qualified teachers who have received comprehensive teacher training.

Birman et al. (2000) point out that the training and professional development of teachers is critical to our nation's efforts to improve the quality of education. Providing higher standards for the educational achievement of students requires schools to raise the bar in terms of standards and expectations for teachers as well. Indeed, higher standards for teaching and learning cannot be realized without a work force of teachers who can advance basic content knowledge and develop the critical thinking skills so important in today's technology rich society. According to Popkewitz (2007) educators need not only to develop skills and teach content, but they should be challenged to change the way young people think and live. For

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example, teachers can have a meaningful effect on helping students to develop the concept of being lifelong learners. Yet, according to Walsey (1999), many new teachers enter the classroom with some understanding of teaching theory, but with minimal teaching skills.

Compounding this problem of many new teachers beginning their service without adequate training or skills has been the high attrition rates traditionally found in the profession, particularly among beginners. Smith and Ingersoll (2004) found that as many as 50% of new teachers leave the profession within their first 5 years of service. This "revolving door" of teachers clearly has an effect on student achievement. According to Smith and Ingersoll the most salient factor in reducing teacher turnover, and in easing the transition from teacher preparation to practice, was the pairing of new teachers with a mentor teacher with the same subject knowledge.

Teacher mentor programs have become an important part of the professional induction and staff development process for new teachers in many states. But while many states have mandated the development of mentoring programs each district is left with the challenge of designing and structuring these programs with very little assistance or support (Wong 2004). Needless to say the quality, design, and degree to which these programs are successful in supporting and training new teachers, varies from district to district and from state to state.

Research studies in the area of teacher mentoring have attempted to identify some key elements of effective teacher mentoring programs (Onafowora 2004; Pavia et al. 2003; Yost 2002; Ryan and Hornbeck 2004). Current research, such as Pavia et al. (2003), and Ryan and Hornbeck (2004), suggests that an important factor in successful teacher mentoring programs is the development of a trusting relationship between the mentor and mentee. Ferguson (2006) also found that trust between mentor and mentee is vital as well as on-going professional development.

Despite the fact that scholars have pointed to the importance of trust between mentor and mentee there is a lack of empirical research to substantiate the importance and to identify factors which contribute to the development of trust. Therefore, the purpose of this study was three-fold; first to develop an instrument to measure perceptions of trust between the mentor and the mentee. Secondly, to investigate the relationship between teacher trust in mentor and teacher efficacy among first-year teachers involved in a new teacher mentor program. And finally to identify the elements of teacher mentor programs that are associated with building trust between mentors and mentees.

9.2 Theoretical Rationale

The following discussion will highlight what we know about the importance of mentoring, trust, and teacher efficacy in relation to successful new teacher retention and the importance of trust between mentor and mentee in facilitating the development of teacher efficacy.

9.2.1 Mentoring New Teachers for Success

Mentoring programs for new teachers were created in an effort to curtail the high rate of teacher turnover by helping to improve the instructional skills and feelings of competence of teachers new to the profession. While mentoring has been around for some time, mentors have rarely been a part of formal mentoring or induction programs (Darling-Hammond 1998; Ryan and Hornbeck 2004; Wong 2004). Unfortunately, what many have thought of as mentoring has oftentimes amounted to simply pairing a veteran teacher with a novice teacher. Wong (2004) points out that these types of efforts are often very ineffective and suggests that in order for mentoring to be successful it must be a part of an induction program, which he describes as a system wide comprehensive effort to support the induction of new teachers over a period of at least two to three years. He distinguishes mentoring from induction suggesting that mentoring may be the most important part of an induction program, but it is only one part. In order for mentoring to be successful structures must be in place to facilitate mentoring, and this must be tied to the mission of the organization, as well as to on-going professional development and an emphasis on lifelong learning.

Researchers (Onafowora 2004; Pavia et al. 2003; Yost 2002; Ryan and Hornbeck 2004; Wong 2004), have attempted to identify some key elements of effective teacher mentoring programs. These elements include: structuring enough time and a convenient location for the mentor and mentee to have contact, providing training to new mentors, and carefully pairing mentors with new teachers who are compatible and teach the same subject. Moreover, successful mentoring programs require on-going supervision.

The benefits of mentoring new teachers are many. According to Darling-Hammond (2003) mentoring new teachers has successfully lowered attrition rates of novice teachers by two thirds in some places. Mentoring assists new teachers in identifying successful strategies for working with diverse students and students with special needs. Furthermore, mentoring assists new teachers in becoming reflective practitioners. Yost (2002) suggests that mentoring programs both raise the level of confidence of new teachers and the commitment of mentor teachers to work towards improvement of their schools. Ideally mentoring also reduces the alienation that many new teachers report.

Not all researchers, however, have agreed that teacher mentoring programs are effective in reducing new teacher attrition and increasing student achievement (Feiman-Nemser 1996; Koch et al. 2003; Sawchuk 2008). However, we agree with Wong (2004) that failure to link mentoring with a comprehensive system wide program of induction may be part of the problem. Furthermore, in order for mentoring to be successful there must be trust between the mentor and the mentee. Pavia et al. (2003) and Ryan and Hornbeck (2004), suggest that trust is a critical element for successful mentoring programs. Ryan and Hornbeck (2004) state that “mentoring is an activity that is based on a personal relationship that requires some building of trust and affinity between mentor and mentee” (p. 87).

9.2.2 Trust in Schools

Research has pointed to the importance of trust as an essential ingredient in organizational life (Hoy and Tschannen-Moran 1999, 2003; Bryk and Schneider 2002; Fisler and Firestone 2006). It has been shown to increase organizational effectiveness and efficiency, promote collaboration, and facilitate communication (Baier 1986; Tschannen-Moran and Hoy 2000). Trust involves a willingness to risk vulnerability as well as confidence that one will not be harmed by placing trust in another party and the expectation that one's best interest will be looked after (Hoy and Tschannen-Moran 1999; Mishra 1996; Rousseau et al. 1998). Schools are organizations, and as such the work of schools is highly dependent upon the establishment of trusting relationships (Bryk and Schneider 2002). Bryk and Schneider referred to this as relational trust. Trust then is based upon expectations that each party will behave in ways that are predictable and just. Trust involves personal judgments about individuals' intentions and behavior relative to normative expectations of how they should behave (Bryk and Schneider 1996, 2002).

Early definitions of trust described trust as unidimensional, involving individual and/or institutional characteristics, and interpersonal relationships (Lewicki and Bunker 1996). However recent definitions of trust have focused on its multi-dimensional and dynamic nature (Bryk and Schneider 1996, 2002; Hoy and Tschannen-Moran 1999; Mishra 1996; Sheppard and Sherman 1998). Building on an earlier definition by Mishra (1996), Hoy and Tschannen-Moran (1999) defined 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" (p. 189).

We find this definition particularly germane to the discussion of trust between a mentor and mentee. New teachers are placed in a position of vulnerability when they are paired with a veteran teacher. If the novice teacher does not trust that her/his mentor will act in good will she/he will not risk trusting. Mentoring requires that new teachers share problems and difficulties. It also requires the mentor to behave in ways that inspire confidence that such information will not be used inappropriately. Mentor teachers must be perceived as competent hence many researchers have pointed to the importance of pairing new teachers with veteran teachers who teach the same subject (Pavia et al. 2003; Ryan and Hornbeck 2004; Wong 2004). Furthermore, the mentor must be perceived as acting with integrity and being willing to openly share knowledge and experience needed by the mentee in a non-threatening and non-judgmental manner.

9.2.3 Teacher Efficacy

Teacher efficacy has been defined as "teachers' belief or conviction that they can influence how well students learn, even those who may be difficult or unmotivated" (Guskey and Passaro 1994, p. 4). The term *teacher efficacy* grew out of Rotter's locus of control theory which postulated that individuals who have an internal locus

of control believe that they have control over their lives whereas people who have an external locus of control believe that external forces are in control of their destiny (Woolfolk 1995). Researchers from the RAND Corporation in 1976 applied this theory to teachers and coined the term *teacher efficacy*. They modified an existing survey designed to explore the relationship between school factors and student reading achievement by adding two items which asked teachers the extent to which they perceived that they had control over the teaching task (Tschannen-Moran et al. 1998). Their work pointed to the significant relationship between teacher efficacy and student reading achievement, particularly for minority students.

Other researchers applied Bandura's (1997) social cognitive theory about self-efficacy to the conceptualization of teacher efficacy. Bandura described self-efficacy as "beliefs in one's capabilities to organize and execute the course of action required to produce given attainments" (p. 3) Therefore, teacher efficacy referred to whether teachers' believed that they were able to have a positive influence on student learning. According to Bandura these beliefs are tied to motivation such that teachers with a high sense of teacher efficacy would be motivated to persist in efforts to reach even the most difficult students, whereas teachers who have a low sense of teacher efficacy would be inclined to give up in the face of adversity and challenging circumstances (Tschannen-Moran et al. 1998).

Gibson and Dembo (1984) combined both of these traditions and created an instrument designed to measure teacher efficacy that tapped what they termed as personal teacher efficacy and general teacher efficacy. Personal teaching efficacy measured teachers' perceptions about their ability to teach; whereas general teaching efficacy measured the teachers' expectancy regarding the outcomes of their teaching. Due to problems with the factor loadings of this instrument, Hoy and Woolfolk (1993) later modified this to a 10 item survey consisting of 5 items on each subscale. Since that time multiple researchers have repeatedly confirmed the strong link between teacher efficacy and student achievement above and beyond the effects of SES (Adams and Forsyth 2006; Goddard et al. 2004; Tschannen-Moran et al.1998).

9.2.4 Mentoring, Trust, and Teacher Efficacy

Since trust is an essential ingredient for all relationships that are conceived of as important (Hoy and Tschannen-Moran 1999; Tschannen-Moran 2004) we think this warrants empirical investigation into the mechanisms involved in establishing trust between mentor and mentee and the consequences of such trust for the development of teacher efficacy. Prior studies have shown that teacher trust in colleagues and teacher trust in principal are strongly correlated with teacher efficacy (Forsyth et al. 2006; Goddard et al. 2004; Hoy and Tschannen-Moran 1999). However, no study to our knowledge has formally explored the relationship between teacher trust in mentor and teacher efficacy.

Bandura (1977) proposed four sources of efficacy, namely; mastery experience, vicarious learning, emotional arousal, and social persuasion. We see the role of the mentor as being essential in all four areas. As the mentor teacher works with the novice teacher to specifically improve instruction this would allow the mentee to gain mastery experience, which is said to be the most important source of efficacy. In addition, as the mentor serves as a role model of successful teaching strategies this would help to foster vicarious learning. The mentor's excitement and engagement with teaching as well as verbal encouragement can inspire the new teacher to not only feel competent in her/his ability to get across the subject matter to the students but can also serve to encourage the new teacher to persist in efforts to reach difficult students.

Therefore we hypothesized that:

H1: Teacher trust in mentor would be positively correlated with and predictive of personal teacher efficacy (PTE)

H2: Teacher trust in mentor would be positively correlated with and predictive of general teaching efficacy (GTE).

Since this study combined both quantitative and qualitative methods, the following research question guided our qualitative investigation.

Q1: "What are the components of mentoring programs that are associated with increased trust between first year teachers and their mentor?"

9.3 Methodology

9.3.1 Teacher Trust in Mentor Scale Development

Consistent with the definition of trust developed by Hoy and Tschannen-Moran (1999) that trust involves the willingness of one party to risk vulnerability based on confidence that the other party is benevolent, reliable, competent, honest, and open, Mitchell, Celano, and Tarter (2009) constructed a 14 item Likert-type scale which was designed to capture perceptions of new teachers regarding the benevolence, reliability, competence, openness, and honesty of their mentors. The scale consists of responses indicating the extent of agreement with 14 statements along a Likert scale ranging from strongly disagree = 1 to Strongly Agree = 6. Marker items that represented the five facets of trust were: "My mentor typically acts in my best interest," (benevolence); "Even in difficult situations I can depend on my mentor," (reliability); "My mentor is competent in doing his/her job," (competence); "My mentor keeps his or her word," (honesty); "My mentor is open," (openness).

In order to maintain construct relevance and validity, items on this scale closely mirrored items on the Omnibus T-Scale (Hoy and Tschannen-Moran 1999, 2003) but were written to capture teacher trust perceptions of their mentor teacher. For example, while the original Omnibus T-Scale measured honesty with statements

such as "The teachers in this school have faith in the integrity of their colleagues", this scale was changed to measure honesty with items such as "I have faith in the integrity of my mentor". While the original scale measured benevolence with items such as "Teachers in this school typically look out for each other", the *Teacher Trust in Mentor Scale* was changed to state "My mentor typically looks out for me". Reliability was measured on the original scale by an item that stated "Even in difficult situations, teachers in this school can depend on each other", and this scale was modified to measure reliability with the item "Even in difficult situations I can depend on my mentor". In addition, to check that items on the *Teacher Trust in Mentor Scale* indeed mirrored items on the original Omnibus T-Scale the Teacher Trust in Mentor scale was reviewed by a panel of experts that consisted of professors at The University of Alabama in the College of Education for closeness of adherence to the original scale. There was strong agreement among the judges and all items were retained. Because the original Omnibus T-Scale had already been tested for content validity and this scale was developed based on the original scale, the panel of experts was only asked to compare items on the two scales for consistency. The Omnibus T-Scale is a reliable and valid instrument that has been used in many empirical studies and as such this instrument provided a tested conceptual and operational framework for the construction of the Teacher Trust in Mentor Scale.

9.3.2 Phase I—Pilot Study

Phase I involved a pilot study to provide data to assess the psychometric properties of the Teacher Trust in Mentor Scale. In the fall semester of the 2008 school year, and the spring semester of the 2009 school year, 91 graduate students at one private university on a campus in a Northeastern state completed the 14 item Teacher Trust in Mentor Scale. The graduate students who participated were enrolled in either a master's program or a doctoral program in education. Each participant was also a teacher who had a mentor when they first entered the teaching profession. After securing permission from the university as well as the internal review board to use graduate students as participants in the pilot study, the researcher visited 8 graduate classes, explained the purpose of the study, and asked for volunteers to participate. The graduate students who volunteered to participate in the field test were provided with a consent form and were reassured that their identity would remain anonymous. There was an 82% return rate of instruments distributed (91 of 111). The sample was representative of graduate students from one university in the School of Education who were also working as teachers in a metropolitan area.

Teacher responses to all of the 14 items were subjected to a factor analysis using principal components analysis with varimax rotation to examine the underlying factor structure. As expected, given that all of the items were constructed to identify the facets of a teacher's trust in their mentor, one strong factor emerged (eigenvalue

Table 9.1 14-Item teacher trust of mentor scale (TTM): a one-factor rotated solution

Item #	Item	Facet	Factor
TTM1	I trust my mentor	Honesty	0.92
TTM2	My mentor typically looks out for me	Benevolence	0.85
TTM3	(r) I am suspicious of most of my mentors actions	Competence	0.80
TTM4	I have faith in the integrity of my mentor	Honesty	0.86
TTM5	[a]My mentor typically acts with my best interest in mind	Benevolence	0.90
TTM6	My mentor shows concern for me	Benevolence	0.86
TTM7	[a]Even in difficult situations I can depend on my mentor	Reliability	0.93
TTM8	My mentor is reliable	Reliability	0.87
TTM9	(r) My mentor is unresponsive to my concerns	Benevolence	0.82
TTM10	[a]My mentor is competent in doing his or her job	Competence	0.90
TTM11	[a]My mentor is open	Openness	0.87
TTM12	[a]My mentor keeps his or her word	Honesty	0.89
TTM13	My mentor openly shares personal information with me	Openness	0.54
TTM14	When my mentor tells me something I can believe it	Honesty	0.89

Note: [a] marker item, (*r*) reversed item principal axis factoring with varimax rotation

of 10.24) that explained 73.15 % of the variance in the teacher trust in mentor items. Factor loadings ranged from .54 to .93 with all factors loadings except one being greater than.80. A Cronbach's Alpha of.97 was used to establish the reliability of the instrument. The primary results of the principal components analysis are included in Table 9.1.

9.3.3 Phase II—Main Study

The purpose of the next phase of this study was to test the relationship between teacher trust in mentor and self-efficacy for first year teachers, to test the predictive and criterion validity of the Teacher Trust in Mentor Scale, and to identify the elements in mentoring programs associated with increased trust between teachers and mentors. The unit of analysis for this study was the first year mentor teacher. The independent variable was trust between mentor and mentee as perceived by the first year teachers. The dependent variable was teacher efficacy which included two subcomponents (a) personal teaching efficacy (PTE) and (b) general teaching efficacy (GTE). Whether or not the mentor and the mentee taught the same subject was included as a control variable.

9.3.4 Data Source

Twelve districts across the midwestern section of Long Island were invited to participate in this study. Seven of the districts agreed to participate. Once permission had been obtained 128 first year teachers who were involved in a mentoring program were invited to participate in this study. Data were collected either at faculty meetings by the researcher or at a district meeting of first year teachers, in which case the researcher was assisted in the data collection by an assistant superintendent. Teachers were given an explanation of the study and assured that their anonymity would be protected. Of the 128 teachers invited to participate in this project, 103 teachers returned usable forms, yielding a response rate of 80.5 %.

9.3.5 Instrumentation

Three instruments were used in this study. The Teacher Trust in Mentor Scale (Mitchell et al. 2009) developed by modifying the Omnibus Trust Scale (Hoy and Tschannen-Moran 1999, 2003), was used to measure the new teachers' trust in their mentors. The Teacher Efficacy Scale (TES) (Short Form), developed by Hoy and Woolfolk (1993) was used to measure the level of self-perceptions of teacher efficacy among first year teachers. Finally, an open ended Mentor Trust Questionnaire, developed by one of the researchers (Celano 2009) was given to the new teachers to explore the elements they perceived as being important for building trust between the mentee and the mentor.

The Teacher Trust in Mentor Scale (Mitchell et al. 2009) a 14 item, 6-point Likert type scale with a response range from strongly disagree to strongly agree was developed to test teacher perceptions of trust in their mentor teacher. See earlier discussion regarding this instrument.

The Teacher Efficacy Scale(Short Form) a 10 item, 6-point Likert type scale, with a response range from strongly disagree to strongly agree. Five of the items assessed personal teaching efficacy and five of the items assessed general teaching efficacy. The reported reliability of this scale ranged from .72 (GTE) to .77 (PTE). Sample items on this scale include, "When I really try I can get through to most difficult students," "The amount a student can learn is primarily related to family background," "If one of my students couldn't do a class assignment I would be able to accurately assess whether the assignment was at the correct level of difficulty," and "If parents would do more for their children, I could do more."

The Mentor Trust Questionnaire (Celano 2009) *is* a 17 item open ended questionnaire developed to identify the specific elements of mentoring programs that lead to trust between first year teachers and their mentors. Sample questions include, "How was your mentor selected and matched with you? Were you involved in the selection process," "When during the school year did you and your mentor

Table 9.2 Descriptives and reliabilities of scales ($N = 103$)

Variables	Mean	SD	Range	Reliability
Trust in mentor	4.82	0.62	1.71–5.36	0.95
Personal teacher efficacy	4.93	0.62	2.00–6.00	0.74
General teacher efficacy	3.72	0.88	1.80–5.60	0.64
Same subject knowledge	1.11	0.31	1.00–2.00	

begin to meet and work together," "What types of on-going support or training are provided for you and your mentor," and "what mentoring activities are most helpful to you?" Responses on this questionnaire were coded to identify emerging themes.

9.4 Data Analysis

9.4.1 Descriptive Analysis

The first level of investigation involved obtaining descriptive statistics and reliabilities of all the variables in the study. As can be seen from Table 9.2 trust in mentor was high with a mean of 4.82. Personal teacher efficacy tended to be higher overall (mean = 4.93) than general teacher efficacy (mean = 3.72). The reliabilities of the three scales in our study ranged from (0.64–0.95). See Table 9.2.

9.4.2 Bivariate Analysis

The next level of investigation involved obtaining bivariate correlations of all the variables in the study. Teacher trust in mentor was positively correlated with personal teaching efficacy ($r = 0.53$, $p < .01$) but was not significantly correlated with general teaching efficacy ($r = -0.12$, $p < .05$) or subject taught by mentor ($r = 0.15$, $p < .05$). Interestingly enough, personal teaching efficacy was not significantly correlated with general teaching efficacy ($r = 0.19$, $p > .05$). Whether mentor teachers taught the same subject that their mentee teacher taught was only significantly correlated with personal teaching efficacy ($r = 0.27$, $p < .01$) but not with general teaching efficacy ($r = 0.07$, $p > .05$). See Table 9.3.

Table 9.3 Bivariate correlations

	2.	3.	4.
1. Trust in mentor	0.53**	−0.12	0.15
2. Personal teacher efficacy		0.19	0.27**
3. General teacher efficacy			0.07
4. Same subject knowledge			

Notes: N=103, * = p < .05, ** = p< .01

Table 9.4 Regression analysis of trust in mentor and same subject knowledge on personal teaching efficacy

	Personal teaching efficacy		
	β	t	Sig
Trust in mentor	0.43	4.91	0.000
Same subject knowledge	0.21	2.37	0.020

Notes: R^2 =0.25; Adjusted R^2 =0.24, SE=2.72, F=16.93, p<0.01

9.4.3 Regression Analysis

The third level of investigation involved two sets of regressions in which teacher trust in mentor and whether teachers taught the same subject were regressed on personal teaching efficacy and general teaching efficacy. The first regression in which the predictors where regressed on personal teaching efficacy showed that teacher trust in mentor and whether teachers taught the same subject both had a significant effect on personal teaching efficacy (β=0.43, p<.01) and (β=0.21, p<.05), respectively. Together the predictors explained 25% of the variance in personal teaching efficacy. See Table 9.4.

The second regression in which the predictors were regressed on general teaching efficacy showed that neither teacher trust in mentor nor whether teachers taught the same subject had a significant effect on general teaching efficacy (b=−0.14, p>.05) and (b=0.095, p>0.05). See Table 9.5.

9.4.4 Qualitative Analysis

The final level of investigation involved qualitative analysis of teacher responses to an open ended mentor trust questionnaire. Trust and efficacy theory were used to analyze the responses and to identify recurrent themes among the respondents. In

Table 9.5 Regression analysis of trust in mentor and same subject knowledge on general teaching efficacy

	General teaching efficacy		
	β	t	Sig
Trust in mentor	−0.14	−1.41	0.161
Same subject knowledge	0.095	0.950	

Notes: $R^2 = 0.158$; Adjusted $R^2 = 0.005$; SE = 4.377; F = 1.28, $p > .05$

Table 9.6 Qualitative analysis

High teacher trust in mentor
1. Early start date prior to school year or by first day of school
2. Frequent meetings between mentor and mentee
3. Frequent classroom observation of mentee by mentor and of mentor by mentee
4. Frequent informal friendly exchanges
5. Involvement in mentor selection
6. Same subject knowledge
7. Mentor mentee training[a]
8. Collegial environment for mentoring[a]

Note: [a] district/building support

addition the responses of teachers who scored high on the Teacher Trust in Mentor Scale were analyzed to determine which elements were considered most beneficial to the mentor-mentee relationship. The elements strongly associated with high trust in mentor were an early start date of either prior to the school year or on the first day of school; frequent meetings between mentor and mentee, such as daily or 2–3 times per week; frequent classroom observations of the mentor by the first year teacher as well as frequent observations of the first year teacher by the mentor; frequent informal friendly exchanges between the mentor and the mentee; mentee involvement in the selection of the mentor, same subject knowledge on the part of the mentor; and district and building support in providing mentor/mentee training and creating a collegial environment for mentoring. See Table 9.6.

9.5 Results

Our first hypothesis stated that teacher trust in mentor would be correlated with and predictive of personal teaching efficacy. Our findings supported this hypothesis. Teachers in our study who had high levels of trust in their mentor also had high levels of personal confidence in their ability to teach effectively. Moreover, teacher trust in mentor was predictive of personal teaching efficacy and in fact along with whether the mentor teacher and the first year teacher taught the same subject accounted for 25% of the variance in personal teaching efficacy.

Our second hypothesis stated that teacher trust in mentor would be correlated with and predictive of general teaching efficacy. Our findings did not support this hypothesis. Teacher trust in mentor had very little if anything to do with the general sense that teachers had about their power to reach difficult students. Moreover our findings showed that personal teaching efficacy and general teaching efficacy were not correlated with each other. This finding is not all that surprising because prior research on teacher efficacy has demonstrated that personal teaching efficacy and general teaching efficacy operate independently. General teaching efficacy is more indicative of teacher attitudes regarding the power of education to transform student lives (Hoy and Woolfolk Hoy 1990). The teachers in our study had an overall higher sense of personal teaching efficacy than general teaching efficacy. We are hard pressed to explain the negative correlation between teacher trust in mentor and general teaching efficacy. It is quite possible that general efficacy comes about with time and experience with productive teaching. It is also possible that the trusting relationship between the mentor and mentee has more to do with personal teaching efficacy because trust involves a personal relationship.

Thirdly, we asked the question "What are the components of mentoring programs that are associated with increased trust between first year teachers and their mentor?" We found a number of significant components such as frequency of contact between mentor and mentee, subject knowledge of mentor, and the amount of support provided by the district and school to support the mentoring program. First year teachers had a higher level of trust with their mentor in districts that allowed release time to meet with mentors, observation time, and provided on-going mentoring support and training.

9.6 Conclusion

This study has provided additional evidence regarding the importance of trusting relationships between first year teachers and mentors. Our results indicate that teacher trust in mentor is correlated with and predicative of personal teaching efficacy, that is teachers who had a higher degree of trust in their mentor were more likely to have a greater sense of personal teaching efficacy. This study also gives empirical support to the suggestions by Wong (2004) that mentoring programs need to be a part of a comprehensive program of induction. Our findings suggest that the greater the degree of structure of the mentoring program the more likely new teachers were to develop trust in their mentor. Moreover, this study offers a reliable instrument to further explore the effects of trust between new teachers and mentors. We suspect that trust in mentor is not only correlated with personal teaching efficacy but may also be correlated with organizational citizenship behavior, teacher satisfaction, and teacher retention among other things. This study makes a modest attempt to add empirical evidence to the support of the importance of trust for building new teacher efficacy. While these findings are encouraging they are based on only one region in the US. More work is needed both to confirm and to extend this study to other areas.

9.6.1 Importance of Personal Teaching Efficacy for Novice Teachers

Personal teaching efficacy for the teachers in our study was associated with the degree of trust they had for their mentor. New teachers who had developed high levels of trust for their mentor also demonstrated a high degree of personal teaching efficacy. For the novice teachers in our study the high levels of perceived personal teaching efficacy seems to have resulted from good mentor training, characterized by strong trusting relationships with a mentor. Having such training resulted in high levels of personal confidence in the ability of the first year teachers to be effective teachers. While this was characteristic of most of the teachers in our study, 10% of the teachers in the study did not have high trust in their mentor and also did not demonstrate high levels of personal teaching efficacy. This result is noteworthy because researchers have shown that teacher efficacy is related to teacher behavior (Gibson and Dembo 1984), satisfaction in teaching (Tschannen-Moran et al. 1998), and the use of productive teaching strategies (Goddard et al. 2004). Effective teachers are teachers who are confident in their ability to teach. This confidence has been shown to be associated with higher student achievement (Tschannen-Moran et al. 1998). New teachers who are confident in their ability to teach are more likely to remain in the profession. The current study did not explore this relationship, however future studies are warranted that will explore the relationships between trust in mentor, efficacy, and retention of novice teachers.

9.6.2 Practical Implications

Administrators and teachers who are charged with designing and monitoring teacher mentor programs in schools should include design features and assessments that focus on developing trusting relationships between mentees and their mentors. According to Wong (2004), the training of teacher mentors is necessary if teacher mentor programs are to be effective in supporting the needs of new teachers. In addition, Hughes and Taylor-Dunlop (2008) also found trust to be an important aspect of the mentor/mentee relationship. They recommend that the training of mentors include a training agenda that identifies practical ways mentors can nurture and develop strong trusting relationships with their mentees. Moreover, Darling-Hammond (1998) described growing evidence that teacher mentoring programs and other forms of collaborative learning are successful strategies that schools need to use to better prepare teachers. Key features of effective teacher mentoring include peer observations and coaching, the formation of small study-groups, ongoing seminars and workshops, and active participation in collaborative, sustained professional learning communities that are connected to curriculum and instructional goals. Such cultural conditions and activities in schools will promote the development of trusting relationships.

An assessment of the extent to which mentee-mentor relationships and trust are developing should also be built into the mentor program evaluation system. Interviews and surveys, such as the Teacher Trust in Mentor Scale, can be periodically administered to mentees and mentors in order to gauge whether or not trust is developing between the pairs. Mentor assignments or program structures can then be adjusted as necessary to foster the development of trusting relationships.

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Part III
Trust and Leading

Chapter 10
Linking Social Networks and Trust at Multiple Levels: Examining Dutch Elementary Schools

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10.1 Introduction

Fostering the professional development of teachers in schools seems to be a key challenge for governments, school districts and principals to improve the quality of education. Since teachers' professional development mostly takes place within schools, researchers have started to examine teacher learning in its social context, using a professional learning community perspective (Hord 1997; Mitchell and Sackney 2000; Sleegers et al. 2005; Stoll et al. 2006; Toole and Louis 2002). Professional learning communities are generally conceptualized as communities of educators that are characterized by elements such as a focus on student learning, shared values and vision, collaboration, trust and collective learning (Louis and Marks 1998; Louis et al. 1996; McLaughlin and Talbert 1993, 2006; Mitchell and Sackney 2000; Sackney et al. 2005; Stoll et al. 2006; Toole and Louis 2002).

There are indications that schools with strong professional communities indeed promote teachers' professional development, produce increased student learning, and manage educational change more easily than schools lacking these elements

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(Lomos et al. 2011; Louis and Marks 1998; Newmann et al. 2000; Vescio et al. 2008; Wiley 2001). Although research on professional communities underlines the relevance of teachers' social interactions to support teachers' professional development and instructional change, scholars have long overlooked what lies at the foundation of professional communities; teachers' social networks in schools (Coburn and Russell 2008; Smylie and Hart 1999). As a consequence, we know little about the social fabric that signifies the 'community' of a professional learning community. This weak conceptual elaboration of one of the key concepts underlying professional learning communities is considered as a main problem that demands attention in future research (Westheimer 1999; Toole and Louis 2002).

Recently, researchers have suggested using social capital theory to elaborate on teachers' social interactions by examining teachers' social networks and trust (Coburn and Russell 2008; Daly and Finnigan 2009; Moolenaar 2010; Penuel et al. 2009). Social capital theory explains how social relationships enable individuals to have access to, and make use of, the resources that reside in their social networks. Social capital is seen as a promising theory to increase understanding of the crucial role of social networks among teachers for a number of valuable elements related to professional communities, including transfer of knowledge, joint problem solving, collective orientation towards innovation, and reform implementation (Coburn and Russell 2008; Daly et al. 2010; Penuel et al. 2007).

Two major concepts that represent social resources in social capital theory are social networks and trust. While previous research suggested that teachers' professional relationships foster a climate of trust and a 'safe' environment to engage in innovative behavior and risk-taking in reform efforts (Bryk and Schneider 2002; Louis et al. 1996; Moolenaar and Sleegers 2010; Penuel et al. 2007), empirical evidence on the interrelatedness of the two major constituents of social capital in school organizations, social networks and trust, is missing.

This chapter examines the extent to which the structure of teachers' social networks underlying professional communities affects teacher trust in elementary schools in the Netherlands. For instance, we explore whether teacher trust in schools is related to the density of their school's professional network, or to the extent to which professional relationships are reciprocated (reciprocity). We will present social capital theory as a useful theoretical foundation to describe the way in which professional communities take shape in social interactions that can foster trust among teachers, setting the stage for beneficial school and student level outcomes that are associated with strong professional communities in schools. Then, using data from 751 teachers and principals from 49 Dutch schools, we will conduct a multilevel test of the influence of individual and school level social network configurations on teacher trust. By doing so, we provide a unique contribution to the empirical validation of the sociological concept of social capital in the context of education. Finally, we offer a discussion of the findings and limitations of the study, together with implications for practice in order to maximize the potential of professional learning communities and social capital for the field of education.

10.2 Theoretical Framework

10.2.1 Professional Learning Communities From a Social Capital Perspective

To better understand how the pattern of social interactions among teachers may shape the valuable outcomes associated with strong professional communities, we draw on the concept of social capital. The leading notion behind social capital theory is that individuals are situated in networks of social relationships that provide access to resources residing in these social networks (Bourdieu 1986; Putnam 1995). The popularity of social capital is reflected in the myriad of definitions used to describe the concept. As defined by its principal theorists (Coleman 1990; Putnam 1993a, b), social capital refers to 'the sum of the actual and potential resources embedded within, available through, and derived from the network of relationships possessed by an individual or social unit. Social capital thus comprises both the network and the assets that may be mobilized through that network' (Nahapiet and Ghoshal 1998, p. 243).

Social capital theory has mainly gained interest among educational researchers with regard to students, for instance, to explain the effects of family or peer social capital on educational outcomes, such as student attainment and achievement (Goddard 2003; Horvat et al. 2003; Lareau and Horvat 1999; Morgan and Sorensen 1999; Ream and Rumberger 2008; Stanton-Salazar and Dornbusch 1995; see Dika and Singh 2002 for a review of educational research on social capital). However, organizational literature points to the value of social capital in organizational contexts (Leana and Van Buren 1999; Nahapiet and Ghoshal 1998). These studies argue that social capital contributes to organizational goals by facilitating the flow of information between individuals and overcoming problems of coordination (Adler and Kwon 2002; Lazega and Pattison 2001; Lin 2001; Tsai and Ghoshal 1998; Walker et al. 1997).

With many debates on the dimensions of social capital still ongoing (Dika and Singh 2002; Halpern 2005), two components can be found throughout most social capital literature (e.g., Bourdieu 1986; Coleman 1990; Halpern 2005). The first component of social capital addresses the pattern of social relationships, and is referred to as the *structural dimension* (Nahapiet and Ghoshal 1998). The pattern of social relationships can be visualized as a social network that provides individuals with the opportunities to obtain resources through the formation of ties or links between people. The use of social networks to study collaboration among teachers is growing rapidly (Coburn and Russell 2008; Daly and Finnigan 2009; Moolenaar 2010; Penuel et al. 2007, 2009; Spillane et al. 2010). These studies suggest that strong teacher networks benefit the dissemination of information on school-wide reform efforts, an open orientation towards innovation and overall school functioning, as well as counteract negative phenomena such as absenteeism and low job satisfaction due to teacher isolation (Bakkenes et al. 1999; Imants 2002).

A second component of social capital, the *relational dimension*, addresses the quality of the relationships in social networks. This quality is often described in terms of the norms, values, and expectancies that are shared by group members (Bourdieu 1986; Halpern 2005; Portes 1998). In social capital literature, trust among organizational members is identified as the most important affective norm characterizing a community (Nahapiet and Ghoshal 1998). Trust can be defined 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 (Cummings and Bromiley 1996; Hoy and Tschannen-Moran 2003). Trust is a central element in the debate about professional learning communities as it is believed to be the critical ingredient of all human learning (Rotter 1967). Moreover, trust is important for the development of open school cultures, increasing the quality of schooling, and student achievement (Goddard et al. 2001; Hoy 2002; Hoy and Sabo 1998; Tschannen-Moran 2004). Trust, according to Bryk and Schneider (2002), allows teachers to be vulnerable and open to new learning experiences that are central to ongoing teacher development in schools. As a consequence, improving the quality of education and student learning becomes both an individual and collective enterprise, which motivates teachers to engage in instructional change and willing to take more risk. Research has indeed shown that trust has positive effects on teacher professionalism (Tschannen-Moran 2009; Tschannen-Moran and Hoy 1998), teachers' job satisfaction (Van Maele and Van Houtte 2012), and teachers' motivation (Smylie 1999).

Social networks and trust are important elements in social capital theory (Nahapiet and Ghoshal 1998; Fukuyama 1995; Putnam 1993a) and literature on professional learning communities (Bryk and Schneider 2002; Bryk et al. 1999; Coburn and Russell 2008). However, only few studies have empirically addressed the relationship between social networks and trust in a large-scale sample. Therefore, the research question guiding this study is: To what extent are the individual and collective characteristics of teachers' networks predictive of teacher trust? In the next section, we will explore the link between social network characteristics and trust among teachers in the context of professional communities, which can benefit teacher professional development and, in turn, promote student achievement.

10.2.2 Linking Social Networks and Trust

In literature on professional communities and social capital, trust and social interaction often go hand in hand as interrelated elements. Trust is based on interpersonal interdependence (Rousseau et al. 1998) and embedded in relationships (Hoy and Tschannen-Moran 2003), and often associated with cooperation (Deutsch 1958; Tschannen-Moran 2001; Hoy and Tschannen-Moran 2003) and group cohesiveness (Zand 1971, 1997). Several scholars argue that trust, as a key element of professional communities, is prompted by a social context that creates vulnerability and the need for individuals to rely on each other to achieve individual or common goals (Bryk and Schneider 2002; Hoy and Tschannen-Moran 2003). Trust is suggested

to contribute to the efficiency of collective action because it allows collaboration to occur in the absence of sanctions and rewards (Onyx and Bullen 2000; Deutsch 1958; Tschannen-Moran 2001). Positive experiences from prior social interactions may foster trust by reducing uncertainty about the engagement and involvement of the other party and decreases vulnerability between individuals (Larson 1992; Uzzi 1997). As such, social interactions among teachers in professional communities may shape the context in which trust can flourish by providing a blueprint for future interactions, shaping expectations and conveying information about the norms and values of social interaction within the community. While the relationship between social interaction and trust seems commonsensical, the interrelatedness of patterns of social interaction and levels of trust in teams has received limited empirical attention.

In this study, we investigate whether the social network configuration of individuals is predictive of their trust in their colleagues within the school team. Moreover, we examine whether schools with high levels of social interaction are also characterized by higher levels of trust than schools with low levels of social interaction, as indicated by the schools' social network configurations. We acknowledge that causality may be an issue of debate. A circular relationship between social interactions and trust may also be defendable, in which interactions provide opportunities for trust to develop, be nurtured, or terminated, but in which trust in turn also shapes the conditions for interactions to occur (Coburn and Russell 2008). However, in this first large-scale exploration on the relationship between social network characteristics and teacher trust, we argue that social interactions, as an inevitable precondition for the formation of professional learning communities, precede the formation of trust by providing opportunities for trust to develop, nurture, grow, and decline.

Recently, scholars have started to voice the importance of studying social capital at multiple levels of analysis, for instance the individual teacher and the school level (Halpern 2005; Ibarra et al. 2005). Multilevel research is imperative since studies have suggested that the size and direction of a relationship between variables at individual level may vary from the size and direction of the relationship between the variables at the school level (Chen and Bliese 2002). In reality, the configurations of teacher interactions at the individual level (e.g., individual activity in the maintenance of social relationships) may have a considerable different meaning than the configurations of teacher interactions at the team level (e.g., the density of social relationships in a team). Therefore, we may expect that the effect of having multiple professional relationships is different for teachers and for schools. Considered at the school level, professional communities may benefit from a dense social network structure in which all teachers are tightly connected to one another. However, having to maintain a high number of relationships may be less beneficial to individual teachers because of the constraints that multiple relationships can pose with regard to time, attention span, and possibly conflicting interests between various connections. Therefore, it is crucial that studies on professional learning communities adopt a multilevel framework to assess relationships at multiple levels of analysis. Research on professional learning communities, too, can be criticized for a lack of attention to the multiple level character of studying individuals in teams (Smylie and Hart 1999; Coburn and Russell 2008; Geijsel et al. 2009). Therefore, this study

addresses the patterns of teachers' social interactions in professional school communities and its capacity to foster trust among teachers at multiple levels of analysis.

In social network analysis, two approaches can be discerned that are related to the level of analysis. The 'egocentric network approach' employs a micro-level perspective by focusing on the patterns of relationships of individuals. The social relationships of an individual ('ego') are examined by, for instance, the amount of ego's incoming and outgoing relationships, and the extent to which these relationships are mutual (also called 'reciprocal'). Reciprocal relationships are often indicated to be stronger relationships that reflect mutual interest, shared experiences, and risk-taking in the relationship. The idea behind an egocentric approach is that an individual's position in a social network can push or inhibit certain behaviors and/or attitudes, for example, a relationship between students' peer relationships and achievement (Lubbers et al. 2006), a teacher's isolated position and his/her job satisfaction (Bakkenes et al. 1999) or the position of a teacher in a social network and teachers' attitude toward innovation (Cole and Weinbaum 2007).

The 'whole network approach' examines the social network of a collective, group, organization, or community as a whole (Wasserman and Faust 1994). Whole social networks encompass a finite number of individuals and relationships between these individuals within a bounded community of people (e.g., a class, a school team, or a district office). Studies using this approach argue that collective level characteristics of a social network as a whole (e.g., overall density and reciprocity) are related to individual and collective variables, such as individuals' behavior and attitudes and organizational outcomes. Putnam's rationale, that the presence of stable social networks in a community facilitates coordination and communication, and thus allows dilemmas of collective action to be resolved, is an example of a collective-level approach to social networks and social capital (Putnam 1993a).

Since multilevel social network studies are scarce, we pose similar expectations at multiple levels of analysis for the relationships under study, based on the limited evidence available. Earlier work on social interactions in teams (Coburn and Russell 2008; Hodson 2005) suggests that having more relationships is beneficial to positive experiences and teacher trust. We therefore assume that teachers who maintain more relationships, as well as experience more mutual relationships, will foster higher levels of trust in their colleagues.

As collaborative experiences and the exchange of knowledge and ideas are at the core of professional learning communities, adopting a social capital framework to study the way teachers are situated in the social contexts of their school community can provide valuable insights in the social fabric that signifies the 'community' of schools as professional learning communities. Moreover, by focusing on trust, social capital attends to shared norms among community members that may foster or inhibit the development and valuable outcomes of strong professional communities. As mentioned earlier, professional community literature lacks studies conducted at multiple levels of analysis. We believe that insights into the relationships between teachers' social networks and teacher trust at multiple levels of analysis will contribute to a more nuanced perspective on the individual and school-wide foundations of professional communities. In the next section, we will describe a large-scale

Table 10.1 School demographics ($N_{schools}=49$; $N_{educators}=751$)

	M	Sd	Min.	Max.
SES[a]	8.2	10.1	0.4	47.3
Number of students	226	117	61	545
Average age	45.9	10.6	21	63
Average fte	0.54	0.49	0.23	1
Team size	18.1	6.7	7	31
Gender ratio[b]	72.4	9.6	50.0	90.9

[a] SES is calculated as the weighted percentage of students for whom the school receives extra financial resources

[b] Gender ratio is calculated as the ratio of female to male team members with 100% referring to a team with only female team members

empirical study among teachers and principals of 49 Dutch elementary schools, designed to address our research question.

10.3 Method

10.3.1 Data Collection

Similar to many countries, educational policies in the Netherlands are introducing the concept of professional learning communities within schools as a way to incorporate life-long learning and professional development, with the ultimate goal to improve teacher practice and, in turn, student achievement. We conducted a survey study at 49 elementary schools in the south of the Netherlands, representing 751 educators. The schools resided under a single school board in the Avvansa School District[1], which coordinated collective resources such as financial, IT and personnel support. The sample schools were selected as the school board had initiated a district-wide ongoing school and teacher monitoring process around school improvement.

In total, 47 school leaders and 704 teachers participated in the study by filling in a questionnaire, reflecting a response rate of 95.9% and 86.1%. Of the respondents, 72.5% was female, 46.8% worked full-time (32 h or more) and 51.0% was 50 years or older. All respondents had been working at the school for at least 6 months, and the school teams were functioning in the same team composition for at least 6 months. Additional sample demographics are presented in Table 10.1.

10.3.2 Instruments

Social networks In order to study the social network characteristics among educators in professional school communities, we used social network analysis. Social

[1] All names are pseudonyms.

Table 10.2 Items and factor loadings of the trust scale (N=751)

	Factor I
Trust (α = 0.87)	
I trust my coworkers	0.66
Even in difficult situations, I can depend on my coworkers	0.71
I find that my coworkers are open to me	0.72
I share personal information with my coworkers	0.52
I find that my coworkers are honest to me	0.68

network analysis provides researchers with an approach to systematically map patterns of interpersonal interaction in order to understand how individual action is situated in structural configurations (Valente 1995). Insights in organizational social networks can help to 'explain how organizational knowledge is accumulated and applied' (Kilduff and Tsai 2003, p. 63) and may therefore be useful in the study of schools as professional communities. To map social interactions that would contribute to building organizational knowledge and professional communities, we examined the social network of work communication within schools. We asked the respondents to answer the question 'Whom do you turn to in order to discuss your work?'. Respondents were asked to name the people in their school team whom they turn to in order to discuss their work (e.g. Flap and Volker 2001). A school specific appendix was added to each questionnaire, in which the names of all school team members were represented by a letter combination (e.g., Mr. Eric McEwen[2]=AB). Respondents could indicate a relationship by answering the letter combination of the intended colleague(s), and they could name as many colleagues as they wanted (free choice).

Trust We measured trust by a Dutch translation of the 'trust in colleagues' scale of Hoy and Tschannen-Moran (2003). The items were scored on a four point scale, ranging from 1 (*strongly disagree*) to 4 (*strongly agree*). The scale for trust was composed of five items, for instance 'I trust my colleagues' (α=.87). Scale scores were composed using the mean score of all trust items. When an individual missed more than one item from the scale, the trust scale score was not computed and considered missing. Principal component analysis confirmed that the five items loaded highly on a single factor that explained 65.6% of the variance. The items and factor loadings are presented in Table 10.2.

Demographic variables The survey for teachers and principals also included questions on background demographics, such as age, gender, and number of working hours (fte). Information on team size, number of students served, and socio-economic status (SES) was collected from the district main office. Additional collective level demographics were calculated by aggregating individual level demographics, such as average age, gender ratio (percentage of female educators in the team), and average number of working hours (fte). All demographic variables were standardized to facilitate interpretation of the multilevel models.

[2] All names are pseudonyms.

10.3.3 Data Analysis

Social network analysis Social network analysis is a technique to systematically examine patterns of relationships in order to understand how individual action is situated in structural configurations (Valente 1995). We calculated several social network measures at both the individual and collective (whole network) level (cf. Borgatti et al. 1998; Burt 1983). As indicators of an individual's social network, we included in-degree, out-degree, and ego-network reciprocity. Indicators of the schools' social networks were density, reciprocity, and centralization. All social network characteristics were calculated and analyzed by means of UCINET 6.0 (Borgatti et al. 2002). Moreover, all predictors were standardized to facilitate interpretation of the multilevel models. We will now describe these network characteristics in detail.

Individual-level social network measures We included three characteristics of the social network of individuals. Both in- and out-degree provide information on the relationships of an individual. *Out-degree* refers to the number of people chosen by the respondent. In other words, a respondent will have a high out-degree, if s/he indicates to turn to many (different) colleagues in the school team to discuss work. As such, out-degree can be interpreted as an indicator of relational activity. *In-degree* refers to the number of people by whom the respondent is chosen. A respondent will have a high in-degree, if s/he is chosen by many (different) colleagues as a person with whom they discuss work. In-degree can therefore be interpreted as an indication of an individual's popularity, or influence over a network (a higher in-degree means being chosen by many team members). Both measures were divided by the team size of the individual's school (normalization) in order to facilitate comparisons between schools. The social network characteristic of reciprocity mirrors the two-way nature of the relationships in the network. A relationship between two people is reciprocal when both respondents indicated they have a relationship with the each other. We calculated ego-network reciprocity *(ego-reciprocity)* as each individual's proportion of reciprocal ties to the total amount of ties in which the individual is involved. Ego-reciprocity thus reflects the extent to which the network surrounding an individual (ego-network) consists of reciprocal relationships.

Organizational-level social network measures At the school level, we included three indicators that provided information on the patterns of social relationships within the school teams. For each of the schools' social networks as a whole, we calculated *density* as the proportion of existing relationships to the maximum number of relationships possible in the network. The value of density varies between 0 (no relations in the network) and 1 (all actors are connected to each other). Density can be used to indicate group cohesion (Blau 1977; Wasserman and Faust 1994). *Reciprocity* was calculated as the ratio of the number of observed reciprocated relationships to the total number of relationships in the team (see Zeggelink 1993). A network with a high centralization depicts a large difference between one or a few highly central person(s) and other (more peripheral) people in the network (Wasserman and Faust 1994). *Centralization* represents the variability in the in-degree scores

of the individuals in a network. The value of in-degree centralization will reach the maximum of 1 if a single respondent occupies a very central position in the network (is chosen by others as a valuable person to discuss work with) and other actors are not central at all, whereas the lowest value of 0 indicates that all actors in the network have the same in-degree. In other words, a team with high in-degree centralization is typified by only one or a few central (popular) persons, who are frequently selected by other team members, and more peripheral team members.

Analysis strategy First, we will provide a description of social network characteristics of work-related discussions among educators as the 'social fabric' within schools. Second, in order to account for the nested structure of our data (teachers in schools), we applied multilevel analysis (HLM) to examine our research question. Several multilevel models were analyzed. We started with a random intercept model (the baseline model) to decompose the variance of the dependent variable 'teacher trust' into a teacher level component and a school level component. After including significant individual level demographic variables, we added the individual level predictors to the model to account for the influence of individual level social network characteristics on trust (Model 1). Next, after adding school level demographics to the equation (Model 2), we tested whether collective level social network characteristics added to the prediction of trust in school teams (Model 3). As such, these hierarchical multilevel models tested whether the schools' social network as a whole contributed to the prediction of trust above the social network characteristics of individual educators and individual and school level demographics. This way, we were able to test whether between-school relationships differed from within-school relationships between social network characteristics and trust.[3]

10.4 Results

10.4.1 Describing Individual and School-Level Social Networks

On average, individuals in a sample school indicated they discuss work-related matters with roughly a third of their colleagues (average out- and in-degree is 34.6%). In general, about a third of all relationships in which individuals are involved, are reciprocated. These numbers are reproduced at the school level, where we can notice an average density of 32.0%. This means that of all possible relationships that could exist in a school team around work-related discussions, almost a third of these relationships is actually confirmed to exist by the respondents. Of all existing relationships, 36.5% were mutual relationships in which individuals turn to each other to discuss

[3] In addition, random slopes were tested, as well as school-level univariate regression models to test the impact of the schools' social network structure on trust ($n=49$). None of these tests provided additional insights and are therefore not reported here.

Table 10.3 Descriptives of the study variables at the level of definition

	M	Sd	Min	Max	N
Individual level social network characteristics					
1. Out-degree	0.35	0.24	0.00	1.00	749
2. In-degree	0.35	0.21	0.00	1.00	749
3. Ego-reciprocity	0.37	0.23	0.00	1.00	746
Collective level social network characteristics					
4. Team density	0.35	0.09	0.15	0.52	49
5. Team reciprocity	0.38	0.09	0.17	0.57	49
6. In-centralization	0.34	0.11	0.14	0.64	49
7. Trust	3.22	0.56	1.00	4.00	737

Table 10.4 Correlations between individual level social network characteristics and trust ($N = 732$)

	1	2	3	4
1. Out-degree	1.00	0.35[a]	0.40[a]	0.23[a]
2. In-degree		1.00	0.42[a]	0.13[a]
3. Ego-reciprocity			1.00	0.12[a]
4. Trust				1.00

[a] Correlation is significant at the 0.01 level, two-tailed

Table 10.5 Correlations between collective level social network characteristics and aggregated trust ($N = 49$)

	1	2	3	4
1. Density	1.00	0.43[a]	0.10	0.17
2. Reciprocity		1.00	0.10	−0.27
3. Centralization			1.00	0.01
4. Trust				1.00

[a] Correlation is significant at the 0.01 level, two-tailed

their work. The sample school teams were on average rather decentralized, which means that mostly, discussion relationships are dispersed among many team members with few educators being more popular as discussion partners than others. Table 10.3 contains the social network characteristics at both the individual and collective level.

Correlation analyses Our research question focused on the relationships between individual and school level social network characteristics and trust. Correlations are presented in Table 10.4 (individual-level relationships) and Table 10.5 (school-level relationships).

At the individual level, the correlations between trust and social network characteristics were found to be statistically significant and in the expected direction. Moreover, the social network characteristics correlated moderately with each other, reflecting the interdependence of the network data; per definition, the denser a so-

Table 10.6 Multilevel regression analyses of the effect of individual level and collective level social network characteristics on trust ($N_{schools}=49$, $N_{educators}=732$)

	Baseline model		Model 1		Model 2		Model 3	
	Est.	S.E.	Est.	S.E.	Est.	S.E.	Est.	S.E.
Intercept	3.21	0.03	3.18	0.04	3.22	0.03	3.22	0.03
Teacher								
In-Degree			**0.05**	0.02	**0.07**	0.02	**0.05**	0.02
Out-Degree			**0.13**	0.02	**0.15**	0.02	**0.14**	0.02
Ego-Reciprocity			0.03	0.02	0.02	0.02	0.03	0.02
School								
Team size					**0.13**	0.03	**0.17**	0.05
Team density							**0.11**	0.05
Team reciprocity							**−0.08**	0.03
Centralization							−0.01	0.03
−2*log likelihood	**1166.06**		**1108.51**		**1096.92**		**1089.03**	
			$\chi^2_{DIFF.}$ (3) = 57.55, $p<0.001$		**$\chi^2_{DIFF.}$ (4) = 69.14, $p<0.001$**		**$\chi^2_{DIFF.}$ (7) = 77.03, $p<0.001$**	
Explained (total)								
School	**(13.4 %)**		**5.0 %**		**9.7 %**		**11.7 %**	
Teacher	**(86.6 %)**		**0.0 %**		**17.7 %**		**27.7 %**	

Significant estimates are displayed in **bold** font

cial network gets, the higher the mere chance that relationships will be reciprocal. At the school level, correlation analyses did not show significant relationships between patterns of social relationships and trust among school team members. Moreover, density and reciprocity were moderately correlated, again reflecting the interdependence of the social network data. Both density and reciprocity were unrelated to centralization in the sample schools. Next, we will consider the multilevel analyses conducted to provide additional insight into the effect of individual and collective level social networks on trust in professional communities.

Multilevel analyses The first multilevel model, the baseline model, showed that a statistically significant amount of variance in individual trust scores can be attributed to the school level. The intraclass correlation coefficient for trust was.134 ($p<.001$), thus indicating the need to use multilevel analysis techniques to examine the relationship between social network characteristics and trust. In other words, 13.4 % of the variability in individual trust of school team members in their colleagues occurs between schools, and the remaining 86.6 % of the variance occurs within schools at the teacher level. Results for the multilevel models are depicted in Table 10.6.

10.4.2 The Importance of Work Related Discussion for Teacher Trust at Multiple Levels

To address our research question, we first consider the effect of individual-level demographics on trust. As demographics, we included educators' age, gender, number

of working hours (fte), tenure, years of experience in education, years of experience in their current school, and whether they fulfilled additional administrative tasks in support of the principal. All individual level demographics were found to be unrelated to trust and were thus excluded from further analyses.

In Model 1, we examined the effect of individual-level social network characteristics on teachers' trust in their colleagues. Results indicated that the number of people with whom an individual discusses work had a positive predictive relationship with the individual's trust in his colleagues. Teachers who displayed high relational activity by indicating they have work-related discussions with many colleagues (high out-degree), showed greater trust in these colleagues than teachers with lower out-degree. Moreover, the more a teacher was chosen, or the more popular a teacher was as a colleague to discuss work with (high in-degree), the more trusting s/he reported to be of her/his colleagues. Surprisingly, the amount of reciprocal relationships in which an individual was involved did not affect the individual's trust. The individual-level model added significantly to the random intercept model (χ^2_D (3) = 57.55, $p < 0.001$).

Next, we added school-level demographics to the multilevel equation. We included average age, gender ratio, average tenure, team size, average years of experience in education, average years of experience in the current school, and average percentage of additional administrative tasks in support of the principal. Of these demographic variables, only team size showed a statistically significant positive relationship with teachers' trust in their colleagues. The larger the school team, the more trust individuals reported in relation to their colleagues. Apparently, smaller school teams are characterized by lower trust than larger teams. Therefore, only team size was included in Model 2 as a school-level demographic covariate. The addition of team-size added significantly to the prediction of trust (χ^2_D (1) = 11.59, $p < 0.001$).

Finally, Model 3 included the collective level social network characteristics. With this model, we tested whether the social configurations of the schools' social networks had any additional affect on trust among teachers above the effect of individuals' social network characteristics. The addition of collective level social network predictors added significantly to the prediction of trust (χ^2_D (3) = 7.89, $p < 0.05$), indicating that collective social network characteristics contributed to the prediction of teacher trust on top of the prediction by the pattern of relationships that an individual maintained. Results suggest that the density of the social configurations in a team is a strong indicator of trust among school team members, above and beyond the relational activity of individuals (the number of out- and ingoing relationships). That is, the more densely connected a school team was, the more trusting the individual school team members were of each other. Density of a team is thus at least as important for fostering trust in schools as the maintenance of individual relationships. Interestingly, while the amount of individual-level reciprocal relationships did not affect trust-levels of the individual, collective level reciprocity had a *negative* predictive relationship with trust among educators. A teacher's trust in his colleagues did not appear to be affected by the number of mutual relationships in which s/he was involved, but this teacher's trust in colleagues was negatively influenced by an abundance of reciprocal relationships at the school level. The higher

the collective level reciprocity, the lower the level of trust among school team members. Conversely, schools with few reciprocal relationships were characterized by higher trust than schools with more reciprocal relationships. Both effects of density and reciprocity were found to be highly significant ($p < 0.001$). The centralization of the work-related network did not affect teacher trust significantly. The significant collective level effects of density and reciprocity on individuals' trust in their coworkers above individual level effects of in- and out-degree suggest the importance of the overall social configurations in a school team as a whole for important elements of professional communities such as trust.

In sum, the relationships between social network properties and trust tell a compelling story about teacher interactions that make up the social fabric underlying professional school communities. Not only the amount of individual relationships defines an individual's trust in his/her coworkers, but this trust is also influenced by the social network configurations of the professional community as a whole. Moreover, it appears that while certain social network characteristics nurture the growth of trust, such as density and individual social activity, other social network configurations may be less favorable to the development of school-wide trust, such as work-related reciprocity. In the next section, we will discuss our findings, provide limitations to the study and offer implications for research and practice.

10.5 Conclusions and Discussion

Professional communities are increasingly studied as the key to strengthening teachers' professional development and schools' capacity to address ongoing changes in educational policy and practice. Several scholars have suggested that the theory of social capital would provide a valuable lens to describe collaborative structures, such as professional communities (Coburn and Russell 2008; Daly and Finnigan 2009). Social capital theory provides a framework that includes characteristics of strong professional communities, such as social interaction in social networks, trust, a focus on both the individual and the collective, and beneficial outcomes. However, both social capital theory and literature around professional communities lack insights in the interplay of elements that form the concept. Also, large-scale empirical studies on social capital in educational organizations are scarce, and most empirical research only focuses on a single level of analysis. This chapter adds to the existing literature on social capital and professional communities by describing an empirical examination of the relationship between two main elements that social capital and professional communities have in common, namely social networks and trust. In addition, it offers a unique contribution by testing the relationship between teacher trust and social network characteristics at multiple levels of analysis.

The aim of this chapter was to deepen our understanding of schools as professional communities by examining social networks as the social fabric of which professional communities are woven. Building on social capital theory, we hypothesized that social interactions would provide communities with the opportunity to

build trust among teachers. Moreover, we argued that social networks in professional communities need to be studied at two levels of analysis: the school level and the teacher level. We analyzed the relationship between social networks and trust in 49 Dutch elementary schools among 751 educators, using multilevel analysis. To assess social interactions that lie at the core of professional learning communities and that may support school-wide capacity for school improvement, we focused on social interactions around the discussion of work-related matters. Findings indicated that several characteristics of social networks predict trust among teachers. For instance, teams with a dense pattern of work-related social interaction reported higher trust than teams with more sparse work-related interaction. Also, the more a teacher discusses work-related issues with different team members, the more the teacher trusts her/his school team members. These results support the notion that patterns of social interaction at both teacher and school level may strengthen or diminish school-wide trust among educators in support of individual and collective teacher learning and, ultimately, student achievement and school improvement. We guide this section by the key themes from our findings, limitations and future directions for research, and implications for educational policy and practice.

10.5.1 Strengthening Trust Through Social Interaction

The current educational focus on professional communities urges the need to examine collaborative structures among teachers across schools, and revisit how educators capitalize on their social relationships (Honig 2009). While recent studies point to the importance of teacher social networks underlying professional learning communities for the dissemination of reform and innovations (Coburn and Russell 2008; Cole and Weinbaum 2007; Daly et al. 2010) and the generation of new knowledge and practice (Moolenaar et al. 2010, 2011, 2012), the interplay of social network characteristics and other key elements of professional communities, until now, has had a limited empirical base. Our work suggests that social network characteristics have a predictive relationship with trust among educators, and it underlines the importance of studying the relationship between elements of professional communities at multiple levels of analysis. To illustrate, we discuss the influence of the number of relationships at both individual and collective level on teacher trust

At the individual level, the number of individual relationships appeared to positively influence teacher trust; the more teachers indicated they have work-related discussions with other team members, the higher the trust they reported in their colleagues. When we took a more nuanced perspective and added school-level network characteristics, we found that the density and reciprocity of the overall school social network of work discussion had an additional, and as important, effect on individual teachers' trust. In sum, the more relationships, the more trust, and this assumption holds at both levels of analysis. This result corroborates and extends earlier findings in a single-level smaller scale qualitative study (Coburn and Russell 2008). Our finding implies that stimulating the individual bonding and recognition

of relationships between individual teachers will enhance their trust, as well as enlarge the density of relationships within the organization, which will in turn raise individual levels of trust as well. While it pays to start building relationships one by one, this study suggests that it is at least as important to attend to the social configurations of the team as a whole for the fostering of beneficial elements of professional communities, such as trust. Being embedded in a strong social network of work-related relationships is as important as maintaining individual relationships. This finding clearly emphasizes the need for policymakers and principals to attend to the value of strong social networks as a power base for building professional communities. In this case, multilevel analysis offered a more detailed picture of the relationships under study, and therefore we argue that multilevel analysis should be employed in large-scale educational research involving social network analysis as much as possible.

10.5.2 The Dark Side of Social Network Configurations

Results from our large-scale study suggest that while individual and collective social activity nurture the growth of trust, other social network configurations may be less favorable to the development of teacher trust. While at the individual level, social network characteristics only fostered trust or had no significant effect, at the school level we found evidence that certain social configurations could also have negative consequences for the development of professional communities. In this regard, findings of network reciprocity at both levels of analysis showed an interesting picture. At the individual level, the amount of an individual's reciprocal relationships did not affect his/her trust in colleagues. On the contrary, at the school level, we found a negative predictive relationship between reciprocity and teacher trust. An explanation may be found in the dyadic nature of the measurement of reciprocity. Reciprocity is a measure based on relationships between a pair of two people, also called a 'dyad'. It could be that school teams in which individuals rely heavily on one-on-one reciprocal relationships are generating lower levels of trust, because people outside these reciprocal relationships may feel like outsiders and distrust these 'cliques' of heavily reciprocated relationships. When a school is characterized by many reciprocal relationships, it may indicate an environment in which it feels 'unsafe' to discuss work-related matters and be vulnerable and open to many people in the team (Hoy and Tschannen-Moran 2003; Daly and Finnigan 2009; Daly 2009). In these settings, teachers may only be vulnerable to the people they know will not 'harm' them, that is, the colleagues with whom they have had many experiences of long-lasting, safe exchange of knowledge and information. In contrast, teams that share work-related matters among a more dispersed group of colleagues instead of having to rely on one-on-one relationships may thus generate a 'safe' atmosphere in which trust can grow. In such a social configuration of relationships, knowledge is transferred, modified, and shared among the whole team, in which teachers have to be less worried about being 'left out of the loop' or socially

excluded. The reciprocation of resources in this type of climate is not necessarily restricted to dyadic relationships but may occur in groups larger than dyads, thus resulting in lower (dyadic-based) reciprocity between individuals.

In this regard we also have to address the possibility of a circular relationship, in which patterns of social interactions may influence trust, which in turn may influence individual behavior and patterns of social interactions. Of course, when reciprocal dyadic relationships generate distrust among faculty, this climate of distrust may very well cause more dyadic 'closure' in the relational patterns in schools, in which people tend to only go to 'safe' others with whom they already have frequent contact, thereby increasing the number of reciprocal relationships.

In sum, our findings suggest that in order to encourage professional communities and nurture trust, it is more important to focus on building relationships across the whole team, than small-scale one-on-one relationships that carry the risk of damaging trust by highly closed reciprocal relationships. Future research could investigate this assumption by examining relational patterns at levels between the dyad and the school team, such as triplets. Moreover, our results underline the need for more extensive social network research into the 'dark' side of social network configurations.

10.5.3 Limitations and Future Directions

Although this chapter offers a valuable contribution to theory on social capital and professional communities, several limitations have to be addressed. While causality between the relationships under study is suggested by the reviewed literature, our research design was not developed specifically to test causality. It would be interesting to study the emergence of trust in newly formed professional communities, using experimental designs, and the development of trust alongside social interaction over a period of time by means of longitudinal research. Moreover, although the number of schools participating in the study was sizeable, it is desirable to examine larger samples in order to substantiate our claims. That way, advanced technical statistical analyses, such as multilevel structural equation modeling, may validate these findings and test more complex conceptual models. These models can contribute to a better understanding of the paths through which social networks and trust have effects on teacher practice and student outcomes. However, our sample of 49 schools provided reasonable statistical power, and the magnitude of the reported significant effects can be regarded at least as a first indication of the importance of the relationships under study (Mohammed and Ringseis 2001).

Because the embeddedness of individuals in social networks may differ in various contexts, it would be valuable to explore social interactions and trust underlying professional communities in various international contexts and educational settings, such as secondary, higher, and vocational education. A next step in the study of professional communities and social networks would be to empirically validate the relationship between elements that foster professional communities, and suggested

outcomes of professional communities, both for teachers and schools (for instance, teacher satisfaction and turnover, orientation towards innovation, collective involvement, collective efficacy) as well as for students (cognitive and non-cognitive achievement). Much about factors that affect social interaction, such as leadership and teacher behaviors, remains to be explored. This chapter demonstrated that social network analysis across schools enriches our understanding of the foundation of social relationships on which professional communities are built, and offers great opportunities to explore the potential of social relationships for the development of professional communities.

10.5.4 Building Professional Communities: Implications for Educational Policy and Practice

Scholars around the globe draw attention to teacher collaborative structures, such as professional learning communities and communities of practice, as the vehicles to establish a system of life-long learning and teacher development in daily school practice. Knowledge about how teacher collaboration, fundamental to professional learning communities, affects levels of trust among teachers gives valuable insights into the chain of variables that characterize professional learning communities, provide school-wide capacity for teacher development and will ultimately contribute to teacher and student learning. In this chapter, we suggest that a first step to build and maintain successful professional learning communities is to understand the social fabric out of which professional communities are woven. While the number of work-related relationships appears necessary for the emergence of a strong social fabric underlying professional communities, other factors, such as high dyadic reciprocity, might be less favorable. To enhance trust in professional communities, and ultimately student performance, educators, scholars and policy-makers justifiably emphasize the importance of social interaction and collaborative structures. In the right configuration, this social fabric provides the structure to nurture an open and safe climate in which trust prevails and school-wide capacity for teacher development is consequently advanced.

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Chapter 11
Trust, Control, and Comprehensive School Reform: Investigating Growth in Teacher-Teacher Relational Trust in *Success for All* Schools

Timothy G. Ford

11.1 Introduction

Philosopher Sissela Bok (1978) once wrote "Whatever matters to human beings, trust is the atmosphere in which it thrives" (p. 31). If we contend that "what matters" in education is improving our nation's schools in ways which ensure that all children have the opportunity to succeed, then the past decade of research on trust in education in particular has brought substantial evidence to bear on Bok's claims. In their seminal book, *Trust in Schools*, Bryk and Schneider (2002) make a strong case for relational trust as a critical resource for school staff embarking on ambitious school improvement efforts, demonstrating that strong ties cultivated through shared expectations and fulfillment of mutual obligations increase the likelihood of school change and gains in student performance. For teachers engaged in such reform efforts, trust can be particularly critical. The "cellular structure" of American classrooms has historically led teachers to experience a significant amount of isolation from their colleagues—a fact that has resulted in a high degree of autonomy in teaching practice, little collaboration around instruction, lack of a common technical culture and language, and/or few shared norms and values around teaching (Fullan 2007; Lortie 1975).

Indeed, evidence continues to mount from myriad studies as to the importance of social trust as a key facilitating factor in advancing and sustaining school reform (Bryk and Schneider 2002; Kochanek 2005; Louis 2007; Meier 1995, 2002; Wolf et al. 2000), building school-wide professional community (Bryk et al. 1999; Louis et al. 1995), and improving student performance, measured in terms of scores on standardized tests (Bryk and Schneider 2002; Forsyth 2008; Forsyth et al. 2006; Goddard 2003; Goddard et al. 2001; Yasumoto et al. 2001). However, less is known about how schools—particularly chronically under-performing schools plagued by low levels of

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trust—ought to collectively work on *building* trust in order to improve teaching and learning (Ford and Youngs 2009; Kochanek 2005). A particularly understudied area of trust research concerns the ways in which specific policies and practices may directly or indirectly build trust among school adults, in particular teachers (Adams 2008).

Indeed, few have considered the role of trust in whole-school instructional improvement programs and what we might potentially learn about its presence—or absence—throughout the course of program implementation. The improvement process or "theory of action" specified by many Comprehensive School Reform (CSR) models entails addressing many problems related to instructional management, leadership, and relationships between colleagues which may also be impeding the development of trust. It is therefore possible that the process of instructional improvement that some CSR programs seek to foster may also create conditions more amenable to trust development by, for example, providing more opportunities for teacher collaboration, inculcating a set of shared norms, values, and goals for teaching and learning, and/or providing supportive leadership around instruction.

One of the most popular CSR models in the United States, *Success for All* (SFA) was developed by Robert Slavin and Nancy Madden at Johns Hopkins University in the 1980s (Peurach 2011; Slavin et al. 2009). SFA is an elementary-based CSR program which, since its initial development and implementation in a single Baltimore school in 1987, has been adopted by over 1,200 schools across 46 states (Borman et al. 2007). Its substantial growth in this period was due, in large part, to extensive evidence of its robust effects on student achievement (see, for example, Borman et al. 2004, 2007). Further, researchers from the *Study of Instructional Improvement* (SII), conducted at the University of Michigan from 1999–2004, have also found that SFA schools produced highly distinctive patterns of literacy instruction as compared to control schools, and also high rates of academic achievement as compared to both control schools and schools implementing other popular CSR models (Correnti and Rowan 2007; Rowan et al. 2009).

For researchers studying the role of trust in school improvement and/or academic success, the above findings of SII researchers with respect to the SFA program beg two critical questions for further exploration. First, what role did trust play (if any) in the process of implementing the SFA program in the SII sample of SFA schools? Did trust grow throughout the course of implementation? Did it remain stagnant or decline? A study which sought to answer this question utilizing the same SII data could potentially provide further evidence of the role of trust (and change in trust over time) in school improvement.

A second question which builds on the first is: What aspects of the SFA instructional improvement process are related to change in trust over the course of program implementation? Perhaps the most widely-recognized aspect of the SFA model is its promotion of instructional change through the establishment of *procedural controls*, in other words, instructional "scripts," detailed pacing guides and assessments, and monitoring of fidelity to the model (Rowan and Miller 2007). Prior research in organizational science on the relationship between formal control systems and trust has highlighted its inherent complexities (see, for example, Das and Teng 1998; Forsyth et al. 2011). The question of whether or not SFA's formal

control mechanisms encourage (or inhibit) the development of trust among teachers bears further scrutiny.

Pursuing answers to the above questions is the goal of this study. Utilizing data from a sample of *Success for All* schools from the Study of Instructional Improvement (SII) at the University of Michigan from 1999–2004, this chapter will investigate the extent to which growth in relational trust among teachers occurs in concert with the SFA model's design and implementation strategy, and explores the factors related to its instructional improvement processes which are most related to change in trust among teachers.

11.1.1 The Success for All Program

SFA features a school-wide curriculum for grades K-8 based on the latest scientific research on effective literacy and mathematics instruction.[1] Ensuring early reading success is accomplished through the *Reading Roots and Wings* program—a carefully staged and sequenced literacy development process. The goal of *Reading Roots* is to quickly establish strong fundamental reading skills primarily through the use of teacher-directed activities, while gradually increasing student-led reading activities as students' reading skills strengthen. *Reading Wings* builds on *Roots* successes through the use of cooperative learning techniques, which research suggests increase students' motivation and engagement (Slavin 1995). Literacy activities such as vocabulary building, decoding practice, and story-related writing are accomplished through work in teams, which is initiated and supported by teacher-led instruction (Slavin and Madden 2001; Slavin et al. 2009).

Aside from instruction, the program provides for specially trained tutors to work one-on-one with struggling students in first through third grades, a quarterly assessment and regrouping system to place students with peers of the same reading level, a 'solutions team' focused on parent education and involvement, and a program facilitator responsible for on-site instructional coaching, management of the assessment system, and ensuring all staff are communicating with one another (Peurach 2011; Slavin and Madden 2001; Slavin et al. 2007). Further, schools are required to hold "component meetings" that enable feedback loops and ongoing dialogues between on-site staff and SFA foundation staff as well as provide monthly opportunities for school staff to interact with one another as a part of "teacher learning communities" (Harris 2003; Slavin et al. 2007). Schools and/or districts who adopt *Success for All* as a school-wide program are provided with materials, extensive support in the form of training and professional development, and detailed instructions on how to implement and sustain the model. Prior to the adoption of the SFA program in a school, the *Success for All Foundation* requires that each school put the decision to a vote in which the approval of at least 80% of school personnel is needed to proceed (Peurach 2011).

[1] Note that the descriptions of the SFA program are based on its design at the time of the SII study (1999–2004).

11.1.2 Research on the Relationship between Control and Trust

The use of organizational control mechanisms in environments involving concerted collective effort is commonplace in many social institutions. As this concept pertains to schools, control mechanisms can be categorized into two main types: formal (bureaucratic) and informal (social) (Das and Teng 1998; Ouchi 1979). Formal control mechanisms are those which establish explicit rules and expectations for behavior and/or desired outcomes by means of any of the following: "… policies, procedures, rules, hierarchy, forms, direct supervision, and evaluation" (Forsyth et al. 2011, p. 110). In other words, the intention in utilizing formal control mechanisms is to influence and/or affect others' behavior in desired ways.

Some researchers have theorized that formal control mechanisms are antithetical to trust (Argyris 1952). In this argument, the need of leadership to establish policies and procedures to control behavior sends the message to those "on the ground" that they are not trusted to carry out their duties faithfully as intended. Others have argued that the presence of control systems changes how participants mentally frame the situation, setting up a self-fulfilling prophecy whereby collaborators are automatically perceived to be less trustworthy (Tenbrunsel and Messick 1999). More recently, empirical research on the effects of formal control mechanisms suggest a more complex relationship between control and trust. In most cases, researchers have concluded that formal control need not be the adversary of trust; in fact, studies in the organizational sciences have shown that formal control can be useful to assist in establishing trust where it is absent (Goold and Campbell 1987; Goold and Quinn 1990) or enhancing it where present (Coletti et al. 2005), provided that the tasks involved are programmable, standardized, and the outcomes can be easily measured and/or evaluated (Forsyth et al. 2011).

Informal control, or social control, in contrast, can be thought of as an indirect way to elicit cooperation and/or desired behavior and outcomes through the establishment of common goals, norms, or values (Forsyth et al. 2011). In the education setting, common social control techniques are found, for example, in leaders' efforts to build a vision for school improvement, provide strategic professional development, and establish common learning goals for school personnel. Owing to the fact that social institutions like schools have high degrees of performance ambiguity, Forsyth et al. (2011) argue that, the majority of control mechanisms used in schools should be informal, not formal or prescriptive, in nature. Recent research into the trust growth potential of other CSR models seems to support their conclusions. In contrast to SFA, the *Accelerated Schools* program is an example of a CSR program which employs primarily social controls—what Rowan and Miller (2007) refer to as "cultural controls." At the outset of implementation, the focus is not on improving instruction, but in preparing the school culture and community for such work in the future. Staff work together developing a vision, share in making decisions about instructional goals, and form cadres to reach those goals, collaborating and engaging in critical dialogue about teaching and learning along the way. In a

separate study utilizing the SII data, Ford (2010) found that the *Accelerated Schools* model did in fact produce significant growth in trust among teachers throughout the course of the SII implementation period, suggesting that it is, at its core, an effective trust-building model for schools.

11.1.3 SFA, Control and Trust

Scholars have noted that the SFA program addresses the "agency" problem of teacher implementation of instructional reform by tightly controlling the content and mode of delivery of instructional material (Rowan and Correnti 2009; Rowan and Miller 2007). At least in the initial phases of implementation, teachers are required to follow a scripted instructional plan which guides teaching activities through a 90-minute reading lesson period and a weekly lesson sequence. Each school has a "program facilitator," whose job it is to ensure that teachers are becoming proficient in the instructional model. They do so by carefully monitoring teachers' instruction and providing feedback and/or guidance, consulting assessment data, teaching demonstration lessons, and organizing other professional development activities (Peurach 2011).

Based on the program's primary organizational components, it seems clear that much of SFA's approach to instructional change involves the use of formal control mechanisms. Indeed, in prior research, Rowan and his colleagues have labeled SFA's approach to instructional change as *programmatic* in nature (Rowan and Correnti 2009; Rowan and Miller 2007). Prior research on the effects of this approach to instruction on teachers' perceptions of and willingness to implement the model are less than favorable, however. Datnow and Castellano (2000, 2001), in separate studies of elementary schools implementing the SFA program, reported that teachers implementing the program often resented monitoring of their practice and often felt that the scripted nature of the program constrained their autonomy and creativity. Moreover, Beatty (2011) found that teachers exhibited strong ambivalence to implementing scripted programs because they found it difficult to resolve the tension between the positive effects on student learning they witnessed and their own sense of loss with respect to instructional autonomy. Other studies have theorized that the degree of control over instructional practice provided to teachers is positively related to levels of trust in schools, suggesting that teachers who are in control of instructional decision-making have more fruitful avenues for developing strong school-wide professional community and trust (Kruse 2001; Louis 2007). It is likely, however, that formal control over matters of instruction does limit the degree to which innovation and risk-taking is necessary or possible within the SFA program.

Yet formal controls may diminish trust if they are not appropriately matched to the situation or context in which they are being used (Kirsch 1996). While judging the effectiveness of a teaching performance—even a scripted one—is never easily accomplished, it can be argued that SFA significantly reduces the

ambiguity and uncertainty in the teaching process—a point which often enhances SFA's appeal to new teachers who often feel overwhelmed in their first teaching assignment (Beatty 2011). The SFA program does seem to significantly reduce performance ambiguity by, in particular, tightly controlling instructional delivery and providing teachers with constant feedback in the form of real-time monitoring by instructional facilitators as well as delayed feedback in the form of quarterly assessment results.

However, the role of leadership in providing detailed information, feedback, and instructional guidance in the form of access to experts and supporting monitoring of practice is key to ensuring teachers have the support they need (Elmore 2004; Spillane et al. 2004). The degree to which teachers perceive this guidance to be helpful is likely to increase teachers' trust in the model, school leaders, and other teachers by building teachers' confidence in themselves and the competence of their colleagues (Bryk et al. 1993; Rosenholtz 1991). Knowing that every teacher is being subjected to the same rules and procedures likely also increases perceptions that others are cooperating in the collective effort, thus setting the stage for the further development of trust (Bachmann 2006). This leads to the first hypothesis to be tested regarding the relationship of formal control mechanisms and trust in this chapter:

Hypothesis 1: The degree of instructional guidance that teachers receive and the supportive monitoring of practice that leaders provide will be positively related to change in relational trust among teachers in SFA schools.

Moreover, there are some dimensions of the SFA instructional improvement model, while perhaps more appropriately labeled as formal controls, nevertheless have a strong social component. The common curriculum, shared language around instruction, and shared purpose which are characteristic of the SFA program may serve as a framework for meaningful and productive collaboration around instruction upon which trust can grow and thrive (Elmore et al. 1996; Ford and Youngs 2009; Tschannen-Moran 2001, 2004). For teachers, shared purpose and common language are reinforced through collaborative aspects of the SFA process such as the quarterly assessments, component meetings, and student regrouping process. Teachers routinely work together with other staff to look at achievement data and regroup students in reading levels based on these data (Harris 2003). These "high-risk" interactions provide a forum for the further growth of trust, as teachers are able to make discernments of competence and integrity of their colleagues (Kochanek 2005). Over time, collective work where joint goals and values among members are shared may allow group identification to become more salient. Group identification enhances regular communication and interaction and paves the way for even further trust growth, ensuring that occasional trust violations may go overlooked (Lewicki and Bunker 1996). This leads to the second hypothesis to be tested:

Hypothesis 2: Shared instructional experience among teachers as defined by the common curriculum, shared learning goals, and detailed knowledge of the role obligations of other teachers in the school building, is expected to be positively related to change in relational trust among SFA teachers.

11.1.4 Trust and Other Dimensions of the Instructional Improvement Process

There are also other dimensions of the improvement process that are important to consider in the modeling of change in teacher-teacher relational trust, even though they might not be an explicit part of the SFA theory of action. Engagement in critical dialogue transcends instructional design in terms of its role in teacher learning and trust development (Pounder 1998; Putnam and Borko 1997; Rosenholtz 1991). Moreover, collective responsibility for improvement has been theorized to be an important factor related to trust and collegiality among school personnel (Bryk and Schneider 2002; LoGerfo and Goddard 2008). Because collective responsibility emerges from the development of shared values and beliefs and common goals for teaching and learning (Lee and Smith 1996; LoGerfo and Goddard 2008) it could potentially be an important mediating variable in the relationship between teacher-teacher trust and other aspects of the SFA improvement process such as shared instructional experience (as defined above in Hypothesis 2).

Furthermore, because of the perceived constraints on autonomy inherent in the SFA instructional model, research has noted that hiring staff amenable to the SFA improvement effort is key to ensuring that implementation remains high (Peurach 2011; Slavin et al. 2009). Studies of trust in schools have similarly theorized that efforts to reshape the faculty for school improvement creates conditions whereby trust is more likely to form and grow (Kochanek 2005). This leads to our final two hypotheses:

Hypothesis 3: Because collective responsibility for school improvement emerges from, among other things, the development of shared values and beliefs and common goals for teaching and learning, it is hypothesized to be an important mediator of the relationship of shared instructional experience to teacher-teacher relational trust.

Hypothesis 4: The hiring of key individuals to support the SFA instructional effort likely provides for conditions more amenable to the development of trust. It is therefore expected that teacher and leader hiring will be related to change in trust for teachers in SFA schools.

11.2 Method

Data for the current study was obtained from the *Study of Instructional Improvement* (SII), conducted between 1999 and 2004 by researchers in the University of Michigan School of Education. SII was a large-scale, mixed-method, longitudinal study of the design, implementation, and instructional effectiveness of three of the most widely-adopted CSR models: *Accelerated Schools, America's Choice,* and *Success for All* (Rowan and Miller 2009). The SII study sampling technique involved selecting approximately 120 study schools (30 for each intervention and 30 control) from the over 2500 elementary schools across the U.S.

Concerted attempts were made to both balance the schools in terms of length of affiliation with the three programs (i.e., year of initial implementation), and demographic characteristics, including socioeconomic disadvantage, geographic location, and other school characteristics. By design, however, the final sample over-represented schools in the lowest quartile of SES in order to study instructional improvement in high-poverty schools (Rowan et al. 2009; Rowan and Miller 2009). Because the findings of some studies suggest that trust may be particularly important for schools serving large numbers of disadvantaged youth (see, for example, Goddard 2003; Goddard et al. 2001), this aspect of the SII study design is particularly advantageous for the current study's purposes.

The SII data were gathered via numerous survey and assessment instruments. However, for the purposes of this analysis, three main components of the study were utilized: a teacher questionnaire (TQ) developed for the study and administered once each academic year for 4 years (2000–2001 to 2003–2004); and a school leadership questionnaire (SLQ) administered once each academic year of the study to all school leaders (e.g., principals, assistant principals, instructional coaches and program coordinators); and a school characteristics inventory (SCI), which was completed primarily by the principal of each school each academic year and contained various information about staffing, students, funding, and school-wide programs. Response rates for these surveys were generally high and consistent over the 4 years of the study (for further information on response rates, see Rowan and Miller 2009).

Both the TQ and SLQ contain a wide-variety of information regarding the perceptions of teachers and leaders with respect to the instructional improvement process of their school. These surveys include questions about instructional approaches and leadership, perceptions of school climate and relationships among colleagues, and teacher and leader preparation and professional development. Many of the latent measures constructed and used in this study were selected for use based on prior research on trust and its relationship with instructional improvement as well as their establishment as valid and reliable constructs in prior SII research (see Rowan and Miller 2007). A few items which were used are new measures developed as a result of this study; they are indicated as such in the substantive discussion in Sect. 11.2.1.2. A full list of the measures, the items that comprise them, as well as measure reliabilities can be found in Appendix A.

All time-varying latent measures were developed by applying a Rasch rating-scale model (Wright and Masters 1982) to clusters of items on the TQ and SLQ surveys using the statistical program Winsteps 3.69. This program was used to estimate scale scores for each construct for individual teachers and school leaders separately for each year of their participation. These scores are measured in logits, or log-odds ratios, with higher numbers indicating more positive reports on a particular measure. These scores were then reassembled into the person-period (i.e., "stacked") dataset used for the primary longitudinal data analysis, which employed 3-level HLM growth modeling techniques.

In careful consultation with the statistical output of the Winsteps program, and in concert with prior work conducted on Rasch measurement construction in the SII

data, measures were constructed (or re-constructed as the case may be), regardless of whether or not they were used in prior SII research. Item *infit* is generally relied upon more to determine proper fit of items, but acceptable values for infit vary from source to source. A generally agreed upon standard for maximum value of infit (and outfit) is a mean-squared value of 1.2 (Bond and Fox 2007). This value was the comparison criterion used for determining whether an item was kept in the measurement model or discarded. Because teachers and leaders were surveyed at one or more time points, care has to be taken to ensure that these scales remain stable over time. This was achieved by anchoring items in subsequent years on the item parameters (i.e., item difficulties) estimated from teacher and leaders' first year responses.

11.2.1 Summary of Study Measures and Other Independent Variables Used

As was indicated previously, details on all constructed measures including items comprising the measures, their locations in the survey instruments, scaling, and Rasch measure person separation reliabilities across each year of the study can be found in the Appendix. Descriptive statistics on all variables used in the study analyses can be found in Table 11.1 below. Because we had multiple years of data for all of the constructed measures, they were treated as time-varying covariates in the HLM growth models (modeling strategy is discussed in detail later in this section), and were therefore entered at the repeated measures level or Level 1(with the exception of teacher-teacher relational trust which was the outcome variable). For this analysis, Level 2 was the teacher level and Level 3 was the school level.

11.2.1.1 Outcome Variable

Teacher-teacher relational trust. (sample mean = 3.26, standard dev. = 3.90, skewness = −0.164, kurtosis = −0.337). This scale was developed from four items on the TQ which correspond directly to items from Bryk and Schneider's (2002) original teacher-teacher relational trust instrument. It measures a teacher's self-reported perception of the degree to which teachers respect, care, and trust one another in the school.

11.2.1.2 Time-Varying Covariates (Level 1)

Critical discourse among teachers. This measure was developed in prior research by Rowan and Miller (2007) and replicated for this study to measure teachers' reports of the extent to which the teaching faculty engage in critical dialogue about school matters including instruction.

Table 11.1 Descriptive statistics for the study variables

	Mean	Standard deviation	Minimum	Maximum
Level 1 variables (n = 2181)				
Teacher-teacher relational trust	3.26	3.90	−8.56	10.23
Critical discourse	1.42	3.45	−8.20	8.72
Innovation and risk-taking	1.90	3.38	−7.87	8.64
Shared instructional experience	0.44	2.35	−7.18	7.47
Collective responsibility	3.06	3.81	−10.60	10.56
Instructional guidance	2.00	3.23	−8.14	8.92
Quality teacher professional development	1.40	2.58	−7.23	8.65
Program implementation depth	1.21	1.83	−5.85	6.91
Supportive instructional monitoring	1.01	1.19	−1.95	3.95
Teacher and leader hiring	1.20	2.64	−5.70	5.76
Level 2 variables (n = 1170)				
Yrs. of experience	11.54	9.78	0.00	40.00
Female	0.86	0.35	0.00	1.00
Black	0.20	0.40	0.00	1.00
Hispanic	0.09	0.28	0.00	1.00
(Race) other	0.09	0.29	0.00	1.00
White	0.59	0.49	0.00	1.00
Level 3 variables (n = 29)				
%Free and reduced lunch (standardized)	0.00	1.00	−2.40	1.10
School size	469.90	141.15	291.00	892.00
Faculty stability (standardized)	0.00	1.00	−2.22	1.17
Prior LA achievement	94.37	13.34	69.90	121.00
Prior math achievement	97.42	10.23	64.11	118.58

Climate of innovation and risk taking. This measure was previously developed by Rowan and Miller (2007) and was replicated for use in this study. It measures teachers' beliefs about the degree to which they are expected and/or encouraged to improve their teaching by learning new techniques, experimenting, and taking risks in their classroom instruction.

Shared instructional experience among teachers. A new latent variable developed for use in this study, this measure is designed to capture teachers' perceptions of the degree of curricular coherence and alignment supporting instruction, shared learning goals, and the extent to which this knowledge is distributed across the school's teaching faculty.

Instructional guidance. This is a newly developed latent variable, but is based on a similar measure used by Rowan and Miller (2007), with a few additional items added.[2] It measures the degree to which teachers perceive there to be strong guidance and support for implementing the instructional program at the classroom level, including availability of exemplars of teaching and student work, and guidance from external CSR support staff.

[2] For theoretical reasons, the original scale was modified, as there were several other items which the author felt more accurately captured instructional guidance as envisioned for this study.

Supportive instructional monitoring. This is a new measure developed for this study which captures school leaders' perceptions (including SFA facilitators) of their efforts as a supportive instructional leader. Specifically it measures the frequency with which leaders observe and monitor their teachers' instructional practice to ensure it reflects the overall instructional goals of the program, and the amount of praise and recognition teachers' receive for the instructional efforts.

Teacher and leader hiring for school improvement. This newly developed latent variable measures the emphasis school leaders placed in the past year on the hiring of new teachers and administrative staff with expertise and interest to support the instructional improvement effort.

Quality teacher professional development opportunities. This is a newly developed latent variable which measures teachers' perceptions of the utility and/or impact of their professional development opportunities (both informal and formal) over the past year on their efforts to improve their classroom instruction.

Collective responsibility for improving teaching and learning. A new latent variable developed for use in this study, this measure captures teachers' perceptions of the degree of collective support for each other as well as collective ownership over the improvement of teaching and learning which exists among the school faculty.

Depth of program implementation. Depth of SFA implementation, in the sense that it is used here, relates to teachers' degree of "buy-in" to the adopted instructional program and their perceptions of the degree of "fit" of the program within the existing policy environment. Prior research has linked these perceptions of school staff to the depth to which a program is implemented (Porter et al. 1988; Porter 1994).

11.2.1.3 Other Independent Variables

Other variables used at the teacher level (Level 2) in the model of growth in teacher-teacher relational trust in the SII sample of SFA schools are commonly used control variables such as gender, race, and years of teaching experience. Additionally, a 'missing' variable was used at level 2 for years of experience, gender, and the race dummy variables in order to retain cases at Levels 1 and 2. At level 3, several variables were used which were selected based on their relationship to trust in prior studies. School size was a continuous variable measured as the total enrollment of the school. Percent free and reduced lunch—which serves as a proxy for school SES or percent poverty of a school—was measured as the standardized proportion of those students who were eligible for free or reduced lunch to the total enrollment of the school. Two separate measures of student achievement, prior to the CSR treatment (in language arts and math) were used. These were represented as the school-level averages of entering Kindergarteners on the Woodcock-Johnson language arts and math standardized tests. Finally, a measure of the degree of faculty stability was used. This was a standardized measure of the number of teachers within the school who had been teaching there at least 5 years as a proportion of total teaching faculty.

11.2.2 Analytical Techniques and Modeling Approach

Because the SII data structure used in this analysis is that of responses nested within teachers who are nested within schools, this research study employs hierarchical linear growth modeling techniques. HLM methods were developed in order to address issues inherent to nested data such as dependence among observations and model misspecification due to data aggregation/disaggregation issues (Bickel 2007; Raudenbush and Bryk 2002). Hierarchical models are superior to OLS techniques in dealing with nested data because they allow us to partition the variance in the outcome measure into its proper subcomponents represented by each level of the structure. This is important because the observations of related clusters of people (such as teachers nested within schools) are likely to be more similar to one another than those of, for example, teachers across schools. When OLS is used, this dependence results in a smaller variance in the response variable, which leads to smaller-than-expected standard errors of the parameter estimates. Underestimated standard errors increase the likelihood of Type I errors (Heck and Thomas 2009).

The general growth modeling process proceeded according to well-established procedures outlined in both Singer and Willett (2003) and Hox (2010). This process as well as the form of the general models constructed in this analysis are discussed in the following few paragraphs. General consensus among the "Hox Method" and Singer and Willett approaches is to begin the growth modeling process by starting with the specification of the null model, in this case, what is referred to at the *unconditional means* model, or the *intercept-only* model. As seen in Eq. 11.1, this model is characteristic in that it contains no predictors at any level, just the grand mean of the sample γ_{000} and an error term from each level.

$$Y_{ijk} = \gamma_{000} + r_{0jk} + u_{00k} + e_{ijk} \tag{11.1}$$

This model allows us to partition the variance in the outcome across the three levels, and therefore calculate the *intra-class correlation coefficients*, ρ, which are the proportions of the total variance in the outcome that exists within person, between persons, and between schools. Running this model also allows us to establish a baseline model fitting statistic (deviance or AIC, BIC statistics) with which we will assess the fit of all subsequent models.

Next, the *unconditional growth model* is fit, which introduces the first predictor into our model—in this case the variable TIME, a_{tij}, which is measured in this study in years, and is centered at Year 3 (Eq. 11.2).[3] Unlike the means model

[3] The choice of which year to "center" the TIME variable has important consequences for interpretation, as the grand mean will reflect the "initial status" of the outcome at that year. Thus centering at Year 1 would seem logical to understand where the SII schools were on trust when the study began. However, while schools within each CSR model had begun implementation by the beginning of the SII study, some had initiated implementation up to 2 years before the SII study began. This fact makes interpretations of initial status less useful in this analysis. Therefore, centering on Year 3 seemed most logical in order to understand trust growth trajectories, while ensuring that all schools would be well into implementation.

where individual slopes are constrained to be flat, the introduction of the TIME variable (allows us to examine individuals' growth trajectories with respect to the outcome.

$$Y_{tij} = \gamma_{000} + \gamma_{100}\, a_{tij} + \left(r_{0ij} + u_{00j} + e_{tij}\right) \tag{11.2}$$

The remainder of the model fitting process consists of adding substantive predictors, first at Level 1 (time-varying covariates), and then Levels 2 and 3 respectively. For this study, the general modeling strategy with regard to choosing substantive predictors is most aptly characterized as thorough but parsimonious.

The final model which was fit for the SII sample of SFA schools is represented here in Eqs. 11.3–11.9. Equation 11.3 displays the final Level 1 model, where Y_{tij} represents the teacher-teacher relational trust score for teacher *i* in school *j* at time *t*. The individual

$$Y_{tij} = \pi_{0ij} + \pi_{1ij}\, a_{tij} + \sum_{q=2}^{Q} \pi_{qij}\, \mathrm{X}_{qij} + e_{tij} \tag{11.3}$$

growth parameter π_{0ij} represents the intercept of the true change trajectory for teacher *i* in school *j* in year 3 of the study. The individual growth parameter π_{1ij} represents the linear yearly rate of growth in trust for teacher *i* in school *j*, and the error term e_{tij} is assumed to be normally distributed with a mean of 0 and a constant variance σ^2 across schools. The $\pi_{qij} X_{qij}$ segment of the equation refers to the full set of time-varying covariates that will be used at Level 1, represented here in sum notation where *Q* equals the total number of covariates entered. These time-varying covariates remain fixed effects at Levels 2 and 3, as seen in Eq. 11.6 and 11.9.

Level Two of the model is represented by Eq. 11.4 to 11.6 below. In

$$\pi_{0ij} = \beta_{00j} + \sum_{q=1}^{Q} \beta_{0qj}\, \mathrm{X}_{qj} + r_{0ij} \tag{11.4}$$

$$\pi_{1ij} = \beta_{10j} + r_{1ij} \tag{11.5}$$

$$\pi_{qij} = \beta_{q0j} \quad \text{for} \quad q = 2, \ldots, Q \tag{11.6}$$

Eqs. 11.4–11.6, β_{00j} is a coefficient representing teachers' average relational trust score in school *j* in Year 3 of the study. In this equation, the term X_{qj} signals that *Q* number of teacher-level variables have been included to model variation in average initial status. The coefficients of those predictors β_{0qj} measure the direction and strength of association of these variables. Equation 11.5 models the slope parameter π_{1ij} from Level 1, and includes β_{10j}, which represents the average rate of linear growth for teachers in school *j,* and a random-effect, r_{1ij}, which allows us to examine variation in the rate of linear growth among teachers within each school.

The Level 3 models are represented by Eqs. 11.7 through 11.9. Equation 11.7 displays the model of the intercept at Level 2, which is represented as the sum of γ_{000}, which

$$\beta_{00j} = \gamma_{000} + \sum_{s=1}^{S} \gamma_{0qs} W_{sj} + u_{00j} \tag{11.7}$$

$$\beta_{10j} = \gamma_{100} + \sum_{S=1}^{S} \gamma_{1qs} W_{sj} + u_{10j} \tag{11.8}$$

$$\beta_{q0j} = \gamma_{q00} \quad \text{for} \quad q = 2, \ldots, Q. \tag{11.9}$$

represents the grand mean of the teacher-teacher relational trust measure in Year 3, the error term for the intercept u_{00j}, and the sum of the S number of school level predictors in the model. In Eq. 11.8, γ_{100} represents the grand mean for the linear rate of change in relational trust in the sample, along with a random effect u_{10j} which indicates that schools were allowed to vary around the grand mean in their average growth rate of teacher-teacher relational trust over time.

11.2.2.1 Other Modeling Considerations

Growth modeling was carried out using the statistical package HLM 6.02, using the Full Maximum-Likelihood Estimation (FML) method. Construction of data files and supplementary analyses such as bivariate correlations and descriptive statistics were carried out with SPSS 19. Model fit was assessed using the Akaike Information Criterion (AIC) statistic. The decision to utilize this statistic instead of the more common deviance statistic was in part because of the nature of the modeling process undertaken. Both AIC and deviance are based upon the log-likelihood statistic, but they have different assumptions. Most importantly for this analysis, chi-squared test comparisons of models using deviance statistics require that the model being compared is *nested* within the previous model (Singer and Willett 2003). In the case of the analyses conducted here, this was not always the case. The distinct advantage of the AIC statistic is that, as long as sample size remains constant, models do not have to be nested—making it a more appealing choice for this study (McCoach and Black 2008). Further, the AIC statistic offers a slightly more rigorous fit comparison—it penalizes for the number of parameters estimated in the model. The HLM program does not provide AIC statistics, so they were calculated manually.[4]

[4] One disadvantage, however, is that there is no formal statistical test available for comparing models using AIC. In these instances, model fit was assessed simply by considering models with larger AIC statistics to have the greater fit. The calculation for AIC is $d + 2q$, where d is the deviance statistic and q is the number of parameters estimated.

The centering of explanatory variables used in a multilevel analysis—whether it be in relationship to the grand mean, group mean, or no centering at all—has important consequences. Centering a predictor around its grand mean—the most common method of centering—can serve to enhance the interpretation of data, without changing the "fit" of the model or affecting the interpretation of the slope or residual estimates (Kreft and DeLeeuw 1998). Grand-mean centering can facilitate interpretation of estimates when it does not make sense to interpret an intercept for a value of 0 on a variable for which 0 is not a plausible value (Hox 2010). Perhaps most importantly, however, grand-mean centering can also significantly reduce collinearity among predictors, particularly when within-level interaction effects are examined, adding statistical stability without changing the underlying model (Tabachnick and Fidell 2007).[5] Table 11.2 displays the zero-order correlations between the time-varying covariates which were used.

In this study, all variables at each level were centered at Level 1 with respect to their grand-mean, with the exception of the TIME variable, which remained uncentered. While it is most common to grand-mean center only variables at Level 1, it can also be advantageous to grand-mean center higher-level variables (in this case race, gender, etc.), as this process can adjust for average differences between schools on these factors (Raudenbush and Bryk 2002). Therefore Level 2 and Level 3 predictors were also centered with respect to their grand-mean.

Finally, and perhaps most importantly, is the choice of the functional form of the HLM growth model. A procedure for examining the individual growth trajectories of randomly-selected individuals in each intervention was implemented according to detailed instructions contained in Singer and Willett (2003). They specify randomly selecting 10 individuals and plotting their change in the outcome (in this case relational trust) over time, then running within-person OLS analyses of these individuals gathering their intercept and slope values, residuals, and fit statistics in a file. Using this file, they specify superimposing a "fitted line" on their individual change plots, and examining this as well as residual and fit statistics to determine whether or not a linear assumption is tenable. After conducting this analysis, there was no evidence to suggest that individuals exhibited non-linear change in teacher-teacher relational trust over time. This assumption was again tested in the initial phases of growth modeling by comparing the fit statistics of null models with more complex polynomial forms to those of the linear growth model.

[5] Examination of the correlation Table (Table 11.2) demonstrates that some of the predictors used in this analysis have moderate correlations with one another. An OLS regression was performed with the raw, uncentered data in order to take advantage of the collinearity diagnostics available in SPSS. After entering all Level 1 predictors, VIF statistics indicated no value for a single predictor over 1.6, and all condition indexes were well below 8. This, coupled with grand-mean centering, provides some assurance that collinearity will likely not become a significant issue in the analysis, particularly because not all predictors are likely to be used in a single model.

Table 11.2 Pearson product moment correlations between Level 1 predictors

Measure	1	2	3	4	5	6	7	8	9
1. Teacher relational trust	–								
2. Critical discourse	0.56**	–							
3. Innovation and risk taking	0.44**	0.51**	–						
4. Shared inst. experience	0.26**	0.33**	0.25**	–					
5. Collective responsibility	0.57**	0.52**	0.43**	0.37**	–				
6. Instructional Guidance	0.28**	0.35**	0.29**	0.42**	0.36**	–			
7. Quality Teacher PD	0.25**	0.28**	0.30**	0.29**	0.29**	0.41**	–		
8. Program implementation	0.29**	0.31**	0.33**	0.36**	0.34**	0.53**	0.33**	–	
9. Supportive Inst. Monitoring	0.01	−0.01	−0.09**	0.05**	−0.01	0.01	−0.01	−0.03**	–
10. Teacher and leader hiring	0.04**	0.03**	0.01	0.06**	0.03**	0.06**	0.02	0.01	0.30**

***$p<0.001$; **$p<0.01$; *$p<0.05$

11.3 Findings

As a result of Rasch measure development and HLM file construction, the final sample for the SFA teacher-teacher relational trust growth analysis was 2181 responses within 1170 teachers in 29 SFA schools. Using the baseline means model variance statistics, calculation of the *intra-class correlation coefficient* (ICC) for the SFA sample found that 43.7% of the total variance in teacher-teacher relational trust was found at Level 1, 42.2% was found at Level 2, and 14.1% was found at Level 3, all statistically significant ($p < 0.001$). The results of the modeling of growth in teacher-teacher relational trust in this sample of SFA schools over the SII study period is displayed in Table 11.3.

As indicated in Table 11.3, Models 1 and 2 represent the *unconditional means* and *unconditional linear growth* models fitted for the SFA data with respect to teacher-teacher relational trust. Model 3 represents the relationships of the focal time-varying covariates to teacher-teacher trust, Model 4 introduces two important time-varying controls, level of program implementation and collective responsibility, and Model 5 represents the final model which includes Level 2 and Level 3 predictors.

Recall that the first hypothesis predicted a positive relationship between teacher-teacher relational trust and instructional guidance as well as supportive instructional monitoring over time. In this case, however, the results of the modeling process in Table 11.3 indicate that both supportive instructional monitoring and instructional guidance were not found to co-vary with teacher-teacher trust (coef = 0.124, $SE = 0.088$, $p = 0.162$). The second hypothesis predicted a positive relationship between shared instructional experience in SFA schools and change in teacher-teacher relational trust. As can be seen in the final model, shared instructional experience among teachers was found to be significantly associated with teacher-teacher trust in SFA schools (coef = 0.086, $SE = 0.028$, $p < 0.01$), even after controlling for change in collective responsibility and depth of policy implementation. This finding supports the third hypothesis, which predicted that collective responsibility would be a mediating variable in the relationship of shared instructional experience among teachers and teacher-teacher trust. The fourth hypothesis concerned the relationship of teacher and leader hiring on change in teacher-teacher trust. Examining the final model, we see that the effects of teacher and leader hiring on teacher-teacher relational trust remained even after controlling for other important teacher-level and school-level characteristics.

In the final model, model 5, all Level 2 and Level 3 controls were entered. We see in Model 5 that, even after controlling for teacher and school level characteristics, all significant effects in Model 4 remain in the final model. At the teacher level, a teachers years of experience was found to be significantly related to trust, though its effect appears proportionately small (coef = 0.021, $SE = 0.003$, $p < 0.01$). With White teachers as the comparison group, Hispanic and African American teachers with average levels of the Level 1 time-varying covariates were also found to have average initial statuses on trust at Year 3 significantly lower than those of their White counterparts, after adjusting differences among schools in faculty

Table 11.3 3-Level HLM growth model of relational trust among teachers in SFA schools

	Model 1 (means)		*Model 2* (growth)		*Model 3*		*Model 4*		*Model 5*	
	coef	*SE*[a]	*coef*	*SE*	*coef*	*SE*	*coef*	*SE*	*coef*	*SE*
Fixed effects										
Level 1 predictors										
Intercept π_{0ij}										
Intercept γ_{000}	3.159	0.291***	3.123	0.296***	3.237	0.224***	3.236	0.175***	3.180	0.161***
Critical discourse γ_{100}					0.387	0.022***	0.295	0.020***	0.306	0.020***
Climate of innovation γ_{200}					0.139	0.037***	0.078	0.036*	0.082	0.034*
Shared Inst. experience γ_{300}					0.154	0.027***	0.067	0.028**	0.086	0.028**
Teacher and leader hiring γ_{400}					0.068	0.028*	0.052	0.023*	0.059	0.023*
Quality teacher PD γ_{800}					0.047	0.028∼	0.017	0.025		
Instructional guidance γ_{900}					0.065	0.028*	0.032	0.028		
Supportive inst. monitoring γ_{1000}					0.124	0.088				
Collective responsibility γ_{500}							0.298	0.020***	0.297	0.021***
Policy implementation depth γ_{600}							0.080	0.049∼	0.095	0.048*
Level 2 predictors										
Years of experience γ_{010}									0.021	0.003**
Female γ_{020}									−0.132	0.262
Hispanic γ_{030}									−0.656	0.254**
Black γ_{040}									−0.984	0.244***
Other γ_{050}									−0.312	0.341
Yrs. experience missing γ_{060}									−0.023	0.590
Gender missing γ_{070}									1.568	1.22
Race missing γ_{080}									−1.50	0.529**

Table 11.3 (continued)

Level 3 predictors									
Percent free & reduced lunch γ_{001}								0.141	0.223
School size γ_{002}								−0.001	0.001
Faculty stability γ_{003}								0.201	0.195
Prior LA achievement γ_{004}								−0.005	0.013
Prior math achievement γ_{005}								0.034	0.021
Linear slope (Time) π_{1j}									
Intercept γ_{700}		−0.016	0.122	0.111	0.107	0.047	0.089	0.003	0.091
Faculty stability γ_{701}								0.174	0.005**
Random effects									
Level 1 within person	6.69***	5.87***		4.79***		4.65***		4.67***	
Level 2 initial status	6.45***	6.65***		4.11***		3.29***		3.13***	
Level 2 rate of change		0.385***		0.313***		0.309***		0.288**	
Level 3 initial status	2.16***	2.17***		1.17***		0.690***		0.486***	
Level 3 rate of change		0.253***		0.194***		0.108***		0.092***	
Pseudo R-squared statistics									
Level 1 within-teacher				0.173		0.207		0.204	
Level 2 initial status				0.382		0.505		0.529	
Level 3 initial Status				0.461		0.682		0.776	
Level 3 rate of change				0.233		0.573		0.636	
Deviance	1535.01	11499.12		10851.58		10657.42		10614.21	
AIC	1543.01	11517.12		10885.58		10691.42		10672.21	
Parameters estimated	4	9		17		17		29	

***$p<0.001$; **$p<0.01$; *$p<0.05$; ~$p<0.10$

[a] Robust standard errors are reported in this Table, as calculated by the HLM program

composition (through grand-mean centering). At Level 3, there were no significant predictors of differences in initial status in teacher-teacher trust.

With respect to initial status on teacher-teacher relational trust in the SFA sample, we see that the average teacher-teacher relational trust for a white male with average levels of the time-varying covariates, is 3.180 logits. In examining the slope coefficient associated with teacher-teacher relational trust growth over time, we see that the slope of the population average change trajectory was non-significant, from the initial unconditional growth model to the final model. In this case, we retain the null hypothesis for the rate of change in teacher-teacher relational trust over time, concluding that this estimated value is statistically no different from zero. It seems clear that, on average, there is no appreciable change in teacher-teacher relational trust over time within this sample of SFA schools. AIC fit statistics demonstrate that the linear change model is an improvement over the means model.

Turning to the random effects on the trust change slope parameters at Levels 2 and 3, a significant amount of variation among teachers and schools in trust growth trajectories over time is notable. Attempts to model this variation with both teacher and school level characteristics led to an interesting discovery. As can be seen in Model 5, school level variance in trust growth trajectories was partially explained by faculty stability (coef = 0.174, $SE = 0.005$, $p < 0.01$). Thus, after controlling for all other covariates and teacher and school-level effects, for every 1 standard deviation increase in faculty stability, the population average change trajectory in teacher-teacher relational trust is predicted to increase by 0.174 logits. Figure 11.1 displays the average teacher-teacher trust growth trajectory for each of the 29 SFA schools after adjusting for faculty stability and all other covariates present in Model 5. As can be seen, there is considerable difference in the school-level average trust trajectories in SFA schools, as compared to the overall average trajectory for SFA schools (seen as the shaded trendline), which is virtually flat.

11.4 Discussion

Central to this study was the examination of the role of formal control mechanisms in instruction on change in teacher-teacher relational trust in SFA schools. Instructional guidance and monitoring were argued to be examples of formal control mechanisms which are central to the design of the SFA instructional model, but these were not found to be associated with teacher-teacher trust, even after controlling for other important instructional improvement characteristics. In fact, many of the dimensions of school improvement activity most related to change in teacher-teacher relational trust were those aspects whose relationship to trust has been established in prior research such as critical discourse among faculty and collective responsibility (Bryk and Schneider 2002; Johnson 1990; Little 1982; Louis et al. 1995).

However, shared instructional experience among teachers, was found to be an important factor associated with change in teacher-teacher trust over time. This

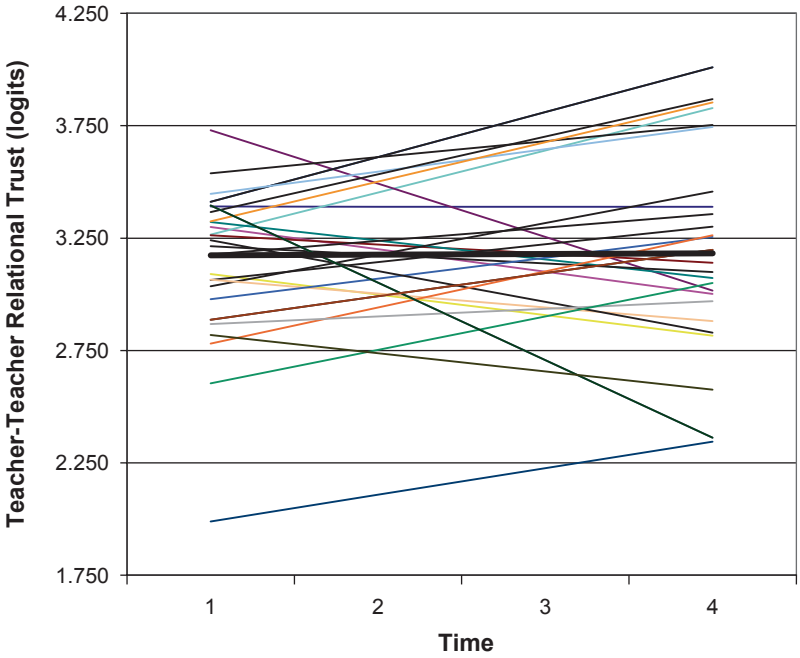

Fig. 11.1 SFA School-level average trust trajectories controlling for faculty stability and other covariates

suggests that structural aspects of the SFA program such as the common core curriculum, common language and shared learning goals may provide a framework upon which teachers can be drawn together to work on the business of instruction. Moreover, having detailed knowledge of what other teachers are doing and others' role obligations may create conditions by which teachers can begin to trust one another to do their work. This may be manifested in an SFA school, for example, in the easing of a fourth-grade teacher's concerns over whether or not students in lower grades are being well-prepared in literacy for success in the fourth grade. It is likely that establishing these structures within a school serve to significantly reduce vulnerabilities among teachers and make the business of instruction a truly collective effort within the school. Taken together, these findings seem to support prior claims that social or informal control mechanisms might be more effective in trust-building than formal control mechanisms (Forsyth et al. 2011). Formal control mechanisms may be useful at the outset of implementation, but less so as the intervention progresses.

School leaders' emphasis on teacher and leader hiring was found to be positively related to change in trust among teachers in SFA schools. This finding does not seem particularly noteworthy when you consider the uniqueness of the SFA program, and the typically heightened responses and strong opinions many have toward the instructional program itself. Because of the scripted nature of the program, its constraints on teacher autonomy, and pervasive monitoring of practice which

have been documented in other studies (see Datnow and Castellano 2000, 2001)[6], there is certainly a higher likelihood of dissatisfaction and other general discord among some faculty who disagree fundamentally with the program's approach. Moreover, with the adoption of any new instructional program, there are bound to be a few teachers who are reluctant to change, and this can result in discord as well. As some prior studies of trust have shown, it only takes one or perhaps a few discontented teachers to undermine faculty trust as a whole (Bryk and Schneider 2002; Kochanek 2005). In these instances, the hiring of new personnel provides an opportunity for school leaders to shape their faculty in such a way as to ensure that a greater percentage of the overall faculty are willing and committed to the instructional program.

The key finding in the analysis of SFA schools with respect to growth in teacher-teacher relational trust over time is that, on average, there is *no* appreciable growth in trust among teachers over time in this sample of SFA schools, though the average level of teacher-teacher relational trust after several years of implementation remains relatively high. However, while there was no *average* growth in teacher trust over time in the SFA model, there was a significant amount of variation in teacher-teacher relational trust growth trajectories by school. Further, this study also found some evidence to suggest that SFA schools might be able to increase their potential for building trust among teachers over time if, all else being equal, teacher turnover is well-managed by school leadership. Other studies have suggested that controlling faculty turnover may be an important consideration for schools looking to build and/or maintain trust within their school (Bryk and Schneider 2002).

Further examination of findings from this study and others utilizing the SII data suggests that we further examine the role of teacher-teacher relational trust throughout the instructional improvement process, however. As mentioned earlier, in another study by Ford (2010), the *Accelerated Schools* program produced significant average gains in teacher-teacher relational trust over the course of the SII study. However, in other SII studies utilizing the same data, researchers demonstrated that literacy instruction and achievement patterns in *Accelerated Schools* were indistinguishable from control schools (Correnti and Rowan 2007; Rowan et al. 2009). These authors concluded that ASP's instructional design was not well-suited to producing large-scale changes in instruction and student achievement. Conversely, in the same SII studies mentioned above, researchers also found that SFA schools produced highly distinctive patterns of literacy instruction as compared to control schools, and also high rates of academic achievement as compared to both control schools and all other schools (Correnti and Rowan 2007; Rowan et al. 2009). Yet, this study finds that, on average, there was no appreciable gain in teacher-teacher trust over time. These findings seem counterintuitive when we consider the multitude of studies which have established a relationship between trust and

[6] These findings and conclusions are not necessarily the opinion of the author and remain an area of debate among researchers. They are nevertheless common criticisms often leveled against the SFA program. We must also acknowledge again that research has shown that considerable variation may exist in the extent to which SFA schools employ the procedural system of controls. Therefore, these results must be interpreted with caution.

increases in student achievement/learning (Bryk and Schneider 2002; Forsyth 2008; Forsyth et al. 2006; Goddard 2003; Goddard et al. 2001; Yasumoto et al. 2001).

11.5 Conclusions

Taken together, what might we conclude about the role of teacher-teacher relational trust throughout these, and other, school improvement processes? First, these findings suggest that, for examinations of trust among teachers, it might be beneficial to consider looking at outcomes which are more proximal to the work of teachers, such as improvement in instruction, instead of measures of student achievement. Arguably, trust among teachers only *indirectly* impacts student learning, and it most likely does so through what teachers learn and do together related to the "core" of schooling as well as what they develop together in terms of collective identity and a sense of efficacy. It is recognized that it is not easy to collect reliable and valid data on classroom instruction (Ball and Rowan 2004), and this is part of the reason that many studies have relied on measures of student achievement to measure productivity. Despite this obstacle, future research examining the role of teacher trust should endeavor to more fully utilize measures of instruction and/or instructional improvement, whatever form they may take.

Further, the findings presented here regarding the role of formal control mechanisms in change in trust in school settings should be viewed as preliminary in nature. There is certainly more to understand with respect to the relationship these structures have on the ability of school professionals to form and maintain trusting relationships. Research which poses and tests a causal theoretical framework of the formation of trust from formal (or informal) school processes would be highly beneficial. Trust, like many other social processes, has inherent issues of causal directionality—that is, trust likely has a reciprocal relationship to school productivity measures (such as test scores) (Forsyth 2008). Research which further investigates the topic of this chapter and others with respect to trust should attempt to employ research designs in which causal inferences between study variables can be made.

A further limitation of this study which is recognized was the lack of a measure of principal-teacher relational trust to include as a statistical control. Some of trust studies have found a significant relationship between teacher-principal trust and teacher-teacher trust, and having had access to such a measure in the current study may have potentially led to more accurate model specification. Future studies of this type should endeavor to include more measures of trust among different role-relations to more fully ascertain their relationships to one another, and more specifically their relationship to growth in teacher trust over time.

Finally, this study breaks little new ground on what we know about trust growth at less-studied levels of schooling and between less-studied role-relations. Studies of trust have predominantly focused on the elementary level and, of the role-relations, trust among teachers has been the most extensively investigated. Future studies should branch out and examine how trust develops in secondary schools and of the factors which give rise to change in trust in other role relations such as principals and teachers, parents and teachers, and teachers and students.

Appendix: Teacher Questionnaire (TQ) and School Leader Questionnaire (SLQ) Items Used in Rasch Measures

Year 1	Year 2	Year 3	Year 4	Item
TQ: Relational Trust Among Teachers (4-point scale, *strongly disagree* to *strongly agree*)				
0.84	0.83	0.77	0.77	
TQ1_1a	TQ2_1a	TQ3_1a	TQ4_1a	Teachers respect colleagues who are expert in their craft
TQ1_1b	TQ2_1b	TQ3_1b	TQ4_1b	Teachers in this school trust each other
TQ1_1c	TQ2_1c	TQ3_1c	TQ4_1c	Teachers in this school really care about each other
TQ1_1d	TQ2_1d	TQ3_1d	TQ4_1d	Teachers respect other teachers who take the lead in school improvement
TQ: Critical Discourse Among Teachers (4-point scale, *strongly disagree* to *strongly agree*)				
0.78	0.77	0.77	0.76	
TQ1_1e	TQ2_1e	TQ3_1e	TQ4_1e	Many teachers openly express professional views at meetings
TQ1_1f	TQ2_1f	TQ3_1f	TQ4_1f	Teachers are willing to question on another's views
TQ1_1g	TQ2_1g	TQ3_1g	TQ4_1g	Teachers do a good job of talking through views, opinions, and values
TQ: Climate of Innovation and Risk Taking (4-point scale, *strongly disagree* to *strongly agree*)				
0.78	0.78	0.79	0.80	
TQ1_1h	TQ2_1h	TQ3_1h	TQ4_1h	Teachers expected to continually learn and seek out new ideas
TQ1_1i	TQ2_1i	TQ3_1i	TQ4_1i	Teachers are encouraged to experiment in their classrooms
TQ1_1j	TQ2_1j	TQ3_1j	TQ4_1j	Teachers are encouraged to take risks to improve their teaching
TQ: Shared Instructional Experience Among Teachers (4-point scale, *strongly disagree* to *strongly agree*)				
0.75	0.74	0.76	0.77	
TQ1_4a	TQ2_4a	TQ3_4a	TQ4_4a	I have detailed knowledge of content covered and instruction of other teachers
TQ1_4b	TQ2_4b	TQ3_4b	TQ4_4b	I have detailed knowledge of what students have learned previously
TQ1_4c	TQ2_4c	TQ3_4c	TQ4_4c	It's easy for other teachers to know what students learned in my class
TQ1_4e	TQ2_4e	TQ3_4e	TQ4_4e	Teachers with similarly students cover same content and use similar methods

Year 1	Year 2	Year 3	Year 4	Item
TQ: Collective Responsibility for Improving Teaching and Learning (5-point scale, *no teachers* to *nearly all teachers*)				
0.86	0.85	0.84	0.84	
TQ1_2a	TQ2_2a	TQ3_2a	TQ4_2a	Teachers take responsibility for helping one another do well
TQ1_2b	TQ2_2b	TQ3_2b	TQ4_2b	Teachers help maintain positive student behavior in the entire school
TQ1_2c	TQ2_2c	TQ3_2c	TQ4_2c	Teachers take responsibility for improving the quality of teaching in the school
TQ: Instructional Guidance (4-point scale, *strongly disagree* to *strongly agree*)				
0.89	0.89	0.89	0.89	
TQ1_47a	TQ2_48a	TQ3_45a	TQ4_48a	There is a detailed plan for improving instruction
TQ1_47b	TQ2_48b	TQ3_45b	TQ4_48b	The steps for improving instruction are carefully staged and sequenced
TQ1_47c	TQ2_48c	TQ3_45c	TQ4_48c	The steps to promote classroom improvement are clearly outlined
TQ1_47d	TQ2_48d	TQ3_45d	TQ4_48d	Instructional goals for students are clearly defined
TQ1_47e	TQ2_48e	TQ3_45e	TQ4_48e	My participation has exposed me to program examples of student work
TQ1_47f	TQ2_48f	TQ3_45f	TQ4_48f	My participation has exposed me to program examples of classroom teaching
TQ1_47g	TQ2_48g	TQ3_45g	TQ4_48g	Staff of CSR program provided ideas/resources to improve classroom practice
TQ: Quality Teacher Professional Development Opportunities (4-point scale, *strongly disagree* to *strongly agree*)				
0.88	0.87	0.87	0.86	
TQ1_56a	TQ2_57a	TQ3_54a	TQ4_57a	Gave me many opportunities to work on aspects of my teaching
TQ1_56b	TQ2_57b	TQ3_54b	TQ4_57b	Provided me with knowledge helpful to me in my classroom
TQ1_56d	TQ2_57d	TQ3_54d	TQ4_57d	Allowed me to focus on a problem for an extended period of time
TQ1_56f	TQ2_57f	TQ3_54f	TQ4_57f	Provided me with useful feedback about my teaching
TQ1_56g	TQ2_57g	TQ3_54g	TQ4_57g	Made me pay closer attention to particular things I was doing in the classroom
TQ1_56h	TQ2_57h	TQ3_54h	TQ4_57h	Led me to seek out additional information from another teacher, leader or source
TQ1_56i	TQ2_57i	TQ3_54i	TQ4_57i	Led me to think about my teaching in a new way
TQ1_56j	TQ2_57j	TQ3_54j	TQ4_57j	Led me to try new things in the classroom

Year 1	Year 2	Year 3	Year 4	Item
TQ: Depth of Program Implementation (4-point scale, *strongly disagree* to *strongly agree*)				
0.80	0.80	0.78	0.79	
TQ1_3a	TQ2_3a	TQ3_3a	TQ4_3a	Policies about how I should teach are often contradictory (reverse coded)
TQ1_3b	TQ2_3b	TQ3_3b	TQ4_3b	I have difficulty choosing what to do in classroom out of all options (reverse)
TQ1_3c	TQ2_3c	TQ3_3c	TQ4_3c	Out of all the information about teaching, unsure about the priorities (reverse)
TQ1_3d	TQ2_3d	TQ3_3d	TQ4_3d	Instructional policies I am supposed to follow seem inconsistent (reverse coded)
TQ1_48a	TQ2_54a	TQ3_51a	TQ4_54a	I am capable of making the changes called for by the program
TQ1_48b	TQ2_54b	TQ3_51b	TQ4_54b	Changes called for by the program help students' achievement
TQ1_48d	TQ2_54d	TQ3_51d	TQ4_54d	I value the changes called for by the program
SLQ: Supportive Instructional Monitoring (5-point scale, *never* to *more than 2 days per week*)				
0.74	0.79	0.81	0.80	
SL1_15b	SL2_18a	SL3_18a	SL4_18b	I monitor classroom instructional practice to see that they reflect improvement efforts
SL1_15c	SL2_18b	SL3_18b	SL4_18c	I observe in classrooms to examine what students are learning
SL1_15d	SL2_18d	SL3_18d	SL4_18d	I evaluate teachers using criteria directly related to school improvement efforts
SL1_15e	SL2_18e	SL3_18e	SL4_18e	I praise, publicly recognize teachers whose instructional practice support improvement
SLQ: Teacher and Leader Hiring for School Improvement (4-point scale, *not at all* to *a great extent*)				
0.74	0.75	0.80	0.80	
SL1_17a	SL2_20a	SL3_20a	SL4_20a	Hiring new administration/support staff with expertise and interest in improvement
SL1_17b	SL2_20b	SL3_20b	SL4_20b	Hiring new teachers whose expertise supports school improvement activities

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Chapter 12
Principal Influence and Faculty Trust: An Analysis of Teacher Perceptions in Middle Schools

Page A. Smith and Adrian A. Flores

12.1 Introduction

In recent years, schools have confronted changes that challenge both students and teachers. As external political and regulatory forces become more involved in public education, greater accountability measures emerge under the guise of "standards." In the US this is due in large part to the No Child Left Behind (NCLB) legislation (Chapman 2007; Spillane et al. 2002).

While some teachers embrace changes prompted by federal, state, and local accountability measures, many do not. Thus, school leaders must often incorporate externally-driven mandates in meaningful ways that both satisfy the teachers and forward academic achievement (Brown 2007; Walker and Vogt 1987). As the press for school change accelerates, both scholars and practitioners point to a number of important social variables that enhance opportunities for smooth organizational transitions. Organizational trust constitutes a critical motivator in persuading constituents to follow new initiatives. To that end, trust remains closely linked with positive school outcomes (Hoy et al. 2006; Smith and Scarbrough 2011). However, creating and sustaining trust can be difficult. School leaders are challenged to increase student success through institutional change, while at the same time, their influence depends on trusting relationships among salient school stakeholders (Lewis 2008; Hoy 2002, 2003; Hoy et al. 2006; Hoy et al. 2002; Smith 2000, 2002; Smith and Birney 2006; Smith et al. 2001; Tschannen-Moran 2001).

To be sure, principals set both the intellectual and organizational tone of schools (Muijs and Harris 2007; Tschannen-Moran 2004), and, it can be argued, are responsible for maintaining trusting relationships (Hoy and Kupersmith 1985; Whitener et al. 1998),

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and negotiating change needed for success. Effective leaders cultivate trust within schools through visioning, modeling, coaching, managing, and mediating (Tschannen-Moran 2004). In other words, the ability of the principal to meet rising institutional demands requires both influence and stakeholder trust. This investigation explores the relationship between principal influence and trust.

12.2 Persuasion and Influence: Pervasive Factors Affecting Conformity

The study of persuasion and influence stems from the identification of factors that cause one person to say, "yes" to another. Cialdini's conceptualization of six principles of influence related to willful compliance is a useful framework (Cialdini 2001a, 2001b, 2003, 2005, 2007; Cialdini and Goldstein 2002, 2004; Guthire 2004). The principles are reciprocity, consistency, social proof, attraction, authority, and scarcity; each will be discussed.

Reciprocity The study of influence is rooted in psychology with early research focusing on simple social interactions between individuals. However, the literature also encompasses complex social phenomena such as role behaviors, conformity to norms, and group leadership (Goranson and Berkowitz 1966; Thibaut and Kelly 1959). Early research on influence identified the principle of reciprocity, or one person's expectation of a return for extending a favor, gift, or action to another. Reciprocity is a powerful principle of influence based on indebtedness and the tendency of individuals to respond favorably to the requests of others once something has been done for them (Berkowitz and Daniels 1964; Berkowitz and Friedman 1967; Brehm and Cole 1966; Goranson and Berkowitz 1966; Pruitt 1968).

Consistency Consistency is another principle associated with influence, specifying that, once people publically commit to a decision, it is not difficult to get them to comply repeatedly (Cialdini 2001b). Hence, when people take a "public stand" or "go on the record" about a specific situation, it is likely they will respond similarly to like matters in the future. As others have noted, based on an initial commitment, future automatic responses consistent with the original decision can be elicited (Deutsch and Gerard 1955; Sherman 1980).

Social Proof Social proof entails a person's tendency to follow what others have done (Cialdini 2001b); as such, it can play a role in influence. A strong body of literature documents people's behavioral dependence on social norms and the substantial effects of these norms on individual behavior under uncertain public conditions (Cialdini 2001b; Kahan 1997; Mandel et al. 2006). In essence, social norms form the basis of behaviors commonly accepted in public situations including the appropriate method of inquiry and daily personal interactions.

Attraction Individuals are attracted to others who are similar to them. The adage that "opposites attract" is not nearly as powerful as the hold and pull of those with

similar values and perspectives. People like others who are similar to them (Byrne 1971). Analyses of sociograms of all kinds demonstrate that generally people select others with similar dispositions (Blau and Scott 2003). Even positive remarks about another's individual traits, attitudes, and performance generate a propensity to comply with the wishes of the person offering the praise (Berscheid and Walster 1978). People go so far as to be attracted to those who dress like they do (Emswiller et al. 1971) as well as those with similar political party preferences (Furnham 1996). The point is clear; people like, are attracted to, and follow others who they believe are similar to them (Cialdini 2001a, 2001b; Bryrne 1971; Kulka and Kessler 1978; Montalvo et al. 2007).

Authority As it pertains to influence, researchers have described "authority" as social pressure promoting the tendency of someone to comply with, or have a profound sense of duty to, the directives of experts (Cialdini 2001b; Hoy and Smith 2007; Redelmeier and Cialdini 2002). The research consistently identifies authority as a potent influence in fields such as medicine, law, business management, and education (Cialdini 2001b, 2003, 2005, 2007; Hoy and Smith 2007; Redelmeier and Cialdini 2002). In general, experts in positions of authority influence people.

Scarcity Cialdini (2001b, p. 231) defines the concept of scarcity as "people assigning more value to opportunities when they are less available." Simply put, "we value what is scarce, not what is plentiful" (Hoy and Smith 2007, p. 161). Thus, those who control access to scarce social and material commodities are in position to influence (Brock 1968; Fromkin 1971).

12.3 Influence: The Transition to Schools

Although research on influence is anchored in psychology and business, its application to schools is emerging. In 2007, for example, Hoy and Smith (2007) expanded Cialdini's (2001b) work to schools, claiming that many of the same principles of persuasion used in business contexts can be useful to school leaders in accomplishing their goals. In fact, while the utilization of influence is important to anyone desiring to advance an agenda, it is especially critical to school principals in guiding positive and purposefully directed school reforms (Hallinger and Heck 1998). In adapting Cialidini's principles of influence for school research, Hoy and Smith (2007) added four to the original six as follows.

1. The principle of attraction states that individuals are attracted to others who are similar to them.
2. The principle of reciprocity states that individuals feel obligated to return a good deed.
3. The principle of colleagueship states that individuals listen to and follow the lead of respected colleagues.
4. The principle of commitment states that individuals are motivated to act based on their public commitments.

5. The principle of expertise states that individuals defer to those who have demonstrated expertise.
6. The principle of scarcity states that individuals desire what is scarce, not what is plentiful.
7. The principle of trust states that individuals follow those whom they trust.
8. The principle of fairness states that individuals desire fair treatment.
9. The principle of self-efficacy states individuals who are confident in their own ability are usually successful.
10. The principle of optimism states that optimism enhances success.

12.4 The Construct of Trust

Trust represents a critical element of human interaction. Indeed, "trust is like air—we all pay little attention to it until it is not there" (Hoy et al. 2006, p. 253). The study of trust has a long history (Fukuyama 1996; Letki 2006; Louis 2003; Sztompka 2006) and the topic continues to be addressed by both scholars and practitioners. Society relies on trust as a catalyst for positive social interactions. Trust, and its opposite (distrust), is universally acknowledged in every human culture (Deutsch 1958; Gulati and Sytch 2008). Trust brings stability to people who live and work together (Tschannen-Moran 2004). Indeed, trust is the "centerpiece to all transactions" (Dasgupta 1988, p. 49).

12.4.1 Trust Defined

Despite its importance, trust is a vague and ambiguous concept, and defining it can be elusive (Hupcey et al. 2001). Widespread exploration of trust prompts scholars and practitioners to disagree over its meaning (Jones 1996; Hosmer 1995). However, commonly acknowledged aspects of the construct are found in the literature (Deutsch 1958; Mayer et al. 1995). Personal vulnerability, benevolence, reliability, competence, honesty, and openness are among the commonly accepted aspects of trust. In this investigation, the definition of Hoy and Tschannen-Moran (1999) will be employed. They define trust as, *"an individual's or group's willingness to be vulnerable to another individual or group, based on the confidence that the latter will act in a benevolent, reliable, competent, honest, and open manner"* (p. 189).

12.4.2 Trust in Schools

The effective schools research surrounding the study of trust continues to expand and the focus on educational institutions has prompted extensive scholarly interest (Hoy 2003; Hoy et al. 2006; Hoy and Tschannen-Moran 2003; Hoy and Smith 2007; Smith et al. 2001; Tschannen-Moran 2004). In short, effective organizations are

trusting organizations and schools are no exceptions to this axiom (Hoy and Smith 2007; Tschannen-Moran 2001, 2004; Tschannen-Moran and Hoy 2000). Building on the work of Hoy and his colleagues (Gage 2003; Hoy 2002, 2003; Hoy et al. 2002; Smith and Birney 2005; Smith and Scarbrough 2011; Smith and Shoho 2007; Tschannen-Moran and Hoy 1998, 2000), we employ a multi-dimensional approach to the study of trust in schools by targeting teacher trust in the principal (leader), colleagues (peers) and clients (students and parents), and how each of these aspects of trust relates to the influence of the principal in middle school environments.

12.5 Research Questions and Hypotheses

In general, we hypothesize that principal influence will predict faculty trust in colleagues, in the principal, and in the students and parents). Accordingly, the study is driven by the following set of hypotheses:

H_1 *Principal influence predicts faculty trust in the principal, controlling for SES and size.*

The persuasive capability of the principal often plays a major part in determining whether or not the teachers embrace unfamiliar initiatives (Hallinger and Heck 1998). To be sure, persuasive principals are highly visible, consistently model open and authentic behaviors, and assure stakeholders they are capable of successfully leading the school (Hoy and Smith 2007). In addition, principals who exert administrative influence to obtain critical campus resources, professional development opportunities, and enhanced funding for their teachers are more likely to gain the trust of subordinates. In brief, the faculty comes to believe and trust in the principal to "do the job" and utilize influence for the good of the school. Therefore, principal influence should emerge as a statistically significant predictor of faculty trust in the principal.

H_2 *Principal influence predicts faculty trust in colleagues, controlling for SES and size.*

School principals affect relationships that nurture the social milieu of their campuses. By modeling desirable social behaviors such as reliability, competence, openness, and benevolence they encourage similar faculty actions. Principals who influence by means of demonstrating trust-building behaviors model social mechanisms that faculty perceive as easily adoptable for their own relationships with colleagues (Spillane 2002). The faculty sees what the principal does and that he or she accomplishes goals through trust-based behaviors (Maxwell 2008). As a result, the teachers are both influenced by the example of the principal and encouraged to convert trusting collegial interactions into faculty norms. In essence, principals who institute social patterns based on trust and successfully exert administrative influence through modeling engender increased patterns of trust at the collegial level. Therefore, principal influence will emerge as a statistically significant predictor of teacher trust in their colleagues.

H_3 Principal influence predicts faculty trust in clients (students and parents), controlling for SES and size.

Schools are pressed to educate an increasingly diverse population of students and educational leaders face a complex array of challenges. To that end, influential principals effectively exercise their authority by tapping previously established good will throughout the school community. Likewise, influential school leaders who are accessible to the community have ample opportunities to "seize the moment" and demonstrate competence, reliability, openness, and benevolence at critical times. Thus, influence provides a way to develop trust among both students and parents. Through demonstrated good intentions, influential principals construct meaningful and reciprocal channels of communication with all school stakeholders; thus becoming proficient at both giving and receiving help from their constituents (Cialdini 2003). In brief, reciprocity ensues and stakeholders benefit from the process. Moreover, school leaders who successfully connect with the community beyond campus boundaries forge likely opportunities for faculty to deepen their connections with students and parents. Therein, teachers are exposed to outreach behaviors by the principal and these influential actions demonstrated throughout the community pose opportunities for faculty members to deepen both their connection and trust with clients. Therefore, it is hypothesized that principal influence will emerge as a statistically significant predictor of faculty trust in clients.

12.6 Method

A description of the sample, method of data collection, variables employed in the study and descriptions of the operational measures are presented below.

12.6.1 Sample

A sample of convenience was used consisting of 29 Texas middle schools. The researchers purposefully selected urban, suburban, and rural schools from the south central region of the state. A total of 1,990 teachers out of 1,923 responded for a response rate of 96.64 %.

Moreover, schools in the sample represented a wide socioeconomic range. The percentage of students receiving free and reduced lunch was employed as a surrogate measure for socioeconomic status; it ranged from 9.4 to 100 %. In addition, schools with 15 or fewer faculty were excluded from the study.

12.6.2 Teachers

The teacher sample in the 29 middle schools consisted of professional staff members who attended principal-initiated faculty meetings. Prior to the administration

of the surveys, clearance and permission to conduct the research was received from respective district officials as well as principals or their designees. All certified professional teachers were invited to respond to the survey. Provisions for teachers who missed the survey session were not exercised, but virtually all teachers canvassed returned usable surveys. The sample represented teachers diverse in years of classroom experience, levels of education, age, gender, and race.

12.6.3 Data Collection Procedures

The dissemination of the surveys was such that approximately half of the faculty completed the Persuasion Index (Hoy and Smith 2007), and the other half responded to the Omnibus T-Scale (Hoy and Tschannen-Moran 2003). Thus, survey forms were alternated in order to ensure methodological independence between the independent and dependent variables. Before distributing the surveys, a trained researcher read a statement describing the research and asked the participants for their frank responses to the items. The researcher stressed that faculty members were not required to respond to any items that made them feel uneasy. Subsequently, the researcher requested that the teachers not include their names on the questionnaires so as to assure anonymity. Finally, the teachers were also advised that the results of the study would be kept confidential. The explanation, distribution, and administration of the instruments took approximately 25 min.

12.6.4 Variables

The independent variable in this study is principal influence and the dependant variables are faculty trust in the principal, faculty trust in colleagues, and faculty trust in clients (students and parents). The decision to explore the relationships between three dimensions of trust and principal influence was based on prior effective schools research (Levine and Lezotte 1990), the emphasis on trust in schools (Goddard et al. 2001; Hoy and Tschannen-Moran 2003; Smith and Scarbrough 2011; Smith et al. 2001; Smith and Birney 2005; Tschannen-Moran 2004; Tschannen-Moran and Hoy 1998), and the growing recognition of leader influence as a catalyst for incurring productive school change (Hoy and Smith 2007).

12.6.5 Operational Measures

The Persuasion Index (PI) was developed to operationalize faculty perceptions of the influence of the school principal (Hoy and Smith 2007). Hoy and Tschannen-Moran (2003) created the Omnibus T-Scale, which gauges faculty perceptions of trust in the principal, colleagues, and clients (parents and students). Brief descriptions of the two measures employed in this study follow.

Table 12.1 The Dimensions, Number of Items and Reliabilities of the Persuasion Index and Omnibus T-Scale

Scale	Number of Items	Reliability
Persuasion Index	10	0.88
Omnibus T-Scale		
Trust in the Principal	8	0.98
Trust in Colleagues	8	0.93
Trust in Clients	10	0.94

12.6.5.1 The Persuasion Index

Building on the theoretical framework of Cialdini (2003), Hoy and Smith (2007) operationalized 10 aspects of principal influence. The Persuasion Index (PI) measures 10 important aspects of principal influence as perceived by teachers. The Persuasion Index allows teachers to describe their perceptions of principal influence along a six-point Likert-type scale ranging from strongly disagree (1) to strongly agree (6). Sample items from the Persuasion Index instrument include: "My principal is 'in the know' in this school system," and, "My principal gets the faculty to embrace school goals." The Persuasion Index is presented in Appendix A.

12.6.5.2 Omnibus T-Scale

The alpha coefficient of reliability of the Persuasion Index (PI) is 0.88 (See Table 12.1) and the construct validity of the Persuasion Index is evidenced in previous research (Hoy and Smith 2007). Principal components factor analysis was used to determine if the factor loadings were consistent with the results from Hoy and Smith's (2007) investigation. Strong factor loadings confirmed the construct validity of the Persuasion Index. The results of the factor analysis reported in Table 12.2 support the use of the Persuasion Index as a measurement of principal influence in middle schools.

The Omnibus T-Scale was developed by Hoy and Tschannen-Moran (2003) to operationalize three salient dimensions of trust in schools. Specifically, teachers responding to the Omnibus T-Scale describe their behaviors along a six-point Likert-type scale ranging from strongly disagree (1) to strongly agree (6). Sample items from the Trust in the Principal subscale include: "The principal in this school is competent in doing his or her job," and "Teachers in this school can rely on the principal." Items from the Trust in Colleagues dimension are: "Teachers in this school do their jobs well," and "Even in difficult situations, teachers in this school can depend on each other." Finally, the Trust in Clients dimension includes items such as: "Students in this school care about each other," and "Teachers think most of the parents do a good job."

Alpha coefficients of reliability of the Omnibus T-Scale are consistently high on the three factors and construct validity has been confirmed through previous studies (Hoy and Tschannen-Moran 2003, Smith et al. 2001). Thus, the Omnibus T-Scale represents a valid and reliable measure of trust suitable for use in middle

Table 12.2 Principal Component Factor Analysis of the Persuasion Index

Item Number	Factor 1 Principal Influence 10 items
54	0.909
47	0.899
20	0.886
14	0.878
7	0.874
67	0.857
34	0.834
27	0.785
40	0.779
61	0.764
Eigenvalue	10.001
Cumulative Variance Explained	79.903

schools. The three dimensions, number of items, and their reliabilities are presented in Table 12.1. The Omnibus T-Scale is presented in Appendix B.

12.6.6 Data Analysis

The focus of this study is on the aggregate—the faculty perceptions of principal influence and three important facets of trust. The unit of analysis is the school, not individual teachers. Therefore, analyses were performed on school means rather than on teacher scores; that is, individual responses were aggregated for both the Persuasion Index (PI) and Omnibus T-Scale at the school level. Descriptive statistics including means, standard deviations, and range were calculated for all variables. In order to test the hypotheses, correlation coefficients were computed for each aspect of faculty trust with principal influence.

12.7 Results

12.7.1 Descriptive Statistics of the Research and Demographic Variables

The analysis of the descriptive statistics of both the research and demographic variables included the calculation of means, standard deviations, and ranges. Accordingly, no irregularities that would preclude further statistical analysis were discovered. However, socioeconomic status emerged as a point of interest. In this study of 29 middle schools, the mean number of students receiving free and reduced lunches was 69.31%. This is higher than the state average of 55.39% (Texas Education Agency 2009). Thus, there were a greater number of students classified as lower

Table 12.3 Descriptive Statistics of Research and Demographic Variables (N = 29)

Variable	Mean	Standard Deviation	Minimum	Maximum
Principal Influence	4.12	0.68	2.23	5.00
Faculty Trust in Clients	3.32	0.52	2.44	4.56
Faculty Trust in Colleagues	4.27	0.55	3.24	5.27
Faculty Trust in Principal	4.11	0.80	2.27	5.22
% free and reduced	69.31	29.80	9.40	100.00
School Size	804.97	384.94	42.00	1786.00

Note: All values rounded to two decimal points

socioeconomic status in this sample than the Texas state average. Overall, the schools in this study were less affluent than the average for the state of Texas by 13.92%.

The size of school in this study was measured by the average number of students and ranged from 42 to 1,786, as reported by the Texas Education Agency (2009). The mean number of students was 805. Moreover, the average number of students attending middle schools in this study was congruent with the average population of Texas middle schools as reported by the Texas Education Agency. The descriptive statistics of the research and demographic variables are presented in Table 12.3.

12.7.2 Multiple Regression Analyses

Multiple linear regression analysis was used to test the hypotheses; the three forms of trust were regressed separately on principal influence, as well as socioeconomic status (SES) and school size. In each regression, variables were entered simultaneously.

12.7.3 Hypotheses 1

First, Hypotheses 1 predicting that principal influence would emerge as a statistically significant predictor of faculty trust in the principal, controlling for SES and school size was tested. Principal influence made a statistically significant independent contribution to faculty trust in the principal (ß = 0.370, $p < 0.05$). In addition, principal influence, combined with the demographic variables of SES (ß = −0.405, $p < 0.05$) and school size (ß = 0.107, $p > 0.05$), formed a linear combination that explained a significant portion of the variance in principal trust (R square = 0.70, $p < 0.05$, with an adjusted R square of 0.43). That is, principal influence, SES, and school size explained 43% of the variance in faculty trust in the principal. The results of the first regression analysis are presented in Table 12.4.

Table 12.4 Multiple Regression of Principal Influence, SES, and Size on Faculty Trust in Principal

Variables	r	ß
Socioeconomic Status (SES)	−0.611**	−0.405*
School Size	0.393*	0.107
Principal Influence	0.549**	0.370*
Total		$R^2 = 0.70$*
		Adjusted $R^2 = 0.432$*

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

Table 12.5 Multiple Regression of Principal Influence, SES, and Size on Faculty Trust in Colleagues

Variables	b	ß
Socioeconomic Status (SES)	−0.611**	−0.448*
School Size	0.534*	0.286
Principal Influence	0.246	0.019
Total		$R^2 = 0.66$*
		Adjusted $R^2 = 0.363$*

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

12.7.4 Hypotheses 2

Next, we tested Hypotheses 2 predicting that principal influence would emerge as a statistically significant predictor of faculty trust in colleagues, controlling for SES and school size. Principal influence combined with the demographic variables of SES (ß = −0.448, $p < 0.05$) and school size (ß = 0.286, $p > 0.05$) to form a linear combination that explained 36% of the variance in trust in colleagues (R square = 0.66, $p < 0.05$, with an adjusted R square of 0.36). When controlling for SES and school size, principal influence did not have an independent statistically significant effect on faculty trust in colleagues (ß = 0.019, $p > 0.05$), In fact, only SES emerged as a statistically significant independent predictor of faculty trust in colleagues. The results of the second regression analysis are presented in Table 12.5.

12.7.5 Hypotheses 3

Finally, we tested the Hypotheses 3 that principal influence would be a statistically significant predictor of faculty trust in clients, controlling for SES and school size. The results of the multiple regression analysis did not support the hypothesis. When principal influence was combined with the two controls, a linear combination of the variables accounted for 18% of the variance (R square = 0.52, $p < 0.05$, with an adjusted R square of 0.18) in faculty trust in clients, but only SES emerged as a statistically significant independent predictor of faculty trust in colleagues (ß = −0.483, $p < 0.05$). Principal influence (β = 0.079, $p > 0.05$) did not have a predictive effect on trust in clients, nor did school size (β = 0.002, $p > 0.05$). The results of the final regression analysis are presented in Table 12.6.

Table 12.6 Multiple Regression of Principal Influence, SES, and Size on Faculty Trust in Clients

Variables	b	ß
Socioeconomic Status (SES)	−0.515**	−0.483*
School Size	0.279	0.002
Principal Influence	0.271	0.079
Total		R = 0.52*
		Adjusted $R^2 = 0.183$*

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

Thus, in this sample of middle schools, principal influence emerged to explain a statistically significant portion of the variance in faculty trust in the principal but did not have a statistically significant effect on either trust in colleagues or trust in clients.

12.8 Discussion

Given the call for school reform, the evolving role of the school principal, and the need for trust in organizations, we investigated the relationships between principal influence and three dimensions of faculty trust. The trust dimensions identify important characteristics shown to reinforce the social milieu of schools (Hoy and Tschannen-Moran 2003, Smith et al. 2001). In brief, trust is clearly linked to organizational success and deeply entrenched in successful schools (Hoy 2002, 2003; Hoy et al. 2006; Hoy et al. 1996; Hoy et al. 1992; Hoy et al. 2002; Hoy and Tschanen-Moran 1999; Smith and Birney 2005, Smith et al. 2001).

Principal influence is also an important organizational commodity. In schools, influence involves the ability of the principal to be persuasive, and foster compliance and change (Cialdini 2001b). When considering the principles of influence (Cialdini 2001a, 2001b, 2003, 2005, 2007; Cialdini and Goldstein 2004; Cialdini et al. 1981; Guthire 2004; Hoy and Smith 2007) as they apply to aspects of trust in school settings, important considerations emerge. In this investigation, the primary research question was "Does principal influence predict faculty trust in the principal, teachers, and clients?"

Our analysis of the data indicated that indeed principal influence was found to have a statistically significant independent effect on teacher trust in the principal. However, the predictive effect of principal influence on both teacher trust in colleagues and trust in clients was not supported in this sample. The analysis supported Hypothesis 1, but not Hypotheses 2 or 3. We now examine the findings as they pertain to schools, extrapolate some conceptual links connecting principal influence with trust, and issue some conclusions. Finally, we conclude with a caveat concerning the legitimate use of the principles of persuasion.

12.8.1 Principal Influence and Faculty Trust in the Principal

We believe the interactions between influential principals and teachers trusting their campus leaders are multifaceted. In fact, it is possible that the intricacies of principal-teacher relationships are at the root of this phenomenon. While it may seem axiomatic that influential principals are linked to productive school environments, developing faculty trust in a school leader is not easy. However, influential principals are more proficient at garnering support, procuring resources, and advocating for their faculties than less influential ones and these traits do not go unnoticed by the teachers. Coupled with the fact that teachers are highly intertwined with their administration in effective schools (Barth 2006; Marks and Printy 2003), trusting relationships between principals and teachers deepen with additional illustrations of persuasion by the campus leader. Through consistent illustrations of principal influence and the resulting benefits to the campus, the teachers generate greater commitment to the school through increased trust. They recognize that through consistent demonstrations of principal influence, their school leader can "close the deal." Hence, the faculty members respond by trusting in the school leader as his or her actions support their efforts (Hoy and Smith 2007). As a result, the faculty perceives the principal to be influential, vested in their successes, interested in their wellbeing, and trustworthy.

12.8.2 Principal Influence, Trust in Colleagues, and Trust in Clients

Considering the results of this investigation, a brief reflection on the lack of statistically significant relationships in Hypothesis 2 and 3 is in order. Hypothesis 2 stated that principal influence would predict teacher trust in colleagues, yet this was not the case ($ß = 0.010$, $p > 0.05$). Furthermore, while Hypothesis 3 posited that principal influence would predict teacher trust in clients, it was not found to be the case ($ß = 0.021$, $p > 0.05$). Given these results, it is possible that the influence of the campus principal is predicated on his or her span of contact. To that end, the principal is often considered an indirect influence on situations involving direct client (parent and student) and colleague relationships. Indeed, some principals often engage with these two school constituencies out of simple necessity rather than choice. We remain intrigued by the prospects of what types of principal interactions could affect the faculty perceptions of trust pertaining to these two groups. Surely, the relationships between principal influence, collegial trust, and faculty trust in clients beg further study.

12.8.3 Trust and Influence: The Confluence of Two Salient School Properties

When the elements of trust and influence are compared, there are fundamental similarities that cannot be overlooked. That said, we suggest that both concepts bridge the gap between principal and teacher, thus, bringing them closer together in a bonded relationship where the influential character of the principal brings about confidence and trust from the teachers they serve. We believe both trust and influence enhance educational environments.

As Hoy and Tschannen-Moran (2003) conceptualized trust, the center point of the definition was the vulnerability of one person to another. Hoy et al. (2006) and Mayer et al. (1995) similarly note that the willingness of one to be vulnerable to another person and communicate authentically with that person is critical in developing open and honest social relationships. Thus, a person permits vulnerability to another based on one or more of the aspects of trust. We believe there exist interesting connections between the aspects of trust and the principles of influence. We also believe these connections put the school principal in a unique situation. That is, trust is established between the principal and his or her faculty based on the interchangeability of some of the components of the two concepts. An explanation of these connections is in order.

12.8.4 The Competence, Authority, and Expertise Connection

One of the five aspects of trust is competence (Hoy and Tschannen-Moran 2003). A well-intentioned leader dedicated to accomplishing a task may, nonetheless, not be trusted if he/she does not posses the capacity to complete the task (Baier 1986; Butler and Cantrell 1984; Mishra 1996). That is, a person must be able to produce or exhibit the necessary skills to complete tasks required by the organization to elicit trust. This concept fits closely with the aspect of authority (Cialdini 2001b) and the principle of expertise (Hoy and Smith 2007). Both of these influence traits lead us to believe that a persuasive leader generates trust via their expertise after being acknowledged as an organizational authority figure. Thus, by his/her designation of authority, the leader gleans the opportunity to demonstrate his or her expertise by exhibiting the skills necessary to complete desired organizational goals. This is done by recalling and utilizing an appropriate skill from previous experience to accomplish the current task. The result produces trust through reliable and competent behavior, and influence via public exhibition of personal expertise (Hoy and Smith 2007).

Put simply, "*the more trusting people are, the higher should be their level of obedience*" (Blass 1991, p. 403). Thus, when a leader demonstrates a high level of competence in a specific area (Hoy and Smith 2007) he or she is inherently more influential (and more authoritative), and thus is perceived as trustworthy in that capacity.

12.8.5 The Connection of Leader Influence, Reliability, and Commitment

Reliability is an essential ingredient of trust. In essence, reliability points to consistent behavior or knowing what to expect from others (Butler and Cantrell 1984; Hosmer 1995; Tschannen-Moran and Hoy 2000; Smith 2000). When reliability is linked with competence, leader credibility is buttressed and the opportunity for influence emerges. Conversely, unreliable actions by leaders prompt stakeholder uncertainty. When this occurs in schools, faculty trust in the principal is challenged and influence wanes (Nestor-Baker and Tschannen-Moran 2001; Tschannen-Moran and Hoy 2000). However, principals who consistently meet the expectations of the faculty in leading the school forward greatly enhance their abilities to influence.

With organizational trust established, the interface of leaders executing both reliable actions and influence is readily observable through a natural by-product of this important union. Once an individual has committed to a specific behavior, future consistency in applying that same behavior is probable. Consistency, as defined by Cialdini (2001b) is *the desire to be and appear consistent with what we have already done*. He reminds us that "commitment is the key" and that once the principal has faculty commitment stemming from his or her reliable actions it is not difficult to get them to repeatedly comply. In a sense, a reciprocal relationship anchored in reliability develops. Principals who demonstrate reliable actions that benefit the campus enhance both their credibility (trustworthiness) and influence with their faculties, which in turn elicits commitment from the teachers. Likewise, principals who commit to following a line of predictable behaviors designed to benefit the school provide the faculty with future expectations of what is to come in a given scenario.

In times of uncertainty, people count on consistent and reliable behaviors. In schools where reliability is established by a competent principal, teachers follow a natural tendency to remain committed to actions they have previously demonstrated (Deutsch and Gerard 1955). They perceive their commitment as both rational and safe (Ehrlich et al. 1957).

12.8.6 The Interface of Benevolence and Fairness

The establishment of trust through benevolence is closely linked to the influence principle of fairness. Benevolence is characterized by unsolicited caring actions of one person to another individual occupying a subordinate or vulnerable position. Baier (1986) contends that, "when I trust another, I depend on her good will toward me" (p. 235). In other words, benevolence is "the confidence that one's well-being or something that one cares about will be protected by the trusted party or group" (Hoy and Tschannen-Moran 2003, p. 204).

Similarly, Hoy and Smith (2007) conceptualize fairness as the need for "individuals to desire fair treatment" (p. 162). Indeed, fairness is believed to be a critical ingredient for workers' self esteem and leaders who disregard the principle of fairness

in the workplace risk negative consequences (Greenberg 2000; Kelley and Finnigan 2003). Conversely, failure to orchestrate workplace fairness can bring about a "dark side" in employees that evokes destructive behavior such as institutional sabotage and mistrust (Brebels et al. 2008; Skarlicki et al. 2008). This leads to disruptive actions that destroy relationships, erode trust, and minimize influence (Crino 1994).

Trust is fostered when an individual (trustor) feels the trustee will keep his or her best interests in mind and act in the spirit of fairness (benevolence) during times of danger or potential exploitation (Baier 1986; Bradach and Eccles 1989; Butler and Cantrell 1984; Cummings and Bromily 1996; DeCremer 2000; Meierhans 2008). In schools, principals seeking to generate both trust and influence are careful to gauge subordinate vulnerability. Without question, schools constitute intimate social environments and possess delicate social bonds. As such, influential principals consistently monitor institutional mechanisms dealing with organizational justice, fairness, and benevolence.

12.9 Implications

The findings of this study have implications for both researchers and practitioners. The art of persuasion can be extremely effective in advancing a leader's agenda, regardless of circumstances or intent. Influence represents a potent force for establishing one's position in an organization. In particular, school principals wishing to exercise influence with both internal and external constituencies possess significant opportunities to reinforce their campuses in positive ways and generate greater levels of trust (Adams et al. 2009; Barnett and McCormick 2004; Marks and Printy 2003; Roney et al. 2007; Smith et al. 2001; Tschannen-Moran 2001; Youngs and King 2002). As the landscape of education changes, influence and those who wield it, will become even more important in determining productive outcomes.

12.9.1 Practical Implications

This study of faculty perceptions of principal influence and trust used two valid and reliable instruments: the Omnibus T-Scale (Hoy and Tschannen-Moran 2003) and the Persuasion Index (Hoy and Smith 2007). Both scales gauge the social milieu of the campus from the perspective of the teachers. The Omnibus T-Scale is designed to reflect teacher perceptions of trust in the principal, teachers, and clients. Additionally, the Persuasion Index measures faculty perceptions of the influence of the campus principal. As both trust and influence have proven to be important aspects of the social environments of schools, principals seeking to change their campuses for the better are encouraged to utilize the two instruments employed in this study.

The Persuasion Index is potentially useful to both practitioners and scholars. It measures the extent to which school constituencies perceive their campus leadership

as influential. Likewise, the Omnibus T-Scale is a proven instrument for measuring three dimensions of trust within a faculty. Both of the instruments are objective and parsimonious. They are easily administered and teachers in this study did not object to taking them. The information gleaned from these measures can prove useful to an administrator acting to change the school environment in a responsible manner.

12.9.2 Future Research: Trust and Influence

This investigation employed a non-experimental design that addressed the following general research question, "Does principal influence predict faculty trust in the principal, teachers, and clients?" While this study adds to the existing literature on trust and influence, several questions remain and are recommended for future study. Does the influence of the principal vary with experience? What are the relationships between years of professional experience and faculty influence?

Given that the study's results only supported principal influence as a predictor of faculty trust in the principal, what is relationship between influence and specific elements of leadership and trust? For example, Sherwood and DiPaolo (2005) considered some leaders high in certain trust elements but lower in others. What leadership style is best suited for the development of principal influence? What elements of influence correlate with various elements of trust evidenced by effective leaders? What are the relationships between school success, as measured by state required tests, and the influential nature of the principal?

Other questions regarding trust and influence emerge. For example, what are the self-perceptions of influential principals compared to the perceptions of their teachers? Does ethnicity have any relationship to influence or trust at the campus level? Is there a relationship between influence and student-perceived climate? Finally, how do community perceptions of the principal's influence compare to his or her self- perception? Do various principles of influence have unique impacts at the campus level? And do principals interpret the principles of persuasion as ethical? Certainly, the study of influence and trust provides fertile ground for future research.

12.10 Influence: A Necessary Caveat

Work by Cialdini (Cialdini 2001a, 2001b, 2003, 2005, 2007; Cialdini and Goldstein 2004; Cialdini et al. 1981) and Hoy and Smith (2007) point to "influence" as a potentially dangerous force in the school context. Research reveals a dark side of influence that is difficult, even for those trained to identify, to resist (Cialdini 2001b). Indeed, businesses and politicians often are eager to use the principles of influence for personal and institutional gain (Bohnet 2005; Gallan et al. 2007; Gonul et al. 2001; Gueguen and Pascual 2003; Katz et al. 2003; Mizik and Jacobson 2004; Sandburg 2007).

Early on, Schopler and Thompson (1968) recognized the powerful nature of influence and strongly cautioned that influential acts must be carefully planned and delivered or the situation can deteriorate to bribes, rejection, and negative actions stemming from ill will. Thus, the caveat is clear; principals harnessing the power of influence must *know where and in what direction they are leading the faculty because the powers of influence will get them to that point quickly*. Given the close proximity that principals have when working with teachers and other campus professionals (Otto and Arnold 2005; Schlichte et al. 2005), they must keep themselves connected to the best interests of the faculty when using their influence and avoid Machiavellian pursuits.

12.11 Conclusion

Our research findings inform administrators on improving campus performance by adding 10 principles of influence to an established body of trust research. Trust is a well-known institutional commodity and principals are advised to seek innovative ways of extending it. The literature points to trust as an essential ingredient of effective schools (Hoy et al. 2002).

Likewise, emerging accountability pressures also prompt school principals to seek new ways of motivating stakeholders to achieve greater organizational goals. Influential leaders can inspire stakeholders to implement needed reforms and generate positive campus outcomes. Unfortunately, schools are increasingly challenged to adapt to changing social conditions, achieve greater academic goals with fewer resources, while overcoming obstacles such as personnel, and financial limitations. To accomplish these goals and overcome organizational impediments, influence comes into play.

The results of this study indicate that principal influence predicts faculty trust in the principal. Influential principals who utilize their persuasive talents for the good of the teachers reap the benefits of a faculty that trusts their leadership. However, influence constitutes a slippery slope fraught with ethical challenges and institutional complications. Principals versed in these psychological practices are capable of motivation beyond the goodness of their intentions and school leaders must be cautious about how the principles of influence are used. The positive and enlightened use of the principles of persuasion by school leaders can nurture trust-building school environments where meeting the challenges of a rapidly changing educational system is accomplished in both ethical and respectful ways.

Appendix A

Persuasion Index

Directions: The following are statements about your school. Please indicate the extent to which you agree with each statement along a scale from strongly disagree to stongly agree.

		Strongly disagree					Strongly agree
1	My principal believes he or she has the capability to be successful in this school	1	2	3	4	5	6
2	My principal treats others as he or she expects to be treated	1	2	3	4	5	6
3	My principal's behavior is open and transparent	1	2	3	4	5	6
4	My principal is "in the know" in this school system	1	2	3	4	5	6
5	My principal defers to those with knowledge regardless of position	1	2	3	4	5	6
6	My principal gets the faculty to embrace school goals	1	2	3	4	5	6
7	My principal seeks advice from those who know regardless of their position	1	2	3	4	5	6
8	My principal understands how to obligate people	1	2	3	4	5	6
9	My principal knows how to win friends and influence others	1	2	3	4	5	6
10	Regardless of the situation, my principal is always optimistic	1	2	3	4	5	6

Appendix B

The Omnibus T-Scale

Faculty Trust in Colleagues Subscale:

- Teachers in this school trust each other.
- Teachers in this school typically look out for each other.
- Even in difficult situations, teachers in this school can depend on each other.
- When teachers in this school tell you something, you can believe it.
- Teachers in this school are open with each other.
- Teachers in this school are suspicious of each other.
- Teachers in this school have faith in the integrity of their colleagues.
- Teachers in this school do their job well.

Faculty Trust in the Principal Subscale:

- The teachers in this school have faith in the integrity of the principal.
- Teachers in this school can rely on the principal.

- The principal doesn't tell teachers what is really going on.
- The principal in this school is competent in doing his or her job.
- Teachers in this school trust the principal.
- The teachers in this school are suspicious of most of the principal's actions.
- The principal of this school does not show concern for the teachers.
- The principal in this school typically acts with the best interests of the teachers.

Faculty Trust in Clients Subscale:

- Students in this school can be counted on to do their work.
- Teachers can count on parental support.
- Students here are secretive.
- Students in this school care about each other.
- Teachers in this school trust the parents.
- Parents in this school are reliable in their commitments.
- Teachers in this school trust their students.
- Teachers in this school believe what parents tell them.
- Teachers think that most parents do a good job.
- Teachers here believe that students are competent learners.

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Part IV
Trust and Bridging

Chapter 13
The Principal Connection: Trust and Innovative Climate in a Network of Reform

Alan J. Daly, Yi-Hwa Liou and Nienke M. Moolenaar

13.1 Introduction

Better understanding reform and the application of innovative practice has the potential to improve educational outcomes. Principals, in particular, have been increasingly tasked and held responsible for implementing reform efforts as well as fostering climates that support innovative practices. Their efforts have typically taken shape through the implementation of formal structures, processes, and curricular efforts to improve outcomes, signifying a more "human capital" approach to reform and innovation (Daly 2009; Finnigan and Stewart 2009). This approach has often resulted in inconsistent improvement and ongoing patterns of underperformance (Mintrop and Sunderman 2009).

Recent research suggests that perhaps one of the reasons for this lack of improvement may have to do with limited attention to the social and relational linkages through which reform and innovative practices flow (Coburn and Russell 2008; Daly and Finnigan 2010, 2011; Daly et al. 2010; Penuel et al. 2009). While the education community has begun to focus on the types of collaborative structures within schools (Harris and Chrispeels 2006; McLaughlin and Talbert 1993; Newmann and Wehlage 1995; Stoll and Louis 2007), what remains understudied is the importance of improved relations between principals within a school district in terms of improving schools and fostering innovation.

This chapter builds on recent scholarship regarding network and social capital theory in the support of organizational change (Balkundi and Kilduff 2005; Bartol and Zhang 2007; Daly, Finnigan, Moolenaar and Jing In Press; Daly 2010; Kilduff and Krackhardt 2008; Mehra et al. 2006). In this inquiry two major dimensions of social

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capital will be used to analyze the interactions between principals in three school districts: *structural*, which refers to the social ties and connectedness of principals, and *relational*, which refers to the quality of ties between actors (Bourdieu 1986; Halpern 2005; Nahapiet and Ghoshal 1998). The structural elements of social capital in this chapter will be examined through systematic exploration of the constellation of relationships between and among principals. The relational component of social capital will be examined through assessing perceptions of trust. Previous research has suggested that trust is critical in learning (Daly and Finnigan 2012; Bryk and Schneider 2002; Forsyth and Adams 2004; Rotter 1967; Tschannen-Moran 2009) as it supports individuals to engage in risk-taking and is associated with efforts at reform in a "safe" learning environment that is open to innovation (Bryk and Schneider 2002; Kensler et al. 2009; Louis et al. 1996; Moolenaar et al. 2011; Penuel et al. 2007). In addition, as a trusting environment supports learning and the development of new ideas and an innovative climate has been suggested important to foster reform efforts (Moolenaar et al. 2010), we will also examine perceptions of innovative climate.

In exploring the structural and relational social capital of the principals in underperforming school districts, we: (1) analyze the social networks of principals in three district in terms of advice seeking around reform efforts, including how "socially tied" principals are to one another; (2) examine principal perceptions of trust and innovative climate; and (3) explore the association between social ties, trust, and innovative climate. In building the foundation for the study we provide a review of the current status and challenges facing underperforming schools. We then explore the critical role of principal networks in supporting reform and connect those efforts to the largely unexplored importance of social relationships, trust, and perceptions of innovative climate across 89 principals within three districts. In bringing together these literatures we argue that improvement efforts will require closer attention to structural and relational social capital and innovative climate among and between school leaders as they undergo efforts at improvement.

13.2 Context

Improving underperforming schools is complex and difficult work that requires attention to the broader system in which schools reside. Evidence from educational organizations, successful in improving outcomes, suggests that school staff that are more trusting, interactive, and work in climates open to innovation may be better able to improve (Bryk and Schneider 2002; Daly and Finnigan 2012; Mintrop 2004; Mintrop and Trujillo 2007; O'Day 2004). However, it can be difficult to maintain these "safe" environments when increasing sanctions may negatively affect the professional climate and inhibit interactions among educators (Daly 2009).

To help nurture such safe environments and achieve system-wide improvement, school districts are increasingly adopting a more system-wide approach. Improvement of underperforming schools, as such, requires a shift in the focus of reform from individual schools to understanding the nested nature of change. In this sense districts need to move from a "School System" to an interdependent "System of

Schools." Studies of successful districts that applied such systemic approaches to change suggest a range of strategies that schools and districts can take in building stronger connections (Honig 2004; Johnson and Chrispeels 2010; Togneri and Anderson 2003), including creating structures for interaction and mutual learning between leaders (Copland and Knapp 2006; Finnigan and Daly 2012; Honig 2006).

Research suggests that this orientation toward system-wide improvement is closely linked to the quality of relationships within and across an organization (McGrath and Krackhardt 2003; Tenkasi and Chesmore 2003), as the structure of social ties has the potential to support or constrain the exchange and development of new knowledge between individuals and levels in a system (Ahuja 2000; Tsai and Ghoshal 1998). Frequent trusting ties between principals enacted in a change-oriented culture may be important in coordinating reform as these relationships support the transfer of tacit and complex knowledge that allows for mutual problem solving and collaboratively developed innovative approaches (Hansen 1999; Daly and Finnigan 2012; Reagans and McEvily 2003; Uzzi 1997). In this chapter we argue that while a reform may prescribe particular ways of responding, it is ultimately the quantity and quality of social ties between individuals, as reflected in a trusting and change-oriented climate, that may support and constrain reform in schools.

13.3 Framework

In the next section we deepen our discussion around the key elements of social network theory, trust, and innovative climate, which form the foundation of our conceptual framework.

13.3.1 Social Networks and Social Capital

Social network theory may provide insight into how the social processes involved in reform are often stretched across individuals and levels of the educational system. Generally speaking, social network theory is concerned with the pattern of social ties that exists between actors in a social network (Scott 2000). A social network perspective enables researchers to look beyond the attributes of individuals to understanding the larger social structure in which individuals reside, including the more dynamic supports and constraints of this larger social infrastructure (Borgatti and Foster 2003; Cross et al. 2002; Wellman and Berkowitz 1998). As Borgatti (2003) offers, network theory represents a paradigmatic shift from "theoretical constructs from monadic variables (attributes of individuals) to dyadic variables (attributes of pair of individuals)" (p. 2).

Social network studies in education (e.g., Anderson 2010; Coburn and Russell 2008; Cole and Weinbaum 2010; Daly 2010; Frank et al. 2011; Levine and Marcus 2010; Penuel et al. 2009; Spillane et al. 2009), as in other fields, primarily focus on

how the pattern of relationships in networks may facilitate and constrain the flow of "relational resources" (attitudes, beliefs, knowledge, materials, etc.), as well as provide insight into how individuals gain access to, are influenced by, and leverage these resources (Degenne and Forsé 1999). The network perspective in educational studies does not supplant the importance of individual attributes in developing, implementing, and evaluating reform efforts, but rather provides a complimentary perspective and set of methods for better understanding the dynamic influence of such inherently social processes (Daly 2012).

Social network and social capital theorists are concerned with both the network structure of social ties, thought of as the "quantity" of ties, and the "quality" of those ties (Portes 1998). For the sake of this chapter we will focus on the level of trust as a quality of those ties. The first element, network structure, is primarily focused on how an actor is embedded in social relations, which forms a patterned network of relationships (Nahapiet and Ghoshal 1998). The role of such networks in the process of change and reform has been implicated as both supporting and constraining efforts (Daly 2010; Kilduff and Krackhardt 2008; Leana and Van Buren 1999; Penuel et al. 2009; Weinbaum et al. 2008). This literature suggests that the structure of social networks can support organizational goals by facilitating the flow of information between individuals and overcoming challenges of coordinating action (Adler and Kwon 2002; Lazega and Pattison 2001; Lin 2001; Tsai and Ghoshal 1998; Walker et al. 1997). Research further suggests that strong close relationships within and across a network have been associated with initiating and sustaining change efforts as well as the successful movement of complex relational resources (e.g. tacit knowledge, skills, and know-how) (McGrath and Krackhardt 2003; Tenkasi and Chesmore 2003). Yet, in schools where the network structure is less conducive for the transfer of resources, change efforts may be constrained by these less optimal relational conditions (Wellman and Berkowitz 1998).

Strong networks of communication have also proven to contribute to the functioning of organizations (Katzenbach and Smith 1993; Lawler 1992) by building an organization's capacity for exchanging resources (Kogut and Zander 1996). Organizations with dense network structures between organizational levels generally achieve higher levels of performance than those with sparse connections (Reagans and Zuckerman 2001). However, those same densely connected networks may also inhibit performance due to the stability of ties which may limit the introduction of novel information (Szulanski 1996) as well as reduce flexible organizational response, and primarily move redundant information (Hannan and Freeman 1984; Burt 1992). Many scholars have identified densely connected, closely linked networks as a source organizational advantage (e.g., Adler and Kwon 2002; Leana and Van Buren 1999; Nahapiet and Ghoshal 1998; Walker et al. 1997), as those social interactions provide opportunities to build trust and as such significantly add to an organization's ability to innovate through supporting risk tolerant climates (Tsai and Ghoshal 1998).

Yet, insights into the extent to which principals' social networks are shaped to benefit the transfer of resources and support educational change are limited.

Specifically, in this chapter we are concerned with understanding the "closeness," in a network sense, of principals in seeking and receiving advice regarding reform efforts. Prior research suggests that the "social distance" or "closeness" between actors can support or constrain the opportunity to share and receive information (Camagni 1995; Helmsing 2001; Lawson 1999). Social distance in our study refers to the geodesic distance[1] between actors. Geodetically *close* proximity is considered to be beneficial in the formation of interpersonal interactions through which resources (i.e., advice) are exchanged (Maskell and Malmberg 1999). In other words, individuals that are close in a network sense[2] to one other (i.e., have the shortest paths to each other) tend to have greater opportunities to access and receive information from another in an efficient manner (Hanneman and Riddle 2005). Thus, an individual's *closeness* may be important to effectively distribute resources across the network (Borgatti 1995, 2005; Okamoto et al. 2008; Wasserman and Faust 1994). In examining the close network structure around advice relationships among principals, we would be able to better understand the structural aspect of social capital that an individual principal possesses.

13.3.2 Trust

The relational aspect of social network and social capital has been identified as an important affective norm characterizing a community and individual action (Nahapiet and Ghoshal 1998). In this chapter we will focus on trust as the relational component of social networks and social capital, and its importance to professional relationship among and between leaders. We will also suggest that high levels of trust are related to innovative climate as well as supportive of the development of social advice ties.

Trust is an interactive process with each party discerning trustworthiness of the other (Bryk and Schneider 2002; Tschannen-Moran 2004). In addition, trust is based on interpersonal interdependence (Rousseau et al. 1998) and is embedded in networks of relationships (Hoy and Tschannen-Moran 2003). Given these core ideas, trust has been conceptualized as a multi-faceted construct that can be defined 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 (Cummings and Bromiley 1996; Daly and Chrispeels 2008; Hoy and Tschannen-Moran 2003).

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[1] Geodesic distance in a network sense refers to the length of the shortest path between two actors in a social network.

[2] Geodesic closeness centrality of a vertex n_1 (actor) in a network graph, from a social network perspective, refers to the inverse of the average shortest-path distance from the vertex n_1 to all other vertices reachable from n_1. It can be regarded as an index of efficiency of each actor in spreading resources and/or information to other actors (Okamoto et al. 2008) as well as an index of the expected time an actor needs to flow something in or out from other actors across the network (Borgatti 1995, 2005).

Trust in educational settings has been suggested as an important component of improvement and reform (Forsyth et al. 2011; Tschannen-Moran 2004; Van Maele and Van Houtte 2011). As a relational resource, trust has been associated with cooperation (Deutsch 1958; Tschannen-Moran 2001; Hoy and Tschannen-Moran 2003), group cohesiveness (Zand 1971), motivation (Finnigan 2010), and the ability to flexibly respond to accountability pressures (Daly 2009). High levels of trust have also been associated with a variety of efforts that require collaboration, learning, complex information sharing and problem solving, shared decision-making, and coordinated action (Bryk and Schnieder 2002; Bryk et al. 2010; Cosner 2009; Kensler et al. 2009; Tschannen-Moran 2004; Tschannen-Moran and Hoy 2000; Lin 2001). When individuals feel able to take risks with one another and expose vulnerabilities, they are better able to seek support and feedback, share concern, and connect to others across the organization (Bryk and Schneider 2002; Moolenaar et al. 2011; Edmondson 2004; Tschannen-Moran 2004). Trust may also be particularly important for supporting "advice" relationship in which one has to expose one's vulnerabilities to another in seeking help. In fact, some research uses frequent "advice" relationships as a proxy measure for trust (e.g. Levin and Cross 2004). Hence, we would expect a relationship between trust and advice ties regarding reform between principals.

In connecting the variables in our study research has suggested that trust is important for the development of innovative climates, which may increase the quality of organizational outcomes (Goddard et al. 2001; Hoy 2002; Hoy and Sabo 1998; Moolenaar et al. 2011; Tschannen-Moran 2004). Fukuyama (1995) argued that trust is critical for an organization's well-being and the system's ability to stay competitive, as high-trust environments reduce transaction costs and support innovation. Trust and innovative climates thus are particularly important in organizations in which there are "critical task interdependencies" (Gargiulo and Benassi 1999, p. 299), and where individuals–in our case principals–must regularly exchange information and receive support as to coordinating efforts.

Scholars have reported the positive association of trust in educational organizations, including the increased likelihood of seeking out new ideas (Bryk and Schneider 2002; Daly and Finnigan 2012; Tschannen-Moran 2004). As such, creating and supporting a climate of trust and innovation between principals, may increase opportunities for exchanging information critical to improvement and supporting behaviors that encourage others explore innovative practices (Costa et al. 2001). In organizations, a trusting climate open to innovation is important as it tends to build upon itself with the occurrence of more frequent trusting interactions between individuals leading to closer relations and potentially supporting additional interactions through creating a sense of collective trust (Forsyth et al. 2011; Tschannen-Moran 2004). Bryk and Schneider (2002) suggest that, "Trust is important for organizations that operate in turbulent external environments that depend heavily on information sharing for success…" (p. 33), which is certainly the case for principals in underperforming urban districts. Therefore, given the suggested connection between trust and innovative climate, we will turn our attention to the concept of innovative climate.

13.3.3 Innovative Climate

Organizational innovation has been examined in management and organizational research (Hage 1999). Innovation, in general, has been defined as the development and use of new ideas, behaviors, or practices (Daft and Becker 1978; Damanpour and Evan 1984). In an organizational sense, innovation is not merely transmitting, diffusing, or recycling existing knowledge between members; it is also concerned with the transformation of prevailing knowledge and practices of actors as a means to organizational change (Nonaka and Takeuchi 1995).

Scholars have emphasized the importance of an innovative climate to foster the generation and implementation of new practices and approaches (Amabile 1998; Van der Vegt et al. 2005). While the actual innovations that are used are important in understanding improvement (Ellis 2005; Huberman and Miles 1984), research suggests that systems in which individuals are willing to take risks and to continuously learn are more successful at implementing actual innovations than organizations with less openness (Geijsel 2001; Van den Berg and Sleegers 1996).

Focusing on innovative climate instead of actual practices helps to move past the contextual aspect of examining specific innovations. Whereas innovations are often context specific, examining perceptions of an innovative climate provides us with the opportunity to compare across settings. Following Van der Vegt et al. (2005), we define innovative climate as the shared perceptions of organizational members concerning the practices, procedures, and behaviors that promote the generation of new knowledge and practices and support risk taking. Central to this definition are principals' perceptions of the groups' willingness to collectively develop new ideas, practices, and engage in risk taking that supports goals (Moolenaar et al. 2011). Recent research on school reform also indicates that leaders in underperforming systems are often characterized by a lower reported self-efficacy, which may also inhibit innovation for both principals and district office leaders (Daly et al. 2011; Daly and Finnigan 2009), suggesting that perceptions of innovative climate may vary by role.

Innovation is an iterative and cyclic process that is established and maintained through relationships in high trust climates (Kanter 1983). As such, innovation is regarded as an interactive social process, which provides opportunity for organizational members to interact (Calantone et al. 2003; Nohari and Gulati 1996). The ability to share, dialogue, and consider multiple vantage points with others is central to the development and maintenance of an innovative climate (Monge et al. 1992; Frank et al. 2004). This suggests a learning process (Paavola et al. 2004), in which the combination of different actors, knowledge, and abilities spawns the creation of novel ideas and approaches. Such learning processes are less likely to take place without group members' willingness to take risks on innovative ideas and practices as also suggested in research on trust. Therefore, examining the interplay between trust and innovative climate on the network of relationships between principals would provide us a more in-depth understanding of what key variables are associated with principals that seek or become highly sought in a network of advice regarding reform.

13.3.4 Closeness, Trust, and Innovative Climate

In this study we are examining two core elements of relationships, the structure of social ties as defined by "closeness" and the quality of those relational ties as examined by trust, and perceptions of innovative climate. Previous literature suggests that positive experiences from prior social interactions may foster trust by reducing uncertainty about the engagement and involvement of the other party and as such may support an innovative climate (Moolenaar and Sleegers 2010). This predictability of relations gained through close interactions both potentially decreases the vulnerabilities between individuals as well as likely increase the depth of exchange due to a willingness to engage in risk taking, which is central to innovation (Albrecht and Bach 1997; Larson 1992; Uzzi 1997). In support of this claim, research suggests that individuals tend to seek close relationships as those ties provide mutual benefit to the relationship in effect creating a reinforcing effect (Daly and Finnigan 2011; Lin 2001). High trust norms may also support the exchange of complex tacit knowledge as may be transmitted in an "advice" relationship.

The idea of close relationships and the importance of a trusting climate open to innovation also resonates in research related to communities of practice (Lave and Wenger 1991). Close and trusting relations provide opportunities for individuals to interact and learn together, which has been suggested to be important in educational systems oriented toward learning (Finnigan and Daly 2012; Honig 2008; Wenger 1998). These close and trusting relations can provide opportunity to modify and deepen patterns of interaction as well as develop increased repertoires of behaviors, which may be thought of as a process of learning necessary for improving practice (Honig and Ikemoto 2008; Lave and Wenger 1991). On balance this literature suggests that actors who are close to one another may also perceive trusting relations that allow for risk taking and experimentation, key aspects of innovative climate. Although the relationship between close relationships (in a network sense), trust, and innovative climate has been suggested as important for improvement, to date this relationship has not been explored with a population of principals who are actively and collaboratively enacting efforts at system-wide reform. We believe our work provides a useful understanding of the relationship in supporting practical reform efforts among principals.

13.4 Methods

The current survey study was conducted with three school districts that are located in Southern California that serve similar student populations, are under sanction for continued underperformance, and are undergoing efforts at reform. First we offer an overview of the sample and procedures; provide descriptive statistics of the sample of respondents; and discuss the reliability of the instrumentation. Next we offer cor-

Table 13.1 Characteristics of participants in the study

Variable	N	%	Mean	SD
Female	52	58	–	–
Ethnicity				
White	43	48	–	–
Latino	33	37	–	–
Asian American	4	5	–	–
Black	6	7	–	–
Other	1	1	–	–
Highest degree attained			–	–
Bachelor's degree	1	1	–	–
Master's degree	25	28	–	–
Master's degree + 30 units	52	58	–	–
Doctoral degree	5	6	–	–
Working experience[a]				
Years in administration	89	–	2.58	1.42
Years in district	89	–	2.98	1.42
Years in current school	89	–	1.40	0.69

Note. $n = 89$ principals

[a] The years of working experience were categorized on a scale 1–6 (1 = less than 4 years; 2 = 5–9 years; 3 = 10–14 years; 4 = 15–19 years; 5 = 20–25 years; 6 = 25 years or more)

relational analysis among the various variables as described as well as the results of our analysis in predicting closeness in advice relationships among principals from participant demographics, trust, and innovative climate.

13.4.1 Sample

We sampled all the principals from three similar school districts that served student populations of color from low socio-economic backgrounds that were implementing district-wide reform efforts in response to continued underperformance under NCLB (*No Child Left Behind*). Eighty-nine principals in total participated in the study from across three districts. Survey response rates averaged 96% over the three districts with a range from 93 to 99%. Descriptive information for participants in the study is provided in Table 13.1. Forty-five of the participants came from District 1, 16 from District 2, and 28 from District 3. Female principals represented 52% of the respondents in the overall sample. The majority of the participants were White (48%). Approximately 37% of the participants were Latino, 5% Asian, 7% Black, and 1% Other. In general, participants had an average of 10 years of working experience in administration in their district, and less than 4 years in the current school.

13.4.2 Procedure

Principals were asked to complete an online-survey in a two-week period during the spring of 2011. Through the survey we collected information about individual characteristics (gender, ethnicity, job title, work place, degree, and years of working experience) and measures of trust and innovative climate. We also collected a variety of social network questions about the frequency of advice seeking around reform efforts.

13.4.3 Measures

13.4.3.1 Dependent Variable

We argue that levels of trust and innovative climate provide important and necessary ingredients to understand the structure of advice ties that surround principals. Our dependent variable was gathered through a social network survey. In developing and validating our social network questions, we drew upon the previous research on networks that had used "advice" (Cross and Parker 2004; Cross et al. 2002; Daly and Finnigan 2009; Hite et al. 2005; Klein et al. 2004). We piloted our relational questions with 49 practicing administrators from another district that are representative of our study sample. While we collected data on a number of relationships, for this chapter we focus on "advice." Respondents were asked to quantitatively assess their relationships with other principals within their own district on a 4-point interaction frequency scale ranging from 1 (within the past two months) to 4 (1–2 times a week). The advice network data was taken from the prompt, *"Please check the interaction frequency of those principals to whom you turn to for advice concerning the district's reform effort."*

In this study, we focused only on principals rather than district office administrators or teachers, in an effort to understand the overall principal network in reform (DeVita et al. 2007; Honig et al. 2010). We used a bounded/saturated approach (Scott 2000), meaning that we included all the principals because this strategy, coupled with high response rates, provides a more complete picture and more valid results (Lin 1999; Scott 2000).

Incloseness and outcloseness. We then calculated two network measures related to individual centrality for our network relationship: advice incloseness, and advice outcloseness. We measured advice closeness centrality, which measures how "close," in a network sense, an actor is to the other actors in the network (Wasserman and Faust 1994). Closeness is the standardized form of farness, which measures the sum of the geodesic distances an actor has from and/or to the other actors in the network. The closeness index ranges between 0 and 1. The greater the closeness, the closer an actor is to all other actors. In this study, we are interested in the directional relations among school and district leaders in terms of advice-seeking

and advice-receiving regarding school reforms. Thus, the closeness measure in a directional network can be divided into advice incloseness and advice outcloseness. Incloseness of an actor n_1 refers to the normalized number of distances/paths required for the other actors to access actor n_1 in a directed network. Outcloseness of an actor n_1 refers to the normalized number of distances/paths required for actor n_1 to access other actors in a directed network. In this manner, we may regard the incloseness of an actor as an index of an actor's advice-receiving and the outcloseness as advice-seeking of an actor. For the present study, therefore, the dependent variables represent the degree of connectedness and shortest paths between these advice ties among principals within each school system.

13.4.3.2 Independent Variables

We then selected predictors that allowed us to explain the variance of the degree of connectedness among principals within their school systems. Independent variables were chosen to reflect two key areas: trust and innovative climate controlling for demographics.

Trust. We assessed the relational aspect of the study through a modified trust scale from the "trust in colleagues" survey published by Hoy and Tschannen-Moran (2003). Participants were asked to respond to each of the nine items. The items were scored on a 6-point scale, ranging from 1 (strongly disagree) to 6 (strongly agree). For example, we asked participants "Administrators are open with each other." As we report below for the innovative climate scale we kept the trust scale focused on all administrators in the districts given the potential influence of the larger trust climate of leadership.

The trust measure was generated using principal component analysis for the nine survey items. Varimax rotation resulted in one factor with Eigenvalues greater than one. The nine original items were reduced to a scale of six items that explained 66% of the variance with factor loadings ranging from 0.64 to 0.90 ($\alpha = 0.90$). Items that were removed had a communality of less than 0.40. Table 13.2 provides factor coefficients of each item for the trust variable.

Innovative climate. We measured principals' perceptions of their district's climate in support of innovation with fourteen items that were developed to assess schools' and districts' orientations to improve (Bryk et al. 1999; Consortium on Chicago School Research 2004), that were adapted to fit the focus of this study. The scale was designed to measure the extent to which principals perceive their colleagues having a positive attitude towards developing and trying new ideas as well as their perceptions of district office leaders perceiving an innovative climate. The fourteen items were scored on a 6-point scale, ranging from 1 (strongly disagree) to 6 (strongly agree). For example, in order to assess the perception of innovative climate between and among principals we asked the principals to report the degree to which they agreed with the statement, "Principals are continuously learning and seeking new ideas." In order to assess the principals perceptions of the innovative climate in the

Table 13.2 Factor loadings for factor analysis of study scales

Trust	(α=0.90)	Principal innovation	(α=0.94)	District innovation	(α=0.93)
Administrators trust each other	0.904	Principals are willing to take risks to make the district better	0.887	Administrators in the district office are encouraged to 'stretch and grow'	0.888
Administrators have faith in the integrity of their colleagues	0.889	Principals are constantly trying to improve their leadership	0.880	Administrators in the district office are continuously learning and seeking new ideas	0.883
Administrators are open with each other	0.881	Principals are continuously learning and seeking new ideas	0.862	Administrators in the district office are continuously developing new approaches to support instruction?	0.871
Even in difficult situations, administrators can depend on each other	0.871	Principals are generally willing to try new ideas	0.856	Administrators in the district office are constantly trying to improve their leadership	0.858
Administrators typically support each other	0.802	Principals have a positive 'can-do' attitude	0.853	Administrators in the district office have a positive 'can-do' attitude	0.838
Administrators are suspicious of each other (reverse coded)	0.642	Principals are continuously developing new approaches to support instruction?	0.842	Administrators in the district office are generally willing to try new ideas	0.810
		Principals are encouraged to 'stretch and grow'	0.829	Administrators in the district office are willing to take risks to make the district better	0.744

Note. Factor loadings > 0.50 are included. Proportion of variance explained for trust scale: 66 %; principal innovation: 64 %; and district innovation: 74 %. $n = 89$ principals

district office we asked a similar question with a different focus, "Administrators in the district office are continuously learning and seeking new ideas." Of all the fourteen items, seven items were designed to measure principals' perceptions of innovative climate among the principals, and the other seven items were to understand principals' perceptions of innovative climate among central office administrators.

The innovative climate measure was generated using principal component analysis for both the principal and central office scales. For those items that measure the innovative climate among principals, principal component factor analysis with varimax rotation revealed one distinct factor with eigenvalues over one explaining 64% of the total variance and factor loadings ranging from 0.83 to 0.89 ($\alpha = 0.94$). For the measures of innovative climate among central office administrators, one distinct factor revealed using principal component factor analysis with varimax rotation, eigenvalues over one explaining 64% of the total variance, and factor loadings ranging from 0.74 to 0.89 ($\alpha = 0.93$). None of the items were removed. Factor loadings of these two scales were listed in Table 13.2.

Demographic variables. We controlled for demographic information that included: gender (1 = female; 0 = male), number of years in an administrative position (1 = less than 4 years; 2 = 5–9 years; 3 = 10–14 years; 4 = 15–19 years; 5 = 20–25 years; 6 = 25 years or more). Using a similar scale we also collected the number of years working as an administrator, in the district, in current position, and at the current site. We chose to include all of these predictors in an effort to better understand advice exchanges as those social interactions may be due in part to the length of time one has been in a district or in a particular position which may act as a proxy for knowledge and experience.

13.4.4 Data Analysis

First, we conducted correlation analyses to examine the relationships between principals' network position, demographics, trust, and innovative climate. Since we selected three school districts in our sample, we performed mean comparison tests as well as running similar models for each district to examine the consistency of results. The results indicate that the independent variables were not significantly different across the three sites ($F = 0.62–2.96, p > 0.05$) and that the models offered similar findings. Given these results, we pooled the data from the three districts for subsequent analyses. We then conducted multiple regression analyses to test the relationships between principals' network position, trust, and innovative climate after controlling for demographic characteristics. We conducted separate models for two types of centrality measures in order to address concerns of multicollinearity that often reflects in the social network analyses. Given the strategy and advent of permutation tests (Borgatti et al. 1998), we may assume less concern about inflating standard errors on multicollinearity.

Finally, we provided a network sociogram from one of the sample districts as a representative graphic illustration of our findings regarding the relationship between a principal's network connection, perception of trust and innovative climate. We used NetDraw (Borgatti 2002) to generate the sociogram that contains nodes (i.e., individual principals), ties (advice-receiving connections between principals),

Table 13.3 Descriptive statistics for variables used in the analysis

Variables	Minimum	Maximum	Mean	SD
Years in administration	<4 years	>25 years	10–14 years	1.42
Years in district	<4 years	>25 years	10–14 years	1.42
Years in current school	<4 years	15–19 years	<4 years	0.69
Trust[a]	2.17	6.00	4.82	0.88
Principal innovation[a]	1.00	6.00	5.22	0.79
District innovation[a]	1.57	6.00	4.91	1.01
Advice incloseness[b]	0.01	0.56	0.09	0.13
Advice outcloseness[b]	0.01	0.46	0.09	0.11

Note. $n=89$ principals

[a] Variables are used based on a 6-likert scale from 1 = strongly disagree to 6 = agree[b] advice incloseness and outcloseness are normalized values

and outcome information of our variables in the social network, which is discussed in detail in the result section.

13.5 Results

13.5.1 Descriptive Analyses

Descriptive statistics for demographics, trust, innovative climate, and close relationship were summarized in Table 13.3. Results indicate that principals perceived trusting relationships among themselves ($M=4.82$, $SD=0.88$). They also reported a climate of innovation among the principals ($M=5.22$; $SD=0.79$) and district administrators ($M=4.91$, $SD=1.01$) with a slightly higher score on the principal innovation scale. That is, the principals perceived the climate more innovative among the principals than among the district administrators. In terms of close relationship among the principals, result indicates that the principals are able to closely connect to 9% of other principals at the shortest paths in receiving ($M=0.09$, $SD=0.13$) and seeking advice ($M=0.09$, $SD=0.11$). Our descriptive results suggest that the principals possess similar degree of connectedness in reaching and receiving resources pertaining to reform advice as well as perceive trusting relationships and innovative climate among the administrators.

13.5.2 Relationships between Principals' Close Relationship, Trust, and Innovative Climate

The results of correlation analysis as shown in Table 13.4 indicates that perceptions of district innovation ($r=-0.33$, $p<0.05$) and years of administrative experience ($r=-0.24$, $p<0.05$) were significantly and negatively correlated with advice incloseness or outcloseness. Meaning that those principals who tended to perceive the dis-

Table 13.4 Correlation matrix for variables used in the analysis

	1	2	3	4	5	6	7	8
1. Years in administration	–							
2. Years in district	0.41**	–						
3. Years in current school	0.34**	0.27*	–					
4. Trust	−0.04	0.20	−0.15	–				
5. Principal innovation	−0.18	−0.02	−0.12	0.28*	–			
6. District innovation	0.05	0.09	0.20	0.36**	0.43**	–		
7. Advice incloseness	−0.18	0.04	−0.20	0.06	0.19	−0.33*	–	
8. Advice outcloseness	−0.24*	−0.01	−0.14	0.05	0.21	−0.26	0.87**	–

Note: $n = 89$ principals
* $p < 0.05$; ** $p < 0.01$

trict's innovative climate as less innovative also tended to have close relationship in receiving advice around reform (i.e., greater incloseness). In addition, those principal who tended to have fewer years of working experiences in administration were more likely to seek advice regarding reform from more principals in the network (i.e., greater outcloseness). However, trust and principal innovation were not significantly associated with any of the outcome variables (i.e., incloseness and outcloseness). These correlations indicate that the perceptions' of district innovation and years of experience in administration are negatively associated with principal's close network connections.

13.5.3 The Role of Demographic Variables in Principals' Close Network Connections

To understand whether or not demographic characteristics of school principals played a role in the relationships proposed under this study, we examined the extent to which demographic variables were associated with principals' close network connections (see Table 13.5). We found that principals who had fewer years of experience in administration tended to have more close relationships in seeking other principals for advice around reforms ($\beta = -0.33$, $p < 0.05$). Those less experienced principals tended to have a greater percentage of close relationships with others in terms of advice seeking. Lastly, principals' demographics were not significantly related to her/his advice receiving behaviors (i.e., incloseness). All other demographic variables (i.e., years in the district and the school) were found to have no significant effect on advise-seeking and -receiving behaviors and therefore excluded from further analyses.

13.5.4 The Relationships between Advice Incloseness, Trust, and Innovative Climate

The first overall model was significant in explaining 33 % of the variance in advice incloseness. Multicollinearity test indicates that the independent variables do not

Table 13.5 Results from multiple regression analyses predicting advice incloseness and outcloseness

Variable	Advice incloseness			Advice outcloseness		
	β	t	Sig	β	t	Sig
Years in administration	−0.22	−1.73	0.09	−0.33	−2.47	0.02*
Years in district	0.18	1.44	0.16	0.20	1.47	0.15
Years in school	−0.14	−1.09	0.28	−0.08	−0.58	0.59
Trust	0.29	2.09	0.04*	0.33	2.23	0.03*
Principal innovation	0.36	2.62	0.01**	0.28	1.95	0.05*
District innovation	−0.64	−4.37	0.00**	−0.42	−2.90	0.01**
R^2		0.33			0.25	
F		7.15**			4.91**	

Note. Standardized beta (β). $n = 89$ principals
* $p < 0.05$; ** $p < 0.01$

depend linearly on each other, reflecting the tolerance value ranging from 0.72 to 0.82. The results showed that controlling for years of experience, trust ($\beta = 0.29$, $p < 0.05$) and principal innovation ($\beta = 0.36$, $p < 0.01$) each made a significantly positive and independent contribution in explaining advice incloseness. However, district innovation was negatively correlated with advice incloseness ($\beta = -0.64$, $p < 0.01$). This can be interpreted as: Principals who perceived trust in the system and an innovative climate among the principals, but perceived a lower innovative climate for the district are *more likely* to have more *close* relationships in receiving advice from others within the organization. Supporting our theoretical framework that trust and innovative climate are important elements that allow for the development of close connections (in a network sense) necessary for the exchange of reform advice.

13.5.5 The Relationships between Advice Outcloseness, Trust, and Innovative Climate

The second overall model was significant in explaining 25% of the variance in advice outcloseness. Multicollinearity test indicates that the independent variables do not depend linearly on one other, reflecting the tolerance value ranging from 0.79 to 0.98. The results showed that controlling for years of experience in district and current school, advice outcloseness is positively associated with trust ($\beta = 0.33$, $p < 0.05$) and principal innovation ($\beta = 0.28$, $p < 0.05$), but negatively associated with district innovation ($\beta = -0.42$, $p < 0.01$). The results suggest that principals who perceived higher trust in the system and an innovative climate among the principals, but lower innovation for the district administrators tended to have *more* shortest-paths to others and thus have more efficient (in a network sense) access to others regarding reform related advice.

To sum up the results of the models, trust and innovative climate on the part of principal were two significant positive variables explaining principals' network connections in terms of being able to more efficiently and effectively access and

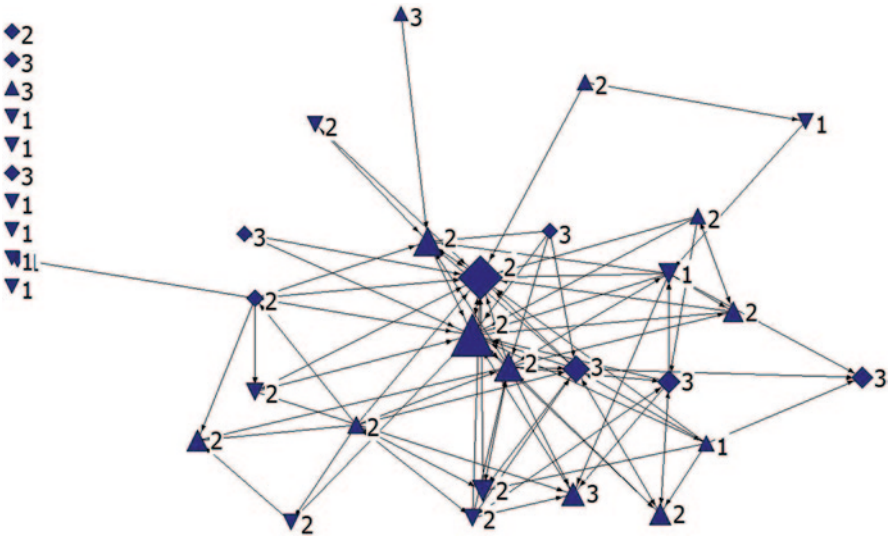

Fig. 13.1 Advice Network of Incloseness for Principals. (*Note.* Nodes were sized by incloseness; shaped by level of trust (*high* = diamond; *middle* = up-triangle; and *low* = down-triangle); and labeled by level of principal innovation (*1* = lowest; *2* = middle; and *3* = highest))

receive advice around reform. However, negative perception of district office innovative climate, was associated with less closeness between principals.

13.5.6 Advice Network Sociogram: The Relationship between Closeness, Trust, and Innovative Climate

These results can also be depicted visually through a representation of advice relationships among principals. Figure 13.1 provides a representative sociogram in one of the sample districts to illustrate the relationship between a principal's network connections (i.e., incloseness and outcloseness), trust, and innovative climate. Nodes in Fig. 13.1 represent individual school principals and ties represent connections between those principals. The size of nodes indicates the degree of incloseness an individual principal possesses from others. The larger the node, the greater incloseness a principal has. These nodes were also shaped by three levels of trust with a diamond representing a high level of trust, up triangle mid-range, and a down triangle the least amount of trust reported. We also labeled the nodes indicating the level of principal innovation with 1 representing the lowest level of principal innovation, 2 mid-level, and 3 the highest level. The advice network indicates that principals with mid to high levels of self-reported trust and innovative climate for the principals tended to have more close connections from others regarding reform advice. Supporting our framework around trust, innovative climate and principal network structure, the advice network result suggests that those principals who are

central and influential in both disseminating and receiving reform advice tend to perceive greater trust and innovative climate for other principals.

13.6 Discussion

This chapter provides additional understanding on principals who occupy important social roles. Our findings yield valuable results indicating that the principals who had more experience in administration were found to be less close to their colleagues in terms of seeking and receiving advice. In addition, principals who perceived higher levels of trust and innovation for their colleagues were also close to many other principals in terms of providing and seeking advice. Principals were also found to be closer to their colleagues when they perceived higher trust and innovation amongst themselves, but perceived a lower innovative climate among district office administrators, perhaps suggesting the need for principals to reach out more to one another for support. Our study offers several key themes related to leadership practice around reform.

13.6.1 The Role of Trust and Principal Innovative Climate in Supporting Network Connections

With increasing demands for improving outcomes, school systems are seeking new and innovative approaches and practices to carry out reform efforts. This chapter contributes to previous literature regarding trust and innovation and further underscores the importance of social ties among principals. Our work indicates that individual principals are more willing to take risks in sharing and exchanging novel approaches to reform if they perceive trusting relationships with other administrators. Moreover, as the principals perceive more risk tolerant climates they are also more likely to foster more direct and close ties with larger numbers of their colleagues regarding the exchange of advice around reform efforts. This suggests a potent combination of both trusting relationships and innovative climate as being associated with greater advice exchanges with more members of the network. In this sense, when a greater sense of trust and innovative climate are present, principals are more easily and directly able to access the advice of many other principals and as such may come to a more informed perspective.

While this finding may not be surprising to the field of educational leadership and school climate, it is unique in a sense that in this chapter we combine these more "traditional" climate measures with the pattern of professional interactions among principals. Supporting previous studies around principal innovation and school reform (Moolenaar et al. 2010), our work further demonstrates the facilitating role of trust and perceptions of innovation to support professional interactions regarding reform efforts particularly in underperforming school districts that are under tremendous pressure to improve outcomes or face significant sanction (Daly 2009).

Our work also suggests an equally important pattern of principals' incloseness and outcloseness regarding advice about reform behaviors. The "closer" a principal is to other principals in a reform network, the more efficiently and potentially effectively the principal will be able to receive and disseminate resources (e.g., knowledge and information around reform) across the entire principal network. As such these principals may be in a position to disproportionately influence the larger network of principals. This may work in a positive and proactive way, as these central actors may be able to facilitate the flow of good advice regarding reform and in this sense sustain perceptions of trust and innovative climate.

However, these same principals, who are in a central position in a network may also "move" poor quality advice which may have significant negative costs to school systems in terms of incorrect information being used for decisions. As such, a valuable lesson for leadership may be that while close relationships among principals seem to increase the flow of resources and information necessary for reform practices, one may need to be cautious of the quality and content of such information spread across the network. One possible course of action might be an information audit mechanism in which tacit advice that is generated in a system is made more explicit.

13.6.2 The Impact of Perception of District Office on Principal Networks

Our results suggest a relationship between the principals' perception of the district office as not embracing an innovative climate and fewer close advice ties. This speaks to the larger issue that principals, of course, are not isolated entities but are embedded in larger systems of support and constraints. Central offices, in particular, are emerging as important in the role of change. Districts play a critical role in directing reform efforts (Finnigan and Daly 2012; Datnow et al. 2007; Supovitz 2006; Tongeri and Anderson 2003). They primarily do so by investing resources and developing structures that build human capacity within the organization. They can also potentially support principals to seek advice from one another by creating a safe environment for risk taking and experimentation.

District offices can also play an important role by encouraging and providing the development and support of relational linkages between the central office and sites, which may provide opportunities for the brokering of resources and the development of coherent and innovative approaches toward reform (Daly and Finnigan 2011). Moreover, these linkages may provide the connections through which "learning partnerships" between district and sites may flourish and support systemic efforts at change (Honig et al. 2010) and perhaps provide a different perspective on the work of the district. The combination of this work and the findings from our study suggest the important role of the central office in efforts at not only school level improvement, but principals' perception of their ability to both seek and be sought for advice regarding reform efforts.

13.7 Limitations and Future Directions

While this study provided a unique approach to analyzing the important role of principals using a social network analysis, it also had limitations in its design and as such provides potential directions for future studies. We acknowledged that we did not incorporate qualitative data (i.e., interviews, observations, and relevant document review) with our quantitative results to further investigate additional detail in how leaders in central positions come to occupy those positions or of the "quality" of advice that was exchanged. Future studies may collect data from a sample of leaders that represent a variety of different network positions and conduct a comparative study between those central and peripheral leaders to understand individual perceptions as well as the quality of advice interactions.

In addition, this study collected data from principals at three school districts identified as underperforming. Future studies may increase the sample size for a more elaborate multilevel analysis to better control the variance across contexts. Moreover, although we have examined the effect of demographic characteristics, years of experiences, trust and innovative, additional variables may be included within a larger sample such as the proximity of leaders' work site to others, subgroup effect (e.g., specific leadership team), collective efficacy (Goddard et al. 2000, 2004; Leithwood and Jantzi 2008; Tschannen-Moran and Barr 2004), and the effect of intermediary organizations and/or external agencies. Finally, while we examined advice-seeking and -receiving relationship, future studies may investigate other network relationships such as functional expertise (e.g., Aronson et al. 2006; Bunderson 2003) and friendship as a way to test out additional associations.

Lastly, in this exploratory study we argue that trust and innovative climate are associated with the network of advice ties between principals. We acknowledge that the direction of these variables is complex and that a plausible argument could be made for examining variables in a different order as has been done in studies of teachers (Moolenaar et al. 2012). As such we suggest that as this work moves forward we need more robust longitudinal and causal models that better unpacks the specific directions of these complex and often interdependent variables.

13.8 The Principal Connection

This chapter makes a unique contribution to our understanding of the variables associated with those principals that occupy important positions in a social network. Clearly, perceptions of trust and principal innovation are important to cultivate a close advice relationship with other principals, whereas years of experience in administration and perceptions of district innovation tended to be constraints in the development of such relationship. Our work suggests that the area of organizational trust and innovative climate on the part of principal holds promise in supporting principal network connections. This study also indicates that the perceptions of

principals in regard to the district office may be consequential. As districts play an important role in partnership with school principals in facilitating, and perhaps constraining, reforms, school systems might further develop the linkages between principals to better enact innovative practices, especially among those principals who are less experienced in administration. Such district-wide approaches to foster and grow supportive, trusting, and innovative climates at both school- and district level, as are becoming common core in the current educational field, will not only benefit schools in terms of increased trust and actual innovative practice but also indirectly through the increased exchange of advice in principal connections.

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Chapter 14
Trust in Districts: The Role of Relationships in Policymaking for School Improvement

Julie Reed Kochanek and Matthew Clifford

14.1 Why Do We Care about Trust in Educational Organizations?

Educational improvement agendas often involve technical prescriptions on how to improve educational quality, but do not address the relationships among people in a building, which provide the basis for adopting and sustaining technical innovations. The research literature on innovation adoption and sustainability is littered with technical solutions that do not take hold in organizations or that gain traction in one organization but not another. If we turn away from purely technical solutions to educational issues and focus also on the relationships among people in organizations, we can begin to identify additional ingredients in school improvement success.

Trust represents the relationship between people in an organization. Much recent empirical research on trust in educational organizations has focused on trust in schools, between staff in those schools. Effective schools research often lists trust as a key component in eliciting cooperation among teachers with reform efforts (Bryk et al. 2010b; Daly and Chrispeels 2008; Sebring et al. 2006; Meier 2002; Spillane and Thompson 1997). These studies demonstrate that the schools that make the most progress toward reform are the ones with the strongest sense of trust within the school. In these schools, trust facilitates conversations about instructional reform that give the experts a chance to share their understanding with the teachers. In addition, high levels of trust are linked to high levels of over-

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all teacher orientation to innovation which is demonstrated by having a "can-do" attitude, continuous learning and seeking ideas and encouragement to change. In high trust schools, teachers feel comfortable collaborating on reform efforts by discussing their understandings of the reform and how it relates to their own instructional practices. In this way, teachers are able to push one another's thinking about instruction and schooling and the ways in which the reform could impact student learning (Sebring et al. 2006).

Higher levels of trust have also been linked to a stronger commitment among teachers to the school and recognition among the faculty that they have a collective responsibility for the welfare of their students. Teachers with a strong sense of school commitment express their loyalty to the school by their willingness to speak well of it and through their desire to continue working there. A sense of collective responsibility for student welfare is demonstrated by teachers caring for their students and accepting responsibility for their development beyond the formal requirements of their role. These studies also show trust as a predictor of the level of outreach to parents which includes encouraging parents to visit classrooms, providing opportunities for parents to voice concerns about the school, and working closely with parents to meet student needs (Bryk et al. 2010b; Sebring et al. 2006; Bryk and Schneider 2002).

Beyond improving teacher attitudes and behavior, research on trust in schools demonstrates a relationship between trust and school effectiveness (Hoy et al. 1992; Bryk and Schneider 2002; Goddard et al. 2001). Using teacher reports, Hoy et al. (1992) link supportive principal leadership to higher levels of teacher collegiality. The authors then link high levels of teacher collegiality to teacher-teacher trust which they show has a positive relationship with teacher reports of school effectiveness. Goddard et al. (2001) demonstrate a strong link between student test scores and teacher trust in parents and students. More stringent measures of school improvement are used in a Bryk and Schneider (2002) study linking trust with school productivity as measured by adjusted trends in student scores on standardized tests. This research demonstrates that growing levels of trust between the adults in a school community coincide with improving levels of academic productivity schoolwide. With these latest pieces of work, both Goddard and associates and Bryk and Schneider complete a link between the growth of trust and organizational changes which can lead to improved educational outcomes for students.

Given that trust is important, how is trust built in schools? Kochanek (2005) argues that trust typically develops through two main mechanisms: the creation of positive conditions that set the stage for easing another's sense of vulnerability and by entering into a series of successful social exchanges. Low –risk social exchanges can promote positive discernments of respect and personal regard and high-risk exchanges can promote positive discernments of competence and integrity. Thus, with the inclusion of these conditions, there are three overarching types of action in trust development: setting the stage for trust, creating opportunities for low-risk interactions, and creating opportunities for more high-risk interactions.

14.2 How Do We Define Trust in Schools?

The literature on trust in schools has generally stemmed from two strong sources of research that were developed separately and simultaneously. Hoy and his colleagues have worked from a school climate perspective to develop a definition of trust in schools (Tarter et al. 1989, 1995; Hoy et al. 1992; Tschannen-Moran and Hoy 1998; Hoy and Tschannen-Moran 1999; Goddard et al. 2001). Bryk and Schneider (1996, 2002) have conceptualized trust in schools as it operates in everyday relationships and acts as a structural characteristic of schools. While terminology and methods vary, much of the work coming from these two streams of literature is parallel and the results are similar. In this chapter, we are working from the concepts elaborated in Bryk and Schneider's work.

Bryk and Schneider conceptualize trust as being formed around the specific roles that people hold in schools. Parents, teacher and principals all form expectations about the role obligations of the other adults in the school. The growth of trust depends in part on the degree to which these actors have shared understandings of their role obligations. However, as there is not open discussion about these expectations of roles, actors use less direct methods to assess others' fulfillment of role obligations. Typically, people in these role relationships look for actions that conform to their expectations of role obligations. As individual actions may not be readily witnessed in the school setting and even when actions are observable, they may be ambiguous, actors often use a process of discerning the intentions that motivate the other actors to judge whether or not individuals conform to expectations. For example, parents do not always have direct access to their child's classroom. Therefore, they cannot monitor the daily efforts of the teacher on their child's behalf. However, they can make a discernment that this teacher appears dedicated to doing whatever she can to benefit the children in her classroom. As such, they feel that she meets their expectations of her role obligations as a teacher.

The authors identify four key elements that individuals use in this process of discerning the intentions of others in schools: respect, competence, integrity and personal regard for others. Respect involves a basic regard for the dignity and worth of others. Respect that leads to trust occurs when people listen to what others have to say and respond to it in some fashion. Competence is the ability to carry out the formal responsibilities of one's role; however, Bryk and Schneider note that in schools, competence is difficult to judge in some role relationships. For example, a teacher's competence cannot be directly assessed. Therefore, one cannot always note the differences between an average teacher and a good teacher. However, teaching incompetence is discernible through student scores and evaluation of practices. Integrity is demonstrated by espousing beliefs that are based on doing what is in the best interests of the children and carrying through with actions that are consistent with those beliefs. Finally, personal regard involves the display of intentions and behaviors that go beyond the formal requirements of the role.

The recent empirical work focuses on trust within school organizations as an important ingredient for school improvement. Yet, schools leaders and teachers rarely

act as an island, isolated and insulated from external policy forces. School-level improvements are supported by human resource, financial, and other forms of policy emanating from the district-level and subject to interpretation by district administrators (Coburn et al. 2008). However, little is known about how trust operates at the district level. Do the relationships within central office and between the central office and schools play a similar, meaningful role in district and school performance?

14.3 Policy Push for Evidence Use in Decision-Making

We argue that research on trust in educational improvements provides an incomplete picture if relationships between central office policies and school responsibilities are not taken into account. How, if at all, does trust play a role in district-level administrators' work on policy? In this chapter, we explore the role of trust in district administrator practices in the context of instructional policymaking. We do this by examining how district-level policies are made, who is involved in creating policies, and what types of relationships are leveraged to make these policies. Specifically, we explore the role of trust in the evidence-seeking behaviors of district-level administrators. Evidence– which we broadly define as including empirical studies, experience, testimonials, data, or policy documents—may be leveraged by district staff when determining which policy directions should be pursued by school districts (Spillane et al. 2001). We will show that central office administrators' work involves leveraging trusting relationships within and between organizations to expeditiously set policy.

Empirical research in education often intends to inform educator decisions about instructional approaches, curriculum purchases, or district-level policies. Federal and state investments in research are intended to identify effective educational practices that may be taken up by school districts and implemented, with confidence, at scale (Slavin 2002). However, Lageman (2002) and Burkhardt and Schonfeld (2003) found that educational research is less influential than anecdotal information or personal experience in educators' decisions about classroom practices or policies. Sherratt and Miller (2012) similarly found teachers turn to near-peers, rather than research or other information, for evidence that an instructional or other practice will work in the classroom.

Federal investments in education research and dissemination have sought to increase supply, transmission and demand for educational research. Federal efforts have focused on both the supply of rigorous research to local education agencies and the demand for research by local educators. On the supply side, federal research programs have created standards for development, validation and scale-up research studies (Department of Education 2012), which are intended to emphasize levels of research rigor and corresponding methodologies. The What Works Clearinghouse has also identified standards of scientific evidence for categorization and dissemination of research to educators.

Additionally, federal policies have sought to improve the evidence pipeline so that rigorous research is accessible to local educators. The national comprehensive centers and regional educational laboratories have, for example, each sought to develop research briefs and policy summaries that are accessible to multiple stakeholders by synthesizing research findings, writing text so that it is free from jargon and disseminating research through multiple channels. These and other federally-funded centers are encouraged to engage in extensive outreach programs that include social media, electronic posting of research, and research convenings that are intended to disseminate empirical research.

Finally, other federal efforts have sought to increase educator demand for research. In 2002, federal policies began requiring school districts to use an unprecedented amount of evidence when making critical instructional policy decisions or district-wide educational plans. The No Child Left Behind Act (2002), and later the American Recovery and Reinvestment Act (2009), require school districts to develop instructional policies by drawing upon "scientifically-based research" and provide documentation of referenced research in policies and plans in order to receive Title I funds or other federal funding (National Center for Educational Statistics 2010; Means et al. 2010).

14.3.1 Research on District Use of Research in Policymaking

Researchers have also turned attention to the question of research use in education. According to McPherson (2004), the diffusion of research knowledge from the researcher to local policy makers is problematic in education and other social service fields and deserves empirical study to better understand and create products that move research into the daily work of educators. The Spencer Foundation, W.T. Grant Foundation and other philanthropic organizations have sponsored research on the diffusion of research in education. Many of these studies focus on research diffusion to teachers (e.g., Sherratt and Miller 2012; Daly and Finnigan 2012) or use by school boards (Asen et al. 2011, 2012).

Few studies have closely documented district administrators' leadership practices, or described the types of evidence that they use when making instructional decisions. Several recent studies have examined the role of evidence in central administrators' daily work (e.g., Coburn et al. 2009; Honig and Venkateswaran 2012). These studies provide much-needed insights into the "invisible" work of central administrators and explain how central administrators shape and use information in the execution of work tasks. The studies suggest that evidence plays a range of roles in central office administrators' lives, but we do not know how evidence travels to district central officers or what conditions, such as relational trust, contribute to evidence use.

School-level studies point to evidence diffusion and use as a *distributed* practice taken up by multiple organizational actors through the use of technology and other tools to achieve a common task. For example, Halverson et al. (2007) found that

entire schools, and sub-divisions of schools sometimes engaged in evidence acquisition and use simultaneously and encouraged input through consensus-building on the formulation of school policies. Such school-wide operations were not possible, Halverson and associates argue, without policies and procedures that tightly couple staff relationships and build trust within school organizations. Similarly, Ikemoto and Marsh's (2007) case studies show that school-level policymaking draws upon a network of district administrators and intermediary organization staff that are called upon time and again to provide ideas and feedback.

School-level investigations provide insight into the roles of district actors in policymaking. District-level administrators are present in accounts of evidence-based policymaking, but their work is not typically in the foreground. As Halverson et al. (2007), Ikemoto and Marsh (2007), and others note, central office administrators do not leave school leaders alone to make policies. Rather, they are engaged—however subtlety—in shaping school policy through the following actions:

- *Evidence gathering and screening*: District administrators conduct searches for credible information and screen information for school staff to reduce time and cognitive demands for reviewing and synthesizing data (Means et al. 2010; Kerr et al. 2006).
- *Facilitation of policy convenings for group sense-making*: District-level staff facilitates and support sense-making processes for schools, providing technical expertise and creating social space for promoting understanding of evidence (Halverson et al. 2007; Park and Datnow 2009).
- *Setting expectations for evidence use*: Either directly or indirectly, central office administrators communicate that school staff are responsible for using data and other evidence to inform policy and stipulate through procedure and review processes the types of evidence and acceptable use of evidence for decision-making (Wohlstetter et al. 2008; Sutherland 2004).
- *Provision of human, financial, and knowledge resources supporting evidence use in schools*: In busy schools, central office administrators provide resources and freedom from obligations to create space for evidence use and to model evidence use through their own actions (Halverson et al. 2007; Honig 2003; Park and Datnow 2009).

The studies clearly show that central office administrators access and use evidence in service to schools and lead efforts to ensure that evidence-based decision-making occurs in schools. We note also that central office administrators' work spans organizational boundaries of "school," "district central office," and "district" in the search for and provision of evidence to schools. School district administrators cultivate relationships that leverage evidence acquisition and use for the purpose of school-based decision-making, "parachuting in" to professional interactions and relationships with information and resources to, at times, steer the social and political process of policymaking and evidence use. The studies provide insight into the distribution of people and tasks for school-based policymaking. They do not, however, give access into the extended social and resource networks of central office administrators that may assist with the diffusion and use of information at the

school level. Further, the research studies point to the importance of central office administrators in diffusion and use of evidence in schools; but it is unclear how, if at all, these ties are reciprocated in the process of district-level policymaking.

14.3.2 Use of Evidence in the Work of Central Office Administrators

Few studies of evidence-based decision-making within district central offices are currently available. Yet, understanding the practice of district central administrators and the role of evidence in their work can provide policymakers, researchers, and others important insights for improvement of evidence diffusion. District central officers set policy by writing administrative rules/procedures, setting district budgets, and communicating district priorities through district improvement planning processes (Coburn et al. 2008; Massell 2001). In addition, district central officers "make policy" by interpreting state and federal policies and by determining which aspects of policy to follow and which to ignore (Spillane et al. 2002). Unlike school-level educators, however, the practice of district-level leaders has been relatively invisible to the research community, and few theories about how these leaders pursue their work are currently available (Corcoran et al. 2001; Honig 2006).

Studies of evidence-based decision-making in central administration have focused primarily on the use—rather than the diffusion or search—for evidence. Studies point to evidence as playing a limited role in the milieu of information considered by central office administrators when making policy (Coburn et al. 2009). While central office administrators are described as "swimming" or "drowning" in data and evidence, Concoran et al. (2001) and Kennedy (1982) found that administrators most often considered budgetary, political, and administrative issues when framing policy discussions, suggesting that the practicalities of district governance, rather than evidence, set parameters for decision-making. Like school personnel (see discussion above), district administrators appear to weigh multiple forms of information simultaneously when making decisions, rather than to rely on one or two instrumental student data points or research studies.

Coburn et al. (2009) analysis of studies on research use suggest that when district administrators use evidence, they do so in the following ways, which have been identified by Weiss (1980):

- *Instrumental*: Evidence is used instrumentally when it is applied to specifically address issues and problems and to provide knowledge to generate solution sets. Although instrumental use of evidence is mandated by policy (Honig and Coburn 2007), Coburn's review of four research studies with this focus found that evidence is only infrequently used for instrumental purposes. Even when evidence is used instrumentally, research indicates that it is interpreted to highlight certain things and to downplay others.

- *Conceptual*: Evidence is used for conceptual purposes when it provides users new perspectives on old or existing problems. Coburn and associates' review suggests that identifying conceptual use is challenging for researchers because doing so requires interpretation and reconceptualization of information. The review identified few instances in which research played this role in decision-making.
- *Symbolic*: Evidence is used symbolically when it legitimizes pre-existing conditions or solutions without necessarily having a one-to-one correspondence between research and solutions. Symbolic use of evidence is frequent in district decision-making, according to Coburn and associates, in part because evidence is used to affirm beliefs, ideas, and processes.
- *Sanctioning*: The sanctioning role of evidence is used to defend and legitimize program and policy decisions by providing district staff the capability to state that programs or policies are "research-based," which carries authority in the current political climate. The sanctioning use of evidence does not necessarily involve the direct use of research, but it may also include the creation of interpreted lists of research studies. Coburn et al. (2009) found that evidence, particularly research, is frequently used to sanction policies and programs.

Although these uses of research are noted, the Coburn and associates' research review located five studies—all of which were case studies involving observation and interviewing—and one factor analysis to draw these conclusions.

Several research studies have identified organizational factors shaping the use of evidence, or lack thereof, in district-level policymaking. Intra-organizational and extra-organizational relationships and structures influence district staff's proclivity to reference and use evidence. For example, Concoran et al. (2001), Massell and Goertz (2002), and Halverson et al. (2007) found that state and national policy requirements and political conditions surrounding districts were cited by staff as motivating factors for using research. While cited as an influence, however, studies are unclear about the role of extra-organizational relationships (e.g., relationships with intermediary organizations, foundations, and state departments of education) in creating political pressure for evidence use or the role that relationships play in mediating evidence acquisition or use (Honig 2006). Extra-organizational relationships have been shown to enable policy formation and program implementation by leveraging additional financial, human, and social capital (Honig 2006; Glennen et al. 2004).

Intra-organizational conditions, including the nature of administrative work and organizational structure, also appear to influence the use of evidence. At the most basic level, technology infrastructures and website subscriptions can enable or constrain staff abilities to acquire evidence, and the time required to search and review evidence has also been cited as affording and constraining evidence use. On the latter point, Concoran et al. (2001) and Honig (2003) characterize district-level administrators' workdays as exceedingly busy and policy environments as moving very fast, which leads to the conclusion that staff lacks time to search, prepare, and use research. Conversely, researchers characterize busy administrators' search for

information as continual, although Kennedy (1982) characterizes the search as pressured but focused on bolstering current beliefs and positions.

Studies also point to the influence of district politics, social mores, policies, and procedures as influencing evidence use. District politics and social mores may prompt, for example, central office administrators' symbolic use of research to provide authority to themselves or their ideas or to build coalitions among staff (Corcoran et al. 2001; Weiss 1980 from Coburn et al. 2009). Similarly, superintendents and other district staff can establish requirements or cultural norms that require the use of evidence as a rationale for decision-making.

Finally, central office organization into divisions and sub-divisions may be associated with evidence use. District central offices have been characterized as "siloed," wherein staff within the organizations work intently with groups of colleagues whose work is loosely-coupled to others' work within the organization. The siloing of district administrators' work may influence the types of information privileged within a given workgroup, the diffusion of information across the central office, and the ability of the organization to learn as one (Honig and Venkateswaran 2012). Coburn and Talbert (2006) also found variations between sub-units of a district central office relative to what constituted valid evidence, high-quality research, and use of evidence.

14.4 Examining the Role of Trust in District Policymaking

Given the importance placed on the use of research evidence in policymaking and the emerging literature suggesting a limited instrumental use of research evidence in district policymaking, we wanted to further explore what determined the use of evidence in policymaking. Specifically, we were interested in investigating the role of trust in information exchange around policymaking. The literature on the use of evidence suggests the acquisition, interpretation, and use of evidence are subject to the social, organizational, and political contexts surrounding district administrators (Coburn et al. 2009). Research has documented the flow of information across social relationships through the use of social capital (Coleman 1988; Granovetter 1973). Social capital, or the ties between individuals and organizations, is a resource through which information, trust, norms, and values can flow. In terms of knowledge diffusion, the social relationships within an organization and surrounding the individuals of an organization are important factors in the creation of shared understandings about levels of evidence and sources of reliable information. Norms and values communicated through everyday interactions can influence individual habits of filtering information, tendencies to simplify complex evidence, and the basis for working knowledge (Coburn et al. 2008).

Recent studies of social capital have documented the power of bridging social capital that comes with weak ties that bridge social groups or organizations (Putnam 2000). Although information shared between strong ties may carry more weight as

it comes from trusted or known sources, research suggests that individuals and organizations more often benefit from information across weak ties as it is more likely to be new, innovative, or previously unknown to the individual or organization (Erickson 2003). In this way, individuals who serve as bridges to external resources may be viewed as extending organizational capacity to access evidence.

District administrators may interact across multiple role relationships to exchange information. They may turn to ties within the district central office or just beyond the physical office to school-level personnel. As discussed in the use of evidence research, they may turn to experts linked to the district as consultants or reach out to experts known by reputation. Alternatively, they may seek out peers in other districts or colleagues in state education agencies.

Considering the research on the use of evidence and district decision-making, this chapter explores the following research questions:

1. What role relationships are likely to be used as primary sources of evidence in district policymaking?
2. What role does trust play in the acquisition and use of evidence in district policymaking?

14.5 Methods

To examine these research questions, we developed four case studies of district instructional policymaking by collecting observational, interview and artifact-based data. Specifically, we employed an embedded, multi-case study design, with each case containing more than one sub-unit of analysis (Yin 1994). Within each of the four cases of district-wide policymaking, we describe two distinct policymaking efforts: a policy aiming to address instruction directly, an adaptive problem, and a policy aiming to address instructional use of technology, a technical problem.

This exploration of trust in district policymaking is part of a larger study of district policymaking practices, and the types of evidence employed when making policy. The cases describe eight examples of policymaking (four adaptive and four technical) occurring in four school districts. The purpose of this study is not to generate findings that may be generalizable to a broader population of school districts. Rather, we are seeking to contribute to an emerging theory of the social and organizational conditions supportive of district-level policymaking (Strauss and Corbin 1990; Yin 1994).

14.5.1 Sampling

We used purposive sampling to select four school districts that would provide insight into the phenomenon of the study (Maxwell 2004). Criteria for selection are

as follows. First, we selected districts serving 10,000–30,000 students in town, suburban or exurban communities and located within the same state. We chose this criterion to capture decision-making as it is practice in "typical" school districts, and school districts serving student populations of this size serve 50.8 % of student nationally. Further, we sought districts with similar annual budgets because financial capacity may support or inhibit evidence acquisition and use. Selecting districts of similar student population size also provided districts with similar annual budgets, since state funding is partially based on student population size. Second, we selected districts that were located in the same state because we recognize differences in state policy and politics may, in turn, influence social and organizational conditions. Sampling districts within a single state allowed us to observe differences between central office behaviors that were not associated with state differences.

Third, we selected districts that were just beginning district-wide policymaking processes to capture evidence acquisition and use as it unfolded through the entire policymaking process. We sought to observe policymaking as it unfolded because "research-based" policymaking carries cache in the national policy environment, and we sought to avoid false reports of evidence acquisition and use. We also sought to select similar policy problems in all school districts. Interviews with the district superintendent identified an initial list of policy issues that were being addressed by the school district, and superintendents' interviews informed our categorization of policy as adaptive/technical and our selection of policies. Policy issues that were common across school districts and that were at the beginning stages of development were selected. Policymaking efforts occurring simultaneously were chosen because leadership actions are contingent, in part, upon the organizational context at the time (Katzenmeyer and Lawrenz 2006), and the demand for research appears associated with the leadership task at hand (Fusarelli 2008).

We identified an initial list of 8 school districts in Kentucky that fit our selection criteria through colleague nominations. Kentucky is a primarily rural and sparsely populated state, with several urban centers. Kentucky was chosen as a site for the study because it is a local control state, which means that school districts are important actors in education policy formation. Kentucky school districts must comply with state fiscal reporting requirements, but have discretion in selecting instructional approaches and curriculum. The state also has a long history of enacting educational innovations. During the time of the study, for example, Kentucky became one of the first adopters of Common Core State Standards. After phone interviews and site visits with superintendents and district staff, we received commitments from four school districts described in Table 14.1 below.

District interviews identified several policy actions occurring in each district. We chose one adaptive problem and one technical problem to provide for a point of contrast. The adaptive policies were adoption of Common Core State Standards in mathematics and Response To Intervention[1] adoption in mathematics. Instructional

[1] Response to Intervention (RTI) is an approach to teaching and instructional management that entails frequent progress monitoring and early intervention into learning concerns by applying

Table 14.1 Sampled district information

District	Student population size	Budget (2010–2011)	Number of professional central office staff	Number of staff	Superintendent tenure in years
Woodward Public Schools	11,500	$107 million	28	1,700	6
Bodray County Schools	18,500	$189 million	23	1,100	4
Kerry County Schools	14,500	$134 million	38	990	5
Woodson County Schools	13,500	$99 million	32	1,100	2

technology purchases were selected as technical tasks common in districts. The Woodward, Kerry, and Woodson school districts were each setting policy on the Common Core Academic Standards in mathematics, and the Bodray district was beginning to adopt math RTI district-wide. The policymaking processes that we observed were in their beginning stages, and district staff stated that it was the first time the districts had pursued sweeping, district-wide curriculum changes. Each school district was required by the state to adopt the Common Core State Standards (Kentucky was the first state to do so) and implement approaches to differentiate instruction (through RTI or another program).

All school district superintendents and operations directors/technical support staff that were interviewed to define the sample stated that the district often made technology purchases. The selected policymaking cases included purchase of tablet computers (Bodray, Wooward), purchase of SMART boards (Kerry), and purchase of instructional supports (Woodson). The school districts were under no state-level obligation to purchase these additional technologies.

All district-level administrators characterized curriculum and technology policymaking actions as "frameworks" for schools, which are intended to constrain the set of options available to school staff rather than require school staff to comply with a single policy. As a staunchly local control state, Kentucky schools have discretion to comply with district administrative rules or laws. Policy frameworks allow schools to maintain their freedom while complying with districts improvement efforts. All policymaking actions observed for the study were successfully adopted by the districts' respective school boards.

14.5.2 Data Collection

The policymaking tasks served as focal points for the study, and the analysis of these tasks surfaced social and contextual features (i.e., organizational features, evidence

research-based instructional approaches. RTI emphasizes individualization of instruction for students.

artifacts) deemed salient by local actors to the policymaking process (Spillane et al. 2002; Halverson 2004). A problem with analyzing a network of people and artifacts in situ is that it is often difficult to tell which aspects of the complex organizational environment are important, and which ones are not. Our approach to data collection relied on leaders' perspectives to identify which organizational, social, and evidence were important to the policymaking process.

To the extent possible, data collection occurred during the development of district policies. Retrospective information was collected to round out the data set. To assure data quality, we established case protocols with the research team and employed both an advisory panel of researchers and two technical advisors, both of whom were very familiar with district policymaking procedures and served to check data collection. Data collection occurred from October, 2010 to December, 2011.

Data collection focused on observations of policy deliberations to document the types of evidence that were acquired and used for policymaking. A total of 37 meetings, representing 128 hours of observation time logged on-site or by video-conference. Meetings ranged in length between one and four hours, and occurred monthly. Semi-structured interviews were conducted with key informants and focal leaders. Key informant interviews provided information on the organizational context, particularly information about organizational structure and culture. Informant interview, helped situate observed policymaking in the broader picture of district improvement and policymaking. In addition to observation and interview, we collected and analyzed evidence artifacts identified by actors as informing the policymaking process. The evidence documents allow for an analysis of the number, type, and medium of evidence acquired and used for policymaking.

14.5.3 Data Analysis

We used the constant comparative method to data analysis which involved processing data during the data collection process. Structured meetings among the research team and technical advisors provided a means of surfacing themes, considering rival explanations, and probing data. Codes and code definitions emerged, and revisions to the *a priori* coding framework occurred. The study design and constant comparative method generated propositions or assumptions to be explored. Negative cases surfaced, and were explored through data collection.

Cross-case analysis occurred at two levels. First, similarities and differences in the acquisition and use of evidence between policymaking tasks (adaptive versus technical) within a single district case were analyzed, and then, second, between-case comparisons analyzed. Graphical and thematic analyses were created to facilitate within-case and between-case analysis (Miles and Huberman 1994).

14.6 Results

14.6.1 What Role Relationships are Likely to be Used as Primary Sources of Evidence in District Decision-making?

Organizations establish official chains of command to facilitate information and work flow among appropriate individuals. The division of labor distributes tasks among individuals, thus providing efficiencies in organizations undertaking many complex tasks. Official organizations, and supportive procedures, are intended to prescribe relationships among individuals or groups of individuals in organizations. As argued in Bryk and Schneider (2002), these role relationships are accompanied by individually held expectations about the responsibilities of the role. If individuals hold shared expectations about their roles, these mutual understandings can form the basis around which trust is built. However, because these expectations are rarely discussed directly, they may serve as a basis for misunderstanding and undermine the growth of trust.

School district central offices have been described as "siloed," which means that divisions within central offices may work semi-autonomously from other divisions. Work flows up and down the organizational chart within a division, but does not cross divisions horizontally. However, organizations may also divert from official structures and procedures, tapping into unofficial networks in order to accomplish tasks. Such occasions may occur when organizational actors believe that official procedures, communication structures, or organizational resources are insufficient for the task at hand, or when actors seek different opinions from outside the organization.

The cases indicate that administrators overseeing assigned sub-divisions were central to evidence acquisition and use in policymaking. The director or assistant superintendents chaired committees and were actively engaged in all aspects of policymaking, including evidence acquisition and use. In these medium-sized school districts, upper middle managers occasionally delegated responsibility for leading policy development to other staff. In all eight cases of policymaking, division directors led policy development efforts and had active roles in shaping the policymaking process by determining (a) which individuals would inform policy, (b) the pace of policy development, and (c) the evidence used to inform policy. Cross-case analysis showed district central office staff, and particularly upper middle managers, to be most central in terms of evidence acquisition and use.

Divisional staff reporting to the assistant superintendents or directors were less central but were also important to the acquisition and use of evidence. All divisional staff had specialized content knowledge and responsibilities. Divisional staff participated in and, at times, co-led policymaking efforts. In all eight cases of policymaking, divisional staff contributed evidence to policy development. Indeed, these internal district relationships were the most likely roles involved in exchanges.

As part of the policymaking effort, district staff often convened task forces or sub-committees that included school staff. The task forces were not represented anywhere on the districts' organizational charts, and were described as dynamic, temporary structures established to complete discrete tasks (e.g., technology purchases or instructional policymaking). In our adaptive policy tasks, teachers were included on subcommittees in all cases. These subcommittees were "vertically arrayed," which means that they actively engaged or gathered information from individuals at different levels within the organization (e.g., combinations of teachers, principals, central office administrators and parents). Task force operations provide opportunities for teachers and administrators to acquire and review evidence befitting the policymaking task.

The cases show that sub-committees work in liminal space among teachers, district middle managers, and upper level district administrators, leveraging evidence from "leader networks" and "teacher networks" to form policies. For example, the Woodward, Bodray, and Woodson central office staffs regularly participated in extra-organizational policy network meetings convened by intermediary agencies. These meetings were important venues for acquiring and using policy and practice evidence. Evidence regarding Common Core and RTI that was prepared by the state and disseminated through policy networks, for example, was used by central office staff to form policies. Similarly, staff of the University of Kentucky's math content network provided teachers with evidence used to frame and formulate Woodson Common Core mathematics policy. These types of teams do not appear on standard organizational charts but are parts of the organizations.

The extra-organizational networks also provide opportunities for developing relationships between peers across districts that result in evidence acquisition and use. Districts who have already developed and implemented new policy often serve as examples of practice to be examined and modeled. For example, district leaders in Woodson often referred to the work of Bodray in implementing the Common Core and developing materials months before other districts. The district superintendents reported they knew one another well through participation in leadership networks. Leaders at Woodson talked of wanting to adapt Bodray's model rather than create policies and materials on their own. Discussions of the Bodray model did not center on whether or not the model had been shown to be effective in terms of student outcomes. Rather, Woodson leaders discussed how well Bodray met challenges to implementation and interim outcomes such as teacher perceptions. Similarly, sub-committee leaders on the technical task in Bodray heard the Cincinnati superintendent speak at a network event on the use of innovation grants to promote technology diffusion. Bodray technology staff consulted with Cincinnati staff to inform the design of a similar initiative for Bodray. Cincinnati staff had no evaluation of the effectiveness of the grant program in increasing diffusion but they were able to provide guidance on how to design and implement the program.

For the districts that we studied, the network of individuals engaged in policy development stretched well beyond the central office organizational chart. While central office staff clearly oversaw policy development processes, the staff continuously sought information from outside their respective division to inform policy.

Interestingly, policy development remained siloed within the central office: Multiple divisions within a central office did not engage in setting policy. However, central office staff reached outside the central office for evidence. School staff, state education agency staff, university staff, and other school district staff were among unofficial actors engaged in policymaking. Inclusion of these unofficial actors temporarily stretched the central office, as an organization, to make policy.

14.6.2 What Role Does Trust Play in the Acquisition and Use of Evidence in District Decision-making?

Similar to findings in earlier research on trust, respondents in our study talked of trust as a useful setting for significant cultural changes in the district. In the context of this study, that cultural shift revolved around the use of research. For example, a district-level administrator in Woodward described the importance of engaging teacher-leaders with recognized content expertise in the policymaking process. These teacher-leaders were, as she described them, the "usual suspects," who routinely participated in district-level activities, which included instructional policymaking. She knew from experience that these teacher-leaders had the content expertise necessary to make appropriate policy, and could back policy proposals with research. In the Bodray School District, however, the administrator in charge of technology policy development was new to the district, and did not trust the capabilities of her staff. She felt that the district had poorly managed technology in the past, and did not trust the de-centralized, yet inclusive, approach to technology adoption. Instead, the district administrator sought ideas and information from her former employer, at the state department of education. She polled school staff to ascertain their level of support for new technology adoption, but did not bring school-level staff—and the specialized information that they hold—to the policymaking table.

The mid-sized districts we studied did not have formal human capital structures in place to access research such as reference or research librarians. In addition, those districts with research departments did not cite them as a resource for access to basic research. However, respondents in all districts talked of access to shared resources such as education news and journal subscriptions, university libraries, and research summaries provided by professional and intermediary organizations. Respondents also reported that their districts provided social groupings and procedures to share information and discuss its merits. In some districts, superintendent cabinets met regularly to consider the direction of district work. Respondents described these groups as think tanks with an open atmosphere for differing opinions and debate. Administrators in one district even reported that in addition to administrative cabinet meetings, district leaders held regular informal "book club" meetings as a format for reading and discussing research.

Beyond the district leadership, all districts used sub-committees to move the work of policy formation and implementation forward. These structures were consistently described as places of relative autonomy. District-level administrators

viewed the sub-committees as commonplace within the district, and standard practice for incubating policy language. All district administrators sought to use sub-committee processes that engendered trust that the resultant polices were compliant with state requirements and sound with respect to available empirical evidence and existing instructional practices. We identified three strategies that assistant superintendents used to build trust within sub-committees and, they hoped, within the district for the new policies. First, the assistant superintendents carefully and repeatedly sought educator input, either by soliciting sub-committee member ideas or by polling district staff, and communicating member ideas or polling results to the general educator population during policy formulation. Second, each assistant superintendent located experts within the district or the state, and engaged them in providing sub-committee members research, practical examples, and policy advice to assure that "… with any decision, we could point to it [the decision] as informed by experts." The assistant superintendents were also careful to position themselves and their staff as sub-committee facilitators, who sought to explain and represent educator perspectives rather than requiring sub-committees adopt language or programs. The purpose, said another assistant superintendent was to "…make them feel like they own it [the program] in the end, because they're going to carry it in the schools." However, in these groupings, respondents talked of time pressures and deadlines as hindering more systematic searches for research evidence. In all of our eight policy cases, workday habits and structures did not provide time for district staff to regularly review research or conduct broad searches for research evidence to inform the work of the sub-committee.

Given these constraints at the working group level, respondents cited the elements of trust as important factors in determining the quality of information that is accessed by committee members. Administrators purposely selected sub-committee members for a reputation as experts in the field or trendsetters on innovation adoption. For examples, Woodward and Kerry district administrators identified sub-committee members for their reputations as competent consumers of research who could be relied upon to bring any important information to the table. Sub-committee selection was painstakingly administered by district-level administrators to assure that the right people were engaged and mitigate risk that the emergent policy may fail when received by the school board or by school-level educators. In three cases, district administrators described sub-committee members as "just a wealth of knowledge," "a reading machine," and as someone who "goes to a lot of meetings and then brings back research." District administrators stated that they did not have time to locate evidence themselves, nor did they have time to facilitate sub-committee consumption and interpretation of evidence. The district administrators relied on sub-committee member reputations to assure policy would be appropriately informed by evidence. In these cases, perceptions about competence played a key role in establishing trust to broker the exchange of information.

In other cases, our respondents also talked about their colleagues' commitment to serving the students, Bryk and Schneider's concept of personal regard, as part of their consideration about sources of information. In all cases, district staff on sub-committees as well as cabinet leaders framed their work on policy formation and

implementation as an effort to improve instruction and learning. In addition to personal regard for the students, respondents in all of our cases talked about their work in the service of teachers and school leaders in terms that conveyed a respect for their school-level colleagues and a commitment to providing services that assists their work—a personal regard for teachers. For example, sub-committee members on the technical tasks often surveyed teachers and actively pursued feedback about technology needs and uses. Respondents often talked of this work as a way to provide better service to the schools emphasizing that the goal of technology adoption was to support instruction. If teachers didn't use a device, the technology wasn't worth pursuing. Sub-committees working on the adaptive tasks were similarly oriented toward serving teachers and providing materials that allowed teachers to use their considerable expertise.

The cases suggest that trust serves as a conduit for evidence exchange in these school districts' instruction policymaking efforts. The assistant superintendents in these school districts were placed in charge of developing sound instructional policies that would be accepted by the school board and school-level educators, and purposely chose to engage individuals that they believed could supply the right evidence for policymaking. As the case examples indicate, information flowed from different sources, from teacher-leaders or state-level staff. A commonality, however, was the trusting relationship between the sender, or provider, of evidence and the receiver. The assistant superintendents or division directors brokered evidence by drawing upon pre-existing, trusting relationships with evidence sources.

In the examples described, trust provided a shortcut to evidence acquisition and use. These sources were often viewed as trustworthy because they met or exceeded the expectations administrators had for their role relationships. When trust relationships followed formal organizational lines, administrators were careful to make use of trusted individuals when assigning additional roles and responsibilities such as participation on task forces. Often, trust relationships crossed formal boundaries and evidence sharing followed these relationships. District administrators sought information from peers in their professional networks and colleagues in partner organizations.

Our findings suggest that the trends apparent in studying school organizations are also apparent in district organizations. First, role relationships act as the basis around which trust is formed. Second, perceptions of respect, competence, and personal regard are important components of trust. Finally, trust facilitates productive work. That is, trust helps make things move in schools *and* districts.

While research on trust in schools has focused mainly on actors within the formal organization, we found that central office practices extend beyond formal boundaries to a broader social network characterized by trusting relationships in an attempt to bring the best possible evidence to the table. The porous boundaries of the district extend into schools, peer networks, state agencies, and model districts. The size and range of the informal network for districts was much larger than what was found in schools, but the function of trust across the network was similar. Although districts had access to federal and state resources that attempted to summarize evidence for policy-maker use, central office staff viewed these resources through the lens of

trusted relationships across this network. If the information travelled through the trusted network, it was not only accessed but often used. However, if the information was provided through an untested source or a source that was viewed as untrustworthy, it was often not accessed at all.

14.7 Implications for Researchers and Practitioners

Our cases demonstrate a lack of time and structure within districts for regular and systematic acquisition of research evidence. In the absence of those organizational supports, district staff often use their perceptions of respect, competence, and personal regard for those within their organization and networks as a shortcut to assess the value of information or potential sources of information. Key internal staff that are frequent consumers of research, participation in peer networks, and adaptation of models from early implementers appear to be the primary sources of evidence for district policymakers. Federal and state efforts to increase the diffusion of research evidence could exploit the use of networks and early implementers as sources of evidence in policymaking. Government-supported dissemination efforts could align with peer networks to supply research evidence through trusted sources. In addition, targeted efforts to identify and partner with early implementers on the piloting of research-based reforms would provide state and federal efforts additional legitimacy while also providing information on implementation challenges.

The field of education research could adapt to these constraints as well. If districts value local information and models of implementation, a more collaborative research model could provide a meeting ground for researchers and practitioners. Proponents of emerging models of collaborative research argue that involving practitioners in the research process has multiple benefits. First, including practitioners on a research team bridges the divide between research and practice, resulting in a greater likelihood that research findings will be applied to practice (Coburn and Stein 2010; Roderick et al. 2009). Second, practitioner involvement in research has been suggested as a way to build capacity to incorporate systematic inquiry into regular decision-making processes within practitioner communities (Bryk et al. 2010a; Roderick et al. 2009).

Finally, collaborative research may also inform the research process and education research itself by bringing together experts from diverse perspectives to engage in problem-solving work so that research and practice become part of an interactive cycle supporting improvement (Bryk and Gomez 2008; Bryk et al. 2010a).

Indeed, increasingly a group of education researchers are voicing concern over the structural division between researchers and practitioners and are looking for new ways to integrate practitioners into the research process (Bryk and Gomez 2008; Bryk et al. 2010a; Burkhardt and Schoenfeld 2003; Coburn and Stein 2010; Committee on a Strategic Education Research Partnership 2003; Hiebert et al. 2002). Collaborative research efforts between researchers and districts based on the Consortium on Chicago School Research model have been spreading with new district

alliances forming in New York, Baltimore, San Francisco, Denver, and Newark among others. The recent awarding of ten new Regional Educational Laboratory contracts by IES signals a federal interest in supporting this type of research. The new contracts, based on each laboratory forming and/or joining research alliances as a context for rigorous analytic work, ensure that millions of federal dollars will be channeled into collaborative research nationwide over the next 5 years.

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Chapter 15
Teachers' Trust in Knowledge Sources for Continuing Professional Development: Investigating Trust and Trustworthiness in School Systems

Wieland Wermke

15.1 Introduction

This chapter examines teachers' perceptions of actors who provide knowledge for teachers' development in the school system. It is argued that teachers' continuing professional development, as research has shown, is not influenced only by the trust climate in the particular workplace, meaning the individual school or school community (Bryk and Schneider 2004; Cosner 2009; Forsyth et al. 2006; Forsyth et al. 2011; Hoy and Tschannen-Moran 1999; Tschannen-Moran 2001; Tschannen-Moran and Hoy 1997; Wahlstrom and Seashore-Louis 2008). In the same vein, teachers operate in their individual schools and are able to establish relations of trust that promote their development and that of their colleagues. They build relations with others who are not related to them directly within the school system. Indeed, teachers' choices of knowledge from outside the school are determined by how trustworthy they judge the sources that offer it to be (Wermke 2012). Teachers simply do not have enough time to properly assess everything available for the improvement of their practice and efficiency, and they therefore trust some institutions rather than others in order to reduce the complexity of the plethora of opportunities. Consequently, the trusted institutions successfully transfer their ideas into the classroom, whereas teachers defend their practice against untrusted sources by literally closing the classroom door. However, this argument implies a perspective that goes beyond an investigation of personal trust relations: trust becomes a social property in the school system. An examination of this notion might contribute to an understanding of how teachers relate to actors other than their colleagues, principals, superintendents and parents. Trust in institutions is seen as a fruitful way of investigating relations in national systems (for example, Braithwaite and Levi 1998b). Moreover, the focus on the school system also points to the *cultural embeddedness* of trust (Welter and Alex 2012), meaning questions about the conditions of trust in different contexts.

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I argue that trust concerns not only the school faculty but also the teaching profession in a national context. Consequently, understanding the effects of the national context is extremely crucial. Investigating trust at the macro level requires us to examine teachers' trust as a collective characteristic of the teaching profession in a particular school system. Moreover, it is necessary to describe the profession's relation to other stakeholders in the system, and to investigate which nation-specific particularities affect the emergence of trust in different school systems. This chapter tackles these issues by reporting on a research study of teachers' perceptions of several sources of knowledge that operate as stakeholders in two nation-specific continuing professional development (CPD) marketplaces (Wermke 2011, 2012; Forsberg and Wermke 2012). Starting from the experience and findings of this study, implications are proposed for future research designs as well as conceptualisations of trust and trustworthiness in different school systems. The project compares the perception of CPD among German and Swedish teachers. A *German-Swedish comparison* is particularly interesting, as, since the beginning of the 1990s, the school governance regimes in both countries have almost been converse. New public management strategies implemented in Sweden at the beginning of the 1990s have now begun to be implemented in Germany in the guise of a 'new steering' (*neue Steuerung*) (Bellmann 2006). On the one hand, 'standards-based reforms' are envisaged to control the schools' output through the setting of standards, evaluation and monitoring. Competition strategies or so-called choice policies are the focus of this approach. This means primarily that *quasi-markets* are established within the educational system, e.g. by shifting from supply to demand financing (Lindensjö and Lundgren 2000). Before this shift, the emphasis in Germany had been on centralised regulation of inputs such as economic resources, detailed curricula and the professionalization of teachers. Furthermore, the actors' relations within the school systems have a different quality. Whereas in Sweden close relationships between educational researchers, policy makers and teachers already exist (Carlgren 2009), in Germany the relationships between these actors are rather loose (Bellmann 2006). The differences between both countries are seen as device, which relates particular differences and similarities to nation-specific structures, and traditions that embed the emergence of trust and trustworthiness culturally (Welter and Alex, 2012). This chapter proposes a comparative case study design (Ragin 1987; Steiner-Khamsi 2004, 2010) that relies on quantitative data on teachers' perceptions. A quantitative approach enables us to make the teaching professions' voices—a collective description—visible by presenting the mean of practices and perceptions among German and Swedish teachers. This might be evidence of a shared culture, from which the individual teacher may nevertheless deviate (Terhart 1987).

I will first present the study and its most relevant findings. Then, I will discuss concepts which may enable the illumination of the cultural embedding of trust in various national contexts. In order to illustrate the applicability of these, key traditions in the German and Swedish school system are presented and discussed.

15.2 Studying Teachers' Professional Culture and the Trustworthiness of Knowledge Sources

15.2.1 Rationale

I have investigated teachers' perceptions of various knowledge sources for their continuing professional development in both Germany and Sweden (Wermke 2011, 2012). On the one hand, both countries offer teachers a many similar opportunities through similar types of actors. On the other, both countries differ regarding school governance and crucial traditions in the school system and the teaching profession. I have argued that these differences also produce diverse relations between teachers and various actors in the school system. A productive way to investigate these relations was to carry out an examination of how teachers perceive actors, who by production and provision of knowledge for teachers' continuing professional development, aim to affect school and teacher work. These are seen as *sources of knowledge* to which teachers have particular relations built on their perception. Consequently, teachers own their development, since they themselves decide which sources they see as appropriate and useful, acting in a CPD marketplace that offers many opportunities for development. The knowledge sources and the teachers constitute the marketplace. The marketplace is regulated by state governance through regulation of the sources which are allowed to offer knowledge and the resources which exist for teachers in order to gain CPD. The marketplace has emerged in and is shaped by its national context. Therefore the contextual particularities, as well as the teaching profession as a collective that seeks to conduct CPD, need to be discussed.

I have argued that there exist a plethora of opportunities in the various nation-specific marketplaces. All of these promise improvement of teachers' practice and thereby increased efficiency and well-being. However, teachers cannot individually assess the actual value of all available opportunities as they simply do not have enough time. Therefore, as I have argued with reference to Luhmann (2000), teachers reduce the complexity of choices they face by distinguishing sources they do and do not trust. Trustworthy sources of knowledge are then able to transfer their knowledge into the classrooms, whereas sources which are not trustworthy remain peripheral. Furthermore, such sources of knowledge are often institutions, and there is often a lack of face-to-face interaction. I have therefore focussed on the trustworthiness of such sources from the teachers' perspective. Teachers judge each source in terms of its offers, but also in terms of its representations, mirroring their attitudes about teachers, teachers' work and development, and earlier experiences with the sources, even in circumstances other than CPD.

I have also argued that although direct interaction with the institutions is not a given, teachers judge these institutions using similar criteria that they would use to judge their colleagues. Several important criteria of discernment are known

to have a positive impact on the development of trust and trustworthiness. From Bryk and Schneider's (2004) concept of relational trust, the criteria of competence, understanding and respect were adopted. After intensive field studies in both countries, prominent sources of knowledge were identified which are valid in both cases (Wermke 2011). Teachers judged universities, institutions of school governance and school administration, unions, textbook publishers, and, although they are indeed not institutions, teachers' colleagues. Furthermore, in the Swedish case there are private professional development companies, while in the German case there are state institutes for teachers' professional development (*Landesinstitute für Schule und Medien, LISUM*). The statements which teachers were asked to weigh were: "The provider of CPD is competent regarding my problems as a teacher as well as school relevant problems", "The provider of CPD understands and has sympathy for my particular problems as a teacher", "The provider of CPD has respect for my work as teacher and my professionality". Teachers answered on a scale between one and four (disagree totally, rather disagree, rather agree, agree totally).

For an understanding of the teaching profession as an actor in the school system, a quantitative approach was seen as necessary. I argued for the existence of a shared culture being a characteristic of the profession in its national context. In the study I called it CPD culture (Wermke 2011), in which certain trust patterns are incorporated (Wermke 2012). I argued that nation-specific cultures, at least as analytical devices, could be understood as an average of the beliefs held by the teaching profession's member, from which the individual teacher indeed can deviate. Such an approach focuses first of all on the national context in which all teachers are embedded and as it can be described in terms of socio-historical particularities. This also implies a limitation regarding its explanation value for trust relations in smaller collectives such as local school communities or schools.

15.2.2 Results

Results showed that German and Swedish teachers differ in their perceptions of most sources, but also exhibit similarities regarding the perceived trustworthiness of their colleagues (Wermke 2011). German teachers are suspicious of knowledge that is not produced by teachers, as illustrated in Fig. 15.1. Textbook publishers and professional development institutes offer knowledge produced by teachers, and German teachers trust these more than universities and knowledge offered by the state. Swedish teachers are overall much more receptive to various school-external knowledge sources. This also indicates that trustworthiness is a significant and relevant predictor of the importance of a knowledge source. The relevance differs significantly between different sources and contexts. For German teachers trustworthiness was of significantly greater value for judging a source's importance (Wermke 2012).[1]

[1] The sample used in Wermke (2011) comprises 199 teachers in Sweden in the metropolitan area of Stockholm and 218 teachers in Germany/Berlin. In Wermke (2012) a sample from a municipality near Stockholm (294) was included.

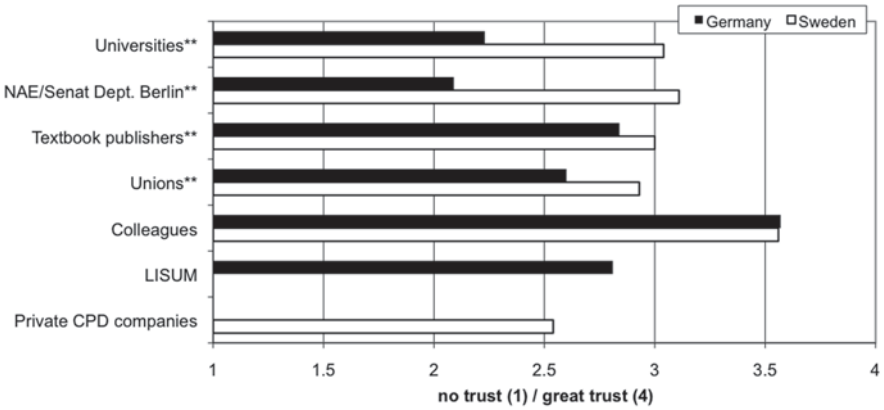

Fig. 15.1 Trust in sources for CPD. (Notes: Derived from Wermke 2011; $^{**}p<0.01$, $^{*}p<0.05$)

However, the design for measuring the trustworthiness of sources was highly exploratory in nature. The data concerns teachers' perceptions in 2008 and 2009. Since this time, it is possible that perceived trustworthiness may have changed in Germany and Sweden as a result of various events and reforms. I aim instead to investigate whether an understanding of trustworthiness on the criterion of relational trust can lead to significant and relevant results. The focus was therefore not a comprehensive description of both cases, but an investigation of perceptions of trustworthiness as a crucial mechanism in teachers' CPD in different national contexts. I see the results as examples of the mechanisms of trust and of the emergence of trustworthiness at a certain point in time in certain national contexts. Consequently, I do not focus on how teachers in Sweden and Germany actually behave, but on possible mechanisms that might produce particular perceptions.

Observing differences in the perceptions of trust in different contexts is only the first step. But differences and similarities described in the first step should be given significance within a conceptual consideration that provides opportunities for asking further questions about trust and trustworthiness as properties of nation-specific school systems. I argue that interpretative approaches must be applied to this end. The term interpretation is, in following Ragin (1987, p. 3), applied here in a restricted sense. "*Often, the term is used to describe a type of social science that is only remotely empirical and concerned primarily with problems of meaning or hermeneutics. [Here] interpretive work is treated as a type of empirical social science: historically oriented interpretive work attempts to account for specific historical outcomes or processes chosen for study because of their significance of current institutional arrangements or for social life in general. Typically, such work seeks to make sense out of different cases by piecing evidence together in a manner sensitive to chronology and by offering limited historical generalizations that are both objectively possible and cognizant of enabling conditions and limiting means—of context*."

In the following sections, I will first discuss in greater depth the comparative method as a productive method of analysing trust as a culturally embedded phenomenon. From this vantage point, I will consider concepts that might help us to understand trust in different school systems in further research designs. Finally, I will illustrate socio-historical reasoning in comparative designs with crucial cultural traditions in Germany and Sweden which might influence the development of trust of the respective teaching profession.

15.3 The Comparative Method

The comparative method will be proposed in order to enable us to understand how trust and trustworthiness emerge and influence other crucial aspects of teachers and teachers' work. The classical definition of comparison as a social scientific method can been found in Durkheim's work at the beginning of the last century [in: Philips (1999), p. 16]: "*We have only one way of demonstrating that one phenomenon is the cause of another. This is to compare the cases where they are both simultaneously present or absent, so as to discover whether the variations they display in these different combinations of circumstances provide evidence that one depends upon the other. When phenomena can be artificially produced at will by the observer, the method is that of experimentation proper. When, on the other hand, the production of facts is something beyond our power to command, and we can only bring together as they have spontaneously produced, the method used is one of indirect experimentation, or the comparative method.*"

This indeed points to a natural science perspective on social science, and therefore promotes an understanding of social science that can be treated as a closed laboratory system. Nevertheless, the act of comparing a case where a certain factor is absent/present with another case where a certain factor is absent/present is a productive starting point for investigating mechanisms which make up a reality. We have only to be aware that possible implications must be assessed consciously. Different mechanisms may reinforce or neutralize each other, and a potential chain of cause and effect may take different forms. In the words of Edgar Morin [in Schriewer (1999), p. 53–54]:

> Like causes can give rise to different and/or divergent effects.
> Different causes can give rise to like effects.
> Minor causes can entail quite major effects.
> Major causes can entail quite minor effects.
> Some causes can give rise to opposite effects.
> The effects of antagonistic causes are uncertain.
> Complex causation is not linear: It is circular and interrelated; cause and effect have lost their substantiality, causes have lost all their pervading power, effects all their embracing dependencies. They are relativized by one another and are transformed each into the other.
> Complex causation is no longer just deterministic or probabilistic, it creates, rather the improbable.

All theories of reality—for example concerning the trustworthiness of a knowledge source—are related to existing observer (in our case teacher) conceptions. The observations made by the observers are "mediated actions" (Wertsch 1991). This view is emphasized by Broadfoot (1999, p. 27–28): "*Individuals construct their personal, and national identities through a stock of narratives which are the result of particular historical and cultural contexts. Such "mediated action" is the product of the interaction of a range of meditational means—cultural tools which both facilitate and constrain how individuals engage with the situation in which they find themselves*".

The concept of mediation is thus substituted by cultural mediation. Teachers' professional culture has emerged historically and is influenced by the national culture. Its shape at a certain point in time can be observed empirically, e.g. as individuals' shared perception of crucial aspects of their environment, such as trustworthiness. Perceived trustworthiness is mediated by the prevalent culture. However, the question remains of how the influence of the national culture and the history of the professional culture can be conceptualised.

Schriewer (1999, p. 58) presents a combined comparative research approach containing "generalisation" and "respecification", which means firstly an "act of establishing general terms and secondly eliminating different alternatives of these in concrete settings". The generalising operation is closely connected to a profound knowledge of the "subject area" of interest—in this case theories of trust and the contexts it takes place in—thereby determining which alternatives are possible, or in other words which options from the general cause-effect chain exist and are able to be investigated. This process is indeed highly theory oriented. The "specificative operation" examines the general relations and possible options in the constraints of the particular context. However, "a conditional analysis of this kind may in turn embrace two perspectives. It can emphasize, firstly, the decisions taken in favour of particular and, by the same token, against other problem solutions it can also focus, then, on the consequences, and follow-up problems resulting from such decisions." (ibid, p. 59). Regarding trust, this process means a consideration of trust in general, then investigating trust in certain contexts that can be contrasted with each other. From this vantage point we can discuss which contextual configurations might lead to various patterns of trust. Here, time as well as space are relevant to our understanding. The investigation of different configurations which lead to different patterns requires a historical perspective (ibid.). This means that the explanation for the particular emergence of certain phenomena should be sought in historical developments which made a particular configuration possible while preventing another (ibid.).

The comparative method is a case-study method which views the entirety of a case and the circumstances of its emergence in certain conditions (Ragin 1987). In fact, only small N comparisons are possible (ibid.). A concentration on complex interrelations in the cases also means that the case-study approach has both a theory building function as well as a theory challenging function. The theories are indeed fallible and are open to be questioned by other studies. The purpose of theory

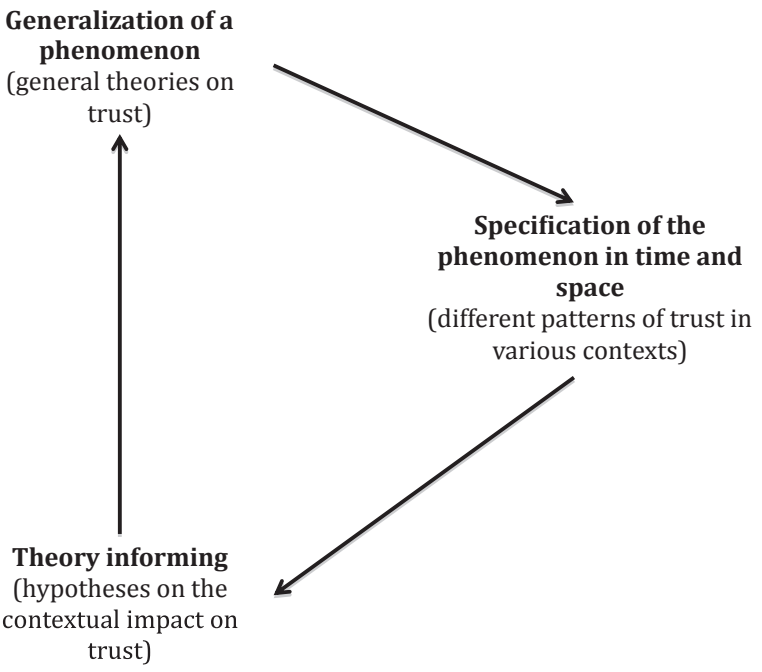

Fig. 15.2 The steps of the comparative method and considering the phenomenon of trust

generation should be stressed in particular, as social science must aim to generalise, i.e. the comparison should aim to be "theory informing" (Broadfoot 1999), which means that from the specification, an advance to the formulation of general terms must be made, at least in the form of formulating hypotheses. These three steps are concluded in Fig. 15.2.

15.4 Comparing Different Trust Patterns

We first consider trust in a general sense. As mentioned above, Bryk and Schneider (2004) as well as other research teams such as Tschannen-Moran and Hoy (1997), Hoy and Tschannen-Moran (1999), Tschannen-Moran (2001) put forward crucial factors for promoting the development of trust or generating trustworthiness. These include, among other things, competence, understanding, integrity and benevolence. As mentioned above, these criteria of discernment are based on previous interactions between two parties. I argue that although trust in institutions might also build on a certain level of interaction with institutions, the perception of trustworthiness is significantly influenced by the national contexts in which teachers are embedded. In the study presented earlier, I was able to observe that Swedish teachers were much more receptive to knowledge from outside the school, whereas German teachers were suspicious of all sources that could not be related to their colleagues. As I

also reported, trustworthiness, as a mixture of perceived competence, understanding and respect, is significantly more relevant for German teachers than for their Swedish colleagues, even if it is also somewhat relevant for the latter. At the same time, Swedish teachers find school-external knowledge sources more trustworthy in general (Wermke 2011). The question, then, is how these differences can be conceptualised with reference to the assumed cultural embeddedness and mediation of trust. Here I propose considerations of different patterns of trust made by Bryk and Schneider (2004).

The authors put forward a conception of *relational trust*, which they define as an organisational property whose constitutive elements are socially defined in the reciprocal exchanges which take place in a (school) community. Relational trust focuses on the dynamic aspects of the many forms of teacher relationships and is based on the social behaviour of people. As social interactions occur, individuals simultaneously pay attention to the behaviour of others, i.e. the outcomes occurring and the observable processes being deployed to advance those outcomes. Here the reciprocal character of trust and trustworthiness is emphasised. This also implies that there are decision-making processes involved that assess the trustworthiness of other parties regarding the above-mentioned criteria of discernment. More trust or trustworthiness is a conscious decision, contrasted by the alternative of not trusting the other party.

However, in their study, Bryk and Schneider (2004) also introduce other forms of trust which may contribute to an understanding of differing cultural trust patterns. On the one hand, they describe *organic trust,* referring to the more or less *unquestioning* beliefs of individuals in the moral authority of a particular social institution. "The school is an integral part of a total institution and is explicitly designed to realize its moral precepts. An extraordinary high level of trustworthiness among individual members characterizes such [a] context" (ibid., p. 17). On the other hand, they identify *contractual trust,* describing very constrained relations with a primary focus on instrumental and material exchange. This sort of trust is very technology-oriented and based on standards that make evaluation possible when a contractual reality is properly executed. In this case contractual trust requires a transparent and some technocratic system of evaluation (ibid.), but involvement in a system that defines (or is assumed to define) actions to be undertaken in relation to resources to obtain, means that trust decisions are not made consciously, either. However, I would also like to emphasize that I find that these forms do not only exist in either or alternations in the different school systems. I argue instead that patterns might exist side by side or in a hybrid form. Moreover, a continuum of different patterns of trust is also conceivable.

The questionnaire study cited does not provide evidence for the existence of different patterns of trust in the two specific cases, but socio-historical analyses and interpretations might. From this vantage point, on the basis of a comparative analysis as described above, I propose that the Swedish case is characterised by both organic and also contractual trust patterns regarding "knowledge from elsewhere". In the German case, teachers might be more likely to build on relational patterns as they are defined by Bryk and Schneider (2004). In following section I will justify this interpretation by the presentation of crucial nation-specific particularities that have

formed the culture of both countries' teaching professions, and which therefore may impact on the development of different forms of trust.

15.4.1 The Case of Germany: Bildung and Didactics

The German teaching profession builds on two crucial traditions: *Bildung* and didactics. They influence the relationship between members of the teaching profession and other actors in the school system. Both factors gave the teaching profession a high degree of autonomy and thereby also the opportunity to relate to other actors about their conditions.

In Germany, that means at least in the biggest and most important state of it, Prussia, at the beginning of the 19th century, the tradition of Bildung was established in secondary schools (*Gymnasien*). Bildung[2] refers to the development of cultural and moral values and the knowledge of the individual. The focus is the particularity (*Eigentümlichkeit*) of the individual's personality as the unique basis of his or her character (Klafki 2000; Lüth 2000). Wilhelm von Humboldt, as the father of the new humanistic Bildung in the Prussian educational system, abandoned the utilitarian ideas about education of the *Enlightenment*. In addition, he pointed to the problems of governing the development of Bildung by the state (Benner 2009). "The state cannot govern Bildung, the economy or morality. State governance would only harm the sensitivity and the inventive power of the individual human being, as well as the morality and the Bildung of the society. In a public educational system, the formation of the human (*Menschwerdung*) should be prioritized over vocational and civic education." (Humboldt in Benner 2009, p. 53, my translation). After the classical and German languages, history, mathematics and geography were emphasized. Such knowledge was expected to empower pupils to participate in the elaboration and maintenance of the national culture (ibid.). Traditionally, in secondary schools these were taught by subject academics. Due to their academic backgrounds in language studies, secondary school teachers in Germany are called philologists (*Philologen*). At universities, teacher education was based at the so-called philological faculties. The focus was only academic subject knowledge as a vehicle for developing pupils' Bildung.

Philologists belonged to the same social class as the pupils they taught and contributed to the reproduction of social conditions. They were higher civil servants and not controlled by a clerical school governing body. Instead they were under the direct jurisdiction of the Prussian state administration. The state formulated the curriculum and certified the teachers' competences through a state exam. Consequently, secondary schools were autonomous organisations where the teaching staff decided which students were accepted for enrolment in the school as well as the organisation and content of the instruction (Tenorth 1996). The described tradition

[2] "Bildung is a noun meaning something like "being educated, educatedness". It also carries the connotation of the word *bilden*, "to form, to shape". Bildung is thus best translated as "formation" and the particular "formedness" that is represented *by* the person." (Westbury 2000), p. 24.

remains to this day. The German teaching profession is characterised by a status of higher civil servants—the same status enjoyed by judges or doctors—and an extensive subject oriented teacher education.

However, didactic[3] traditions in the elementary school teaching profession also contributed to the autonomy of the teaching profession today. In the 19th century, elementary school teachers became professionalized, meaning that they were properly trained in state institutions, detached from clerical school governing bodies and in the end became lower, but still important civil servants in charge of the implementation of the curriculum in elementary schools (*Volksschulen*) (Tenorth 2008). Elementary school teachers were educated in so-called seminars (*Volksschullehrerseminare*) that comprised three years of seminar education and a three year preparation period. This education was regulated by the state and promoted their status and indeed increased the autonomy of the profession. The education of elementary school teachers was based on *didactics*, which implies that professionalisation was accompanied by the development of a common professional language and methodology. Didactics and its role for teachers is related to the particularly Prussian form of school governance that Hopmann (1999) calls *licenssystem*. The Prussian school administration was—as already described for the case of secondary teachers—responsible for the development of the curriculum, and the teachers were responsible for the transfer of the curriculum's content into the pedagogical practice of the classrooms. This form of school governance provided, on the one hand, even the elementary school teachers' profession with extensive autonomy. On the other hand, the Prussian state administration might save resources by not having to control the daily practice of teachers or relying on the clerical administration to do this (Hopmann 1990). This teacher privilege was legitimised through teachers' comprehensive training in the seminars. Didactic reasoning functions as a language which legitimates their practical interpretation of the curriculum (Hopmann 2003). This can be seen as valid for teachers up to today.

Regarding the issue of trust in Germany, the school system builds on the extended autonomy of the teaching profession. This autonomy creates the opportunity to refuse knowledge from outside, and effectively to close off the profession. Teachers defend this autonomy against what they see as intervention. They are suspicious of others who are not teachers. It might be said that teachers *own* the right to trust and mistrust. Trust becomes a relational property that characterises teachers' positive relations to knowledge sources from outside. It must be actively fostered and maintained.

[3] The German and Swedish term *Didaktik* itself is an untranslatable concept. "The most obvious translation of Didaktik, didactics is generally avoided in Anglo-Saxon educational contexts, and refers to practical and methodological problems of mediation and does not aim at being an independent discipline, let alone a scientific or research programme" (Gundem and Hopmann 1998, p. 2). However, the suggestions of Hopmann and Gundem to use Didaktik (in correspondence to Bildung) did not gain general acceptance (Kansanen et al. 2011). Although there are these irregularities in translation, in German and Nordic research the most common English translation of Didaktik is didactics.

15.4.2 The Case of Sweden: Social Engineering, Corporatism, Marketization

In Sweden, other crucial traditions exist that are assumed to support the argument that rather organic and contractual trust patterns are prevalent in their school system. The traditions that might have contributed to more organic trust relation are the phenomena of social engineering and corporatism, whereas contractual factors have shaped the system in the marketization of the Swedish school system since the 1990s.

As I have already mentioned, the Swedish teaching profession is characterised by a closer relation to policy makers and educational researchers, that is, to a very crucial aspect of the Swedish governmental culture: the tradition of social engineering. Social engineering was expected to empower people in controlling their lives and preventing them from ending up in poverty and misery due to poor decisions. For this purpose, the state was required to build a social order which balanced ideal factors and ideal configurations that could always be adjusted to changing expectations emerging from an evolving environment (Etzemüller 2006). Etzemüller (2010) puts forward several key considerations of the phenomena that contribute to an understanding of Swedish school system (p. 422–424):

Framing and *freedom* are central, as freedom without framing threatens the existence of human beings. Freedom of choice must be regulated, and here, (central) *planning* has a crucial role. However, planning does not refer to the formulation of particular norms, but is rather related to dynamic processes which constantly need to be adjusted to a changing reality. For this reason, *social science research* is tremendously important, as the practices of people must be investigated in order to gain a realistic picture of people's lives and their actual deficiencies. Empirical data is not only important for achieving a certain has-to-be status, but also there are multiple favourable modes of being, as a changing society requires different forms of behaviour. Nevertheless, collecting data about the different facets of reality does indeed have a normalizing and somewhat standardizing effect. Frequencies of behaviour represent what is obviously normal and desirable, and how this normality is changing. Normality also constitutes threshold values, beyond which behaviour might be stigmatised as dysfunctional. This is then the foundation of the organisation of society through rationality. Scientific methods generate a set of possibilities that enable and empower normal, meaning *rational*, behaviour.

Planning and scientific methods as the basis for society formation require *experts* to carry out such processes. The system also builds on self-education. In democratic study circles and universities, people discuss and thereby adapt to changes, and the people in such settings affirm expert reasoning. This democratic bargaining around knowledge incorporates resistance and critique into consensus making. Consequently, people are objects of the system, but at the same time also subjects contributing to the construction of it. Their requirements are the basis for planning, but they have to learn to "want in the right way" (Etzemüller 2010. p. 424). The development of this process must be documented as extensively as possible in order to have arguments and information available to assist in making the "right" decision.

Such traditions of social engineering can be related to the issue of trust as follows: in the Swedish system, a culture of rationality has been established and rationality has become a somewhat moral imperative. Consequently, the teaching profession does not question external knowledge provided by the state or by research when it is produced under legitimised circumstances. Swedish teachers are more receptive to knowledge from sources other than their colleagues; the relations of teachers to others are more organic.

Furthermore, cooperative modes of developing and working are much more organic in the Swedish context. This is supported by another particularity of the Swedish system. The culture of corporatism, built on consensus seeking with other actors, aimed at the most rational outcome for all parties. Social engineering was successful in Sweden because the society is built on corporative self-governance. Social engineering was also compatible with corporative capitalism. Rothstein (1992) describes the Swedish system as built on a *corporative model* consisting of different groups of interests that are engaged in policy making within the state. These all are part of the state and of policy making. The basis of this is the continual bargaining of different interest groups with each other and consequently, all important decisions are made by consensus. This model is distinguished from both a legal bureaucratic model and a professional model. The former builds on state civil servants that act according to rules. It is hierarchical and lacks flexibility but is transparent due to its fixed rules. The latter is a model in which professionals with particular competences and rights are responsible for conflicts and insecurities occurring in the society (ibid.).

In a corporative system, individuals must on the one hand be incorporated into organisations in order to participate in political decision-making (ibid.). On the other hand, they are also supposed to elect politicians who, although they are actually stakeholders, act as referees in the bargaining process as well as being stakeholders. Rothstein calls this a parliamentarily governed institutionalisation of social conflicts that streamline conflicts into different forms of cooperation (ibid. p. 74). Social engineering and corporative consensus-building on the basis of research have generated a different culture than is evident in the German context, where teachers are instead socialised into autonomous and highly entrusted bureaucrats or professionals. Cooperation and trust in scientific methods creates an environment of organic trust in knowledge from outside the school and sources of knowledge that can legitimise themselves in terms of rationality and consensus.

However, I argue that in the last 20 years, organic trust has also been accompanied by contractual trust. Since the 1990s, the Swedish school system has undergone a tremendous marketization. The school system—and this also includes teachers' CPD—has been opened to market influences. The system is governed by goals and results that are established by the state and tested by national curriculum tests. The schools have many ways of achieving their goals and results. Parents and pupils decide independently where to commence or continue education, while the state can promote this freedom of choice by distributing vouchers to every pupil. These vouchers can be "redeemed" at the selected school. Consequently, the schools are financed in relation to the number of pupils enrolled. A pupil's move from one

school to another therefore means financial gain for the new school, and a loss for the old one, and the loss of pupils may threaten the existence of a school. Moreover the characters of all stakeholders, including teachers and principals, are being transformed (Norén 2003). They are required to represent their school in a competition with other schools, and since the pupils' vouchers are valid for the same amount in private as public schools and there are opportunities to run profit-oriented schools, competition has increased, particularly in urban areas. Competition means that the schools with the best representations attract the highest number of pupils and are thereby able to meet the challenges of the school market (ibid.). The strongest arguments are pupils' results, shown in NCTs and in the assessment of teachers.

Today, the marketplace's logic is superior in the Swedish case. This means that *making a profit or not making a profit* (Luhmann 1997) rather than pedagogical reasoning becomes the guiding principle. Relations in the school system are reduced to the accountability of results that in turn ensure a school's survival. Teachers are contractors who have to fulfil their contracts, which means a particular group of pupils achieving a certain standard which is defined by others. Trust between teachers and others becomes rather contractual. Regarding teachers' CPD, this means that those sources which contribute or promise to contribute to the fulfilment of the contract (however it appears) are deemed to be trustworthy. Moreover, teachers now bargain over their salary individually with the principal and are dependent on the individual schools' market-related situation (Norén 2003).

In conclusion, Swedish teachers work in a culture that builds on trust patterns different from those of their German colleagues. Certain traditions and different regimes of governance frame teachers' relations to sources of knowledge in different ways. This study's findings might be understood in such contexts. Trust and trustworthiness are important in both countries, but the reasons behind them and the criteria on which they are established differ. The Swedish case builds on a culture of cooperation on the basis of a moral imperative of rationalism. Competence, understanding and respect are assumed and organic, and the possible absence of those in the case of (state-)legitimated knowledge is not even considered. The marketization that has taken place over the last 20 years and the establishment of contractual trust patterns illustrate that new patterns of trust in national contexts can emerge through historical development. However, teachers remain rather open and receptive. This decreases transaction costs, but also jeopardizes the profession occupied by people other than teachers.

Through the traditions of *Bildung* and didactics, German teachers define themselves as more independent from other actors. I argue that they defend this independence through closing themselves off against other actors. This also means that the profession owns the right to choose knowledge from outside by trusting or mistrusting sources. Competence, understanding and respect are questioned and assessed. If this is not assumed as given, knowledge from elsewhere is seen as a threat to their territory. A higher level of mistrust in the school system requires a greater trustworthiness of external sources in order to open the borders of the profession. Transaction costs might increase, but the teachers have a greater chance to own their profession.

15.5 Conclusion

I understand the cultural embeddedness of trust from sociological research (Welter and Alex 2012; Lyon et al. 2012). The idea is that while trust serves similar functions, it can take different forms. These forms and their emergence might be explained by contrasting them in comparative designs that build on an extensive case study which brings teachers' collective voices to light. Quantitative methods remain of high value. Trust in institutions which act as sources of knowledge cannot be investigated as a product of face-to-face interaction, therefore I proposed to investigate the trustworthiness of these from the teachers' perspective. Furthermore, I suggested that while discussing trustworthiness, conceptions of investigating trust in school communities remain very useful. I proposed an application of Bryk and Schneider's (2004) different forms or patterns of trust which might explain different patterns of trust in different national contexts. Relational trust implies some risk but also entails the possibility of self-determination based on one's own personal responsibility, while contractual and organic trust are either more technical respective unquestioned in nature. The results of the presented study show that trustworthiness, as a scale of perceived competence, understanding and respect, produces relevant and significant results. It was also observed that there are differences between Sweden and Germany: Swedish teachers were much more receptive than their German colleagues, but for Germans the trustworthiness of a source was a more relevant predictor in assessing the importance of sources of knowledge for their CPD. These differences are explained by socio-historical particularities of the compared cases in relation to Bryk and Schneider (2004) three forms of trust.

Regarding this distinction, the development of trust in institutions in Sweden is built more on organic and contractual trust patterns. Institutions offering knowledge for teachers' CPD are rarely questioned. The first pattern is related to a history of social engineering and a belief in the high value of rationally produced knowledge. Interpreted positively, the Swedish system is characterised by a greater willingness of teachers to trust different sources of knowledge. This has changed with marketization reforms in Sweden: systems of accountability generate a climate of trust that is rather more technical. Nevertheless, I argue that both patterns exist today as hybrids. In the German case, the governance relates more to the responsibility of teachers. This is a result of the historically more autonomous role of teachers, based on the Bildung tradition of the teaching profession and the role of didactics. The distance from other actors is important, and therefore teachers are suspicious towards knowledge from elsewhere. Trust in Germany must be accumulated relationally and is neither organic nor contractual. Trustworthiness based on competence, understanding and respect of sources is questioned in Germany, and organic/moral or contractual/technical trust patterns are rarely found.

Research on governance and trust supports the existence of different trust patterns in different systems and distinguishes for example between a rational and communal trust (Braithwaite and Levi 1998a). Regarding the first, individuals are assumed to be rational, and trust relates first of all to their self-interest. Here,

trust builds on *"beliefs about the trusted, and likely outcomes from the trusting relationship. Its sources include familiarity, reliable information, generalizations based on experience with similar actors, on-going interactions, and confidence to the constraints provided by institutions."* (ibid. p. 376). The latter, communal trust, is described as the motivation of people to trust without deliberation over possible outcomes. It comprises social-emotional ties, which create "collective identity, engages citizens in the community, facilitate cooperation, and engenders a willingness to forgo self-interest." (ibid.). From this perspective, organic trust can be seen as communal trust and perceived as a positive value in a system. It is, however, also somewhat dangerous, as can be seen in the Swedish case (Wermke 2011). Contractual trust is thus also rational, but in quite an extreme way, as performance and price, sanctions when trust is breached, and control mechanism are precisely defined, facilitating rational reasoning or rendering it once more beyond question. A moral imperative is replaced by a contractual one, and this need not always fit the reality of the schools (Norén 2003). Relational trust is also rational but incurs greater transaction costs. Trust is less a moral benefit, and is more bound to the self-interest of the profession, which can result in suspicion, as the German case shows (ibid.). However, this also protects it from interventions which might jeopardize the profession. I am not valuing the different patterns against each other: they are not proposed as normative, but as analytic categories that can exist side by side or be understood as points on a continuum.

In conclusion, trust in education—independent in schools, school communities or school systems—is embedded in nation-specific cultures and traditions, and is mediated by them. This produces different trust patterns in which teachers are socialised. However, while the study presented was highly exploratory in nature, it may nevertheless show the fruitfulness of investigations in comparative studies of trust in school systems and trust in institutions. Proposals for conceptualisations were made and further investigations regarding the different forms of trust should investigate such relations with more complex instruments and with larger samples in these particular cases as well as in other national context.

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