THE EFFECTS OF SCHOOL STRUCTURE AND

TRUST ON COLLECTIVE TEACHER

EFFICACY

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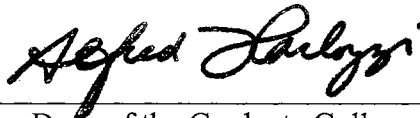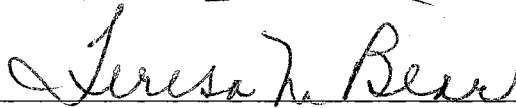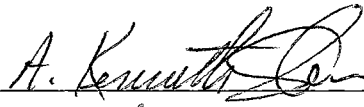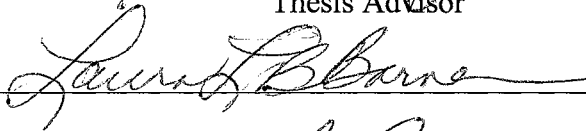The University of Tulsa
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CHAPTER I

INTRODUCTION

In the era of accountability, educators frequently search for ways to enhance student academic achievement. While many policy makers espouse the benefits of using accountability standards and "high stakes" standardized testing to improve student achievement, they often overlook the effect a school's normative and contextual environment has on student academic performance. The educational literature promulgates several environmental variables that influence academic achievement in schools. Collective efficacy, conceptualized as a teacher's belief in the capabilities of the collective faculty to positively affect student learning, is one of these variables. Recent empirical studies indicate that collective efficacy is positively associated with, as well as predicts, student academic achievement in schools (Bandura, 1993; Goddard, 2003; Goddard, Hoy, & Woolfolk Hoy, 2001; Smith, Hoy, & Sweetland, 2002). Since empirical studies have found that teachers' perceptions of collective efficacy within a school influence academic achievement, and since these findings hold true across school level and school type, it is important for research to identify environmental characteristics within schools that enhance the presence of collective efficacy.

Two concepts empirically identified as influencing the normative and contextual environment of schools are trust and school structure (Hoy, Sabo, & Barnes, 1996; Hoy & Sweetland, 2000, 2001; Smith, Hoy, & Sweetland, 2001; Tarter, Sabo, & Hoy, 1995). Hoy (2002), in his review of school structure literature notes the ambivalent effect of structure on perceptions of a school climate. A school's structure can either positively or

negatively affect teachers' attitudes toward the school environment. For this reason, educators must discern ways to use structural elements to create effective school environments, as opposed to allowing structures to foster conflict, alienation, or rigidity. Similar to school structure, the presence of trust among stakeholders within the school also influences school climate. Existing evidence indicates that faculty trust is associated with healthy school climates (Smith, Hoy, & Sweetland, 2001;Tarter, Sabo, & Hoy, 1995), teacher efficacy (Hoy & Tschannen-Moran, 1999), collegial leadership (Tschannen-Moran & Hoy, 1997), and enabling school structures (Hoy & Sweetland, 2000, 2001). Furthermore, faculty trust also predicts student achievement (Goddard, Tschannen-Moran, & Hoy, 2001), school effectiveness (Tarter, Sabo, & Hoy, 1995), and collaboration (Tschannen-Moran, 2001). While school structure and trust may promote a healthy climate in schools, their effect on collective efficacy is not known.

Problem Statement

Researchers have extensively examined the concept of teacher efficacy; however, collective teacher efficacy is a relatively new construct conceptualized by Bandura (1993) and recently operationalized as a school level measurement by Goddard, Hoy, and Woolfolk Hoy (2000). Collective teacher efficacy is an extension of individual teacher efficacy, but instead of measuring an individual teacher's perception of his/her own efficaciousness, it identifies individual perceptions of the faculty's collective efficaciousness. Prior to Goddard, Hoy, and Woolfolk Hoy's development of the collective teacher efficacy scale, researchers examining antecedents and effects of efficacy at the school level aggregated individual perceptions of teaching efficacy to

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obtain a school score. Aggregating perceptions of individual efficacy, however, does not account for efficacy of the collective. For this reason, the collective teacher efficacy scale was developed. Employing this new scale, studies discovered that collective teacher efficacy and teacher efficacy are theoretically and empirically interrelated concepts (Goddard & Goddard, 2001), and that collective teacher efficacy predicts academic achievement in schools (Goddard, Hoy, & Woolfolk Hoy, 2000; Smith, Hoy, & Sweetland, 2002). Furthermore, recent studies found that prior academic achievement, socioeconomic status (Goddard, Hoy, & LoGerfo, 2003), teacher ownership in the direction of the school, and school cohesion (Ross, Hogaboam-Gray, & Gray, 2003) are predictors of collective teacher efficacy.

While the above studies highlight the effects of collective teacher efficacy on academic achievement, as well as certain antecedents to its formation, they do not analyze the extent to which contextual and normative constructs, such as trust and school structure, influence collective teacher efficacy. The empirical investigation on the concepts of school structure, trust, and efficacy, as well as the theory underlying these concepts, suggest the plausibility that cause and effect relationships exist among these concepts. The possibility of these relationships, however, has not been tested empirically.

Purpose of the Study

Existing evidence supports the importance of creating social norms that foster collective teacher efficacy within schools. Findings from these studies are significant because they illustrate the influence of normative and contextual school environments on student achievement. The foundation of a school's contextual environment is its

structure, and an essential feature of social norms within an organization is trust. For this reason, this study analyzed the relationship among school structure, trust, and collective teacher efficacy. Specifically, the purpose of the study was to illustrate why school structure should be conceptualized and operationalized according to Hoy and Sweetland's (2000,2001) enabling school structure concept; to contribute to the trust literature by discovering the causes and consequences of parent trust of school and internal dimensions of trust; and to enhance the knowledge base of collective teacher efficacy by discovering additional antecedents to its formation.

Limitations

All research involves compromise. The present study was no exception to this aphorism. The first compromise involved the random sample of 79 schools from the public school population in the Northeast quadrant of Oklahoma. This sample was representative of the public school population in Oklahoma, but schools across the country might not possess the same characteristics of the majority of schools in the sample. Thus, the external validity of this study needs to be considered. A sample size of 79 schools also delimited the analytical design. Path analysis using ordinary least squares multiple regression was used to assess the direct effects of the predictor variables on the criterion variables within the hypothesized model. Path analysis is limited in its ability to measure overall model fit, to assess nonrecursive models (reciprocal), to compare competing models, and to account for measurement error. Structural Equation Modeling (SEM) is a more powerful parametric technique to use for examining the above properties within a conceptual model, but a sample size larger than 79 schools is needed

for SEM analyses. Finally, low instrument return rates for parents within a few schools

made it difficult to capture a total parental perception of the school's trustworthiness.

CHAPTER II

REVIEW OF THE LITERATURE

The conceptual framework underlying this investigation into the relationship of school structure, trust, and collective efficacy, is embedded in bureaucracy theory, trust theory, social cognitive theory, and locus of control theory. Bureaucracy theory was used to understand the structural characteristics of schools, as well as to argue for the use of the enabling school structure concept and measurement to conceptually define and operationalize school structure. Trust theory was used to examine the conceptual definition of trust, to understand trust formation, and to explicate its importance in organizations. Social cognitive and locus of control theory were used to demonstrate the evolution and development of the collective teacher efficacy construct. The combination of these theories and existing research findings on the three concepts formed the foundation for the rationale and hypotheses guiding the empirical investigation.

School Structure

Schools are bureaucratic organizations. The bureaucratic structure embedded within schools and school districts developed during the 1920's when professional administrators started implementing scientific management principles to govern schools. The foundation established by these scientific principles formed an inexorable governance structure that has remained intact throughout the 20th century and into the 21st century despite many strident calls for change. Yet today, schools must operate bureaucratically due to the complexity of school organizations, the voluminous federal and state mandates, the diverse student needs, and the central role of education in

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American society. In fact, the classical bureaucratic characteristics introduced by Max Weber form the modern structure of schools. These characteristics include rules and regulations, a hierarchical control system, a codified management system, a division of labor, technical competence, and impersonality (Earle & Kruse, 1999).

Division of Labor/Technical Competence

The division of labor within schools became more pervasive with the shift to age-graded classrooms, as well as the proliferation of school populations (Tyack & Cuban, 1994). As a result of the myriad demands placed on public schools, modern schools are divided among instructional elements, administrative responsibilities, and student services. Even within these broad divisions, job responsibilities are separated by roles. For example, teachers are specialists within a particular subject and/or grade; administrators hold responsibilities such as curriculum, discipline, facilities, and personnel; and student services consist of counseling/guidance, library/media/technical assistance, special education, and other programs designed to accommodate the needs of students. A division of responsibilities is necessary for schools to perform the numerous tasks required of them.

Many reform initiatives seek to reduce the division of labor within schools by increasing collaboration among stakeholders (, Fullan, 1997,1998; Kohn, 2000; Lane & Walberg, 1989; Senge, 2000;), by becoming "generalists first and specialists second" (Sizer, 1989, p.3), or by reconstructing governance strategies (Botstien, 1997; Comer, 1998; Sarason, 1997). These reforms attempt to minimize hindering elements within schools, but they cannot eliminate the division of labor, nor would they want to. Diverse

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roles and responsibilities are necessary in order to deal with federal, state, and local mandates, as well as societal issues pervasive within schools.

Hierarchy of Control

Intertwined with the division of labor is the hierarchical control structure of schools. Mintzberg's illustration of the internal and external influencers of an organization depicts the control structure within schools (see Figure 6-2 of Mintzberg, 1989, p.100). The "internal coalition" of schools consists of the school board, the superintendent, principals, teachers, support staff, and technostructure. Surrounding the internal coalition is the ideology of the organization, its beliefs and culture. In addition to the "internal coalition," schools also have external forces that influence policies. These forces consist of politicians, parents, community leaders, and businesses (Mintzberg, 1990). The shape of this structure varies depending upon the methods of control exerted within school districts.

In a highly centralized system, decisions trickle down from what Mintzberg (1990) calls the "strategic apex" (central administration), to the "middle line" (principals) and finally to the "operating core" (teachers). This categorization depicts a top-down, vertically controlled structure. Even school systems that espouse a decentralized structure maintain a hierarchy of control. The major difference between a centralized and decentralized model relates to the level of decision-making (Herman & Herman, 1993), not a change in the authority structure. In other words, central administrators still oversee principals and principals still oversee the operation of schools. This trend is likely to continue as administrative staffs increase in size. Data from the National Center for Education Statistics (2000) indicate that central administration staff increased from

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82,998 in 1995 to 87,677 in 1998, and the number of principals and assistant principals increased from 120,629 in 1995 to 129,278 in 1998. During the same time period the average school population remained constant (525 students/school in 1995 and 524 students/school in 1998). The increase in administrative staff solidifies the control system, as well as the division of labor within schools.

Rules and Regulations

The rules and regulations guiding school governance contribute to the existing division of labor and hierarchy of control within schools. These rules and regulations establish the foundation of school policy. As previously stated, schools must follow regulations manifested within federal, state, and local policy. Federal rules primarily pertain to funding, program monitoring, and student assessment within schools. These programs include special education, Title I and Title III of the Elementary and Secondary Education Act, Title IX, and desegregation concerns (Campbell, Cunningham, Nystrand, & Usdan, 1989), as well as the recently passed No Child Left Behind Act. At the state level, rules and regulations become more complex. Campbell et.al. identify four categories of state involvement: instructional program, certification of personnel, facility standards, and financial support (1989). A category of general operations and administration (Bimber, 1994) could also be added to the list. On top of these regulations, local districts and individual schools establish rules of operation. The confluence of the rules and regulations at the national, state, district, and site level is intended to produce equality within the educational environment.

Professional licensure is one area in which rules and regulations dominate educational policy in public schools. Generally, teachers, administrators, counselors,

librarians, and other staff members must be licensed by the state in which they work. Licensure requires thorough training and specialization within a particular content area. Weber believed that specialized training provided the most efficient method of task accomplishment (Earle & Kruse, 1999). It is believed that specialized study and training in a specific content area enables the development of a more proficient and efficient learning environment. For this reason, licensure policies in most states require a certain level of education, specialized study within a particular content area, certification examinations, professional development requirements, and yearly or bi-yearly evaluations.

Impersonal/Codified Management System

Weber (1947) viewed an impersonal orientation within an organization as an asset that bases decision-making on general rules and written standards, instead of on subjective feelings. According to Weber (1947), judicious organizations remove affective elements from administrative decisions by confining policies to set rules and regulations. These written codes exist within all governing elements of schools, creating layers of written standards for districts, schools, teachers, administrators, students, and parents to follow. Examples include federal laws and guidelines regarding Title I money and special education, state laws regarding curriculum and certification issues, district policies pertaining to pupil control and employee contracts, student and parent handbooks at the school level, teacher handbooks that delineate teacher responsibilities, and teacher syllabi at the classroom level. As with the goals of the other bureaucratic features, an impersonal environment and a codified management system strives to foster efficiency and equality within the educational process.

Reformers, such as Sizer, Sergiovani, Levine, Eubanks, Gardner, Coleman, Kohn, and many others challenge impersonal conditions by changing the traditional relationships within schools. These relationships consist of interactions among students, teachers, parents, administrators, and community leaders, as well as educational practices, pedagogies, and students. Despite the efforts of reformers and local school personnel to change the learning environment, impersonal conditions will continue to persist as long as federal and state policies continue to standardize educational practices.

Over time, the aforementioned bureaucratic elements established the foundational structure of schools, which has remained intact throughout the political, social, and economic changes of the 20th Century. More recently, however, calls for reforms in public education have centered on reducing the hindering effects of bureaucracy by providing more direct control to local school sites. Despite the calls for change, classical bureaucratic features will continue to persist within schools. For this reason, the focus of reform should center on identifying methods for removing hindering bureaucratic elements and cultivating enabling structures.

Alternative Theories to Understand School Organizations

Even though schools are bureaucratic, bureaucracy theory is not the only conceptual framework used to analyze school structures. Many researchers have used systems theory and leadership theory as two conceptual frameworks to define the organizational structures of schools. Leadership theory has been used to explain how school leaders can transform school environments and school culture (Fullan, 1997; Surgiovanni, 1992, 1994), whereas social systems theory examines the patterns of behavior among different elements within a school (Hoy & Miskel, 1996).

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These theories provide a lens for the explication of the differences in school structures. Using this lens, however, focuses inquiry on the leader of the school or the diverse facets of the social system, as opposed to the school structure itself. For example Parson's (1958) theory of organizational systems suggests that schools function at three levels: the technical level, the managerial level, and the institutional level. Analyzing the organizational system involves examining the interaction of all three social levels, as opposed to centering inquiry on structural elements within the school. Systems theory and leadership theory do provide a theoretical rationale for differences among school organizational structures; however, using these frameworks often marginalizes the intricacies of school structures (Mintzberg, 1989), such as the classical characteristics of bureaucracies that all schools possess. This begs the question: How can a conceptual framework of bureaucracy theory be used to identify differences in school structure? One method is to examine how schools differ in their bureaucratic configuration.

Richard Hall (1999) writes, "All organizations have characteristics that allow them to be considered as one type of social phenomenon" (p.26). Despite the commonalities of organizations, organizational structures differ based on distinct and individual characteristics. Mintzberg's (1989) theory of organizational configurations illustrates how coordinating mechanisms, design parameters, age and size, technology, environment, and power all contribute to differences between organizations. For instance, an Entrepreneurial Configuration maintains a distinct coordination and control system from an Innovative Configuration. An Entrepreneurial Configuration operates through direct supervision, a strategic apex, and vertical and horizontal centralization; whereas, an Innovative Configuration operates through mutual adjustment, support staff,

and selected decentralization (Mintzberg, 1989). Both configurations exist within a bureaucratic framework; however, their operational methodology differs. Applying this concept to school systems helps explain why public schools differ within and between districts.

Conceptualizing the complexity of school systems helps to understand how bureaucratic structures differ within schools. A theory-laden illustration of the complexity of school systems focuses on the diverse division of tasks, a hierarchical supervision and authority structure, and intraorganizational variation (Hall, 1990). In addition, school populations and community populations differ; therefore, schools must establish policies that address the individual needs of stakeholders within the school. For example, a vocational school will structure policy, divide tasks, establish rules, and govern differently than a college preparatory school. Also, a high school within a predominantly Hispanic community will have a different organizational climate than a suburban high school within an affluent district. Factors such as school size, grade level, population, type of school, community demographics, leadership, etc. influence the bureaucratic characteristics of schools. Regardless of these diverse characteristics, all schools still operate within a bureaucratic system.

A Bureaucratic Measure of School Structure

Decentralization is a frequently used concept to define bureaucratic characteristics within schools (Ziebarth, 1999). Murphy (1994) notes that decentralization is commonly conceptualized as the devolution of decision-making authority from centralized administrators to local stakeholders. Murphy's definition provides a clear conceptual framework for understanding decentralization. Operationally, however, decentralization

is more equivocal because of the different types of decentralization strategies implemented in schools and school districts, as well as the different ways to measure its effects. Bimber (1994) claims that decentralization can be categorized as being internal or external, as well as political or administrative. Moreover, decentralization may only affect various domains within schools: budget, personnel, curriculum and instruction, goals, or organizational structure (Murphy, 1994). The diverse implications of decentralized policies in schools confound the practical understanding and implications of the concept, as well as its operationalization.

The most extensively researched decentralization policy is School-Based Management (SBM) (Murphy, 1994). The extent of the existing research is promulgated through Leithwood and Menzies (1998) review of 83 SBM studies from 1985 to 1995. In addition, the Education Commission of the States (1998) claims that SBM is the longest standing governance reform movement. Herman and Herman (1993) note that the decade of reform (1983-1990) ushered in the modern SBM movement. During this time, states and school districts started transferring more decision-making authority and autonomy to local school communities. Under SBM policies, schools and their constituents procured more control over local school governance and administrative issues. The task force on School-Based Management (American Association of School Administrators, 1988) indicated that local control should always remain at the core of the SBM movement. In essence, SBM policies were designed to empower parents, students, teachers, and community leaders to become more actively involved in school decision-making.

Conceptually, SBM as a decentralization strategy makes sense; however, operationally SBM has been plagued by divergent definitions and ineffective practices.

According to Lindquist (1989) the different descriptions, as well as policies, creates a nebulous understanding of SBM. When referring to the different terminology within the literature, Kolsti (1991) writes, "School districts, scholars, and legislators repeat these various terms, but few state clearly what they mean or what they expect... how their use of these terms may differ from that intended by previous literature" (p.1). Herman and Herman (1993) illustrate the ambiguity within the literature by describing 19 different descriptions of SBM. Hatry, Morley, Ashford, and Wyatt (1993) write, "Each school district we examined has its own version of school-based management" (p.4). The literature suggests that a standard definition of SBM does not exist even though it is frequently referred to as a decentralized strategy for many schools and school districts.

Not only does SBM lack a uniform operational definition, it also does not accurately measure how school structure influences organizational climate. Leithwood and Menzies (1998) research illustrates the problem of using SBM to characterize a school governance structure. They use Murphy and Beck's (1995) forms of SBM (administrative control, professional control, community control, and equal control) to study the variation of effects within and between different types of SBM. Their findings reveal inconclusive evidence supporting the positive effects of SBM on decentralizing schools. Generally, schools that implement community and professional control exhibit more collaboration within schools; however, schools that operate from an administrative framework still maintain hierarchical and centralized control. In these cases, administrators control the policy and decision-making within schools. Problems of decentralization still exist within schools that operate from a community or professional framework. For instance, Malen and Ogawa (1991) found that in spite of the espoused

policy of teacher and parent participation in decision-making, administrators still maintained authority and control over decisions. Even if collaboration increases, SBM cannot measure the level of influence over decision-making (Tschannen-Moran, 2001). In addition, Leithwood and Menzies (1998) research reveals little about the effects of SBM on other bureaucratic elements. For example, how does it affect rules and regulations, the division of labor, task specialization, and management style within schools?

As a reform strategy, SBM may decentralize school governance by shifting decision-making from central administrations to local schools and stakeholders; however, using SBM to measure a school's structure creates a false illusion of the bureaucratic elements within schools. SBM by itself does not necessarily change the traditional structure of schools (Firestone, 1990; Fullan, 1994; Goodland, 1992; Wohlsetter, Smyer, & Mohrman, 1994), nor has it been used to measure stakeholders' perception of the school bureaucratic structure. Investigating the effect of school structure on the organizational climate of schools requires a rich description of the influence of bureaucratic elements on the school environment. SBM does not provide this opulent description.

Enabling School Structure

Contrary to SBM, the concept of enabling school structure analyzes how schools operate within the elements of bureaucracy. This construct derives from the work of Adler and Borys (1996), Adlar (1999), and Hoy and Sweetland (2000, 2001). Enabling school structure was developed to measure stakeholders' perceptions of the bureaucratic characteristics of the organizations. In their review of existing literature, Adler and

Borys discovered that workers were ambivalent toward bureaucratic characteristics within and between organizations. Bureaucratic features tended to either alienate workers or lead to greater job satisfaction (Adler, 1999; see also Arches, 1991; Hoy, Blazovsky, & Newland, 1983; Kakabadse, 1986; Verdugo, Richard, & Greenberg, 1992; Johnson & Landman, 2000). This consternation impelled Adler and Borys to investigate how the two central characteristics of bureaucracy, formalization and centralization, influenced an individual's perception of an organization's working climate.

Formalization refers to the rules, regulations, and procedures that guide behavior within an organization, whereas centralization pertains to the hierarchy that controls decision-making within an organization (Adler & Borys, 1996). Depending on an individual's position and the manner of enforcement, employees will view formalization and centralization as either coercive or enabling (Adler & Borys, 1996). A coercive formalization forces subordinates to comply with rules, regulations, and procedures. These policies often force rigid compliance to standardized regulations, which often impede problem solving and innovation within an organization. Unlike a coercive formalization, an enabling formalization encourages adaptability within the organization by instituting flexible guidelines that allow for professional autonomy, collaboration, and problem solving. A hierarchy that is coercive centralizes decision-making and professional judgment to a cadre of administrators at the top of the organization. The decisions made at the top then trickle down to other stakeholders within the organization. An enabling hierarchy, on the other hand, establishes working relationships across labor divisions (Hoy & Sweetland, 2000) and encourages joint decision-making throughout the organization. These concepts are the fulcrum of a school's bureaucratic type.

Formalization and centralization provide the foundation for a bureaucratic

structure. From these elements, Hoy and Sweetland (2000) conceptualize school

bureaucracy as consisting of four types: enabling, rule-bound, hierarchical, and hindering.

An enabling bureaucracy consists of enabling formalization and centralization structures.

Conversely, a hindering bureaucracy maintains coercive formalization and hindering

centralization structures. The independence of formalization and centralization creates

either a hierarchical or a rule-bound bureaucracy. A hierarchical bureaucracy has an

enabling formalization and hindering centralization, whereas a rule-bound bureaucracy

has a coercive formalization and enabling centralization. From this conceptualization,

Hoy and Sweetland empirically tested the enabling school structure construct through

four different studies (2000, 2001). Their results indicate that, "Enabling bureaucracy ...

is a valid and reliable measure that assesses bureaucracy along an enabling-hindering

continuum" (p.538). By using the concept of enabling school structure, school

governance can be empirically examined through a conceptual and operational

framework that addresses key elements of a bureaucratic organization.

The genesis of enabling school structure as a concept to measure bureaucratic

features of schools will allow researchers studying schools to better understand the causes

and effects of enabling structures within schools. Past constructs, mainly

SBM/decentralization, minimize the complexity of school environments by centering

inquiry on one element. This approach avoids what Mintzberg terms the interconnected

parts of an organization, as well as the internal and external influencers (1989). Enabling

school structure, however, addresses these relationships by focusing on the essential

elements of a classical bureaucracy: formalization and centralization. Initial research

using enabling school structure as a definition and measure of a school's bureaucracy indicate that enabling school structure is significantly and positively related to internal trust in a school. Further, enabling school structure is negatively and significantly related to truth spinning, role conflict, and powerlessness in schools (Hoy & Sweetland, 2000; Hoy & Sweetland, 2001). These empirical findings lend support for using enabling school structure as a variable to measure the effect of bureaucratic elements on the normative environment of schools.

Trust

Trust is such a prevalent, yet tacit, phenomenon that it is hard to define its meaning as well as to understand its importance within organizations. When writing about trust, Baier (1986) states that we "notice it as we notice air, only when it becomes scarce or polluted" (p.234). The importance of trust would not be discerned unless there was reason not to trust. In other words, "trust" becomes a concern for many organizations when the consequences of distrust begin to affect the working environment of the organization. Public education is currently experiencing the reality of the above phenomenon by recognizing the importance of trust only as a consequence of the saliency of distrust. Conspicuous indications of declining trust in public schools include recent federal mandates for increased high stakes testing and accountability standards, the increasing popularity of home schooling, the germination of charter schools, the proliferation of lawsuits filed against schools and school districts, and the takeover of public school districts by cities and states. Deborah Meier (2002) writes, "The dominant American attitude toward school these days...is a fundamentally new level of distrust"

(p.2).   Since the phenomenon of trust has been seemingly catapulted to the forefront of

public education, it is necessary to use theory and research to understand its meaning, its

importance, and its effect on schools.

Definition of Trust

Social phenomena are often difficult to conceptualize as well as to measure, and

such is the case with trust.   The abstractness of trust has led to inconsistent and

ambiguous conceptual definitions (Barber, 1983).   Some researchers have defined trust as

"confidence that one will find what is desired from another, rather than what is feared"

(Deutsch, 1973, p.148), or as "the subjective probability with which an agent assesses

that another agent or group of agents will perform a particular action" (Gambetta, 1988,

p. 217), or as "a type of expectation that alleviates the fear that one's exchange partner

will act opportunistically" (Bradach & Eccles, 1989, p.104).   Mishra (1996) notes that

early empirical definitions of trust are vague, unidimensional, and difficult to distinguish

from other constructs.   More recent research, however, has defined trust as a much more

complex phenomenon involving multiple dimensions and facets (Bromiley & Comings,

1996; Butler, 1991; Goddard, Tschannen-Moran, & Hoy, 2000; Hoy & Sweetland, 2000,

2001; Hoy & Tschannen-Moran, 1999; Tschannen-Moran & Hoy, 1998; Tschannen-

Moran & Hoy, 1999; Mishra, 1996).

The early definitions of trust provide the foundation by which the contemporary,

more multidimensional definitions of trust derive.   Important early concepts associated

with trust, such as expectancy (Rotter, 1967), confidence (Coleman, 1990; Kee & Knox,

1970), risk (Coleman, 1990; Deutsch, 1958), and vulnerability (Baier, 1994; Coleman

1990) exist within the more recent empirical definitions.   For example, the seminal

empirical study over trust in the context of school environments (Hoy & Kupersmith, 1985) used Rotter's (1967) definition to define trust " as an expectancy held by an individual or a group that the word, promise, and written or oral statement of another individual, group, or organization can be relied on" (p. 444). Hoy and colleagues continued to use this definition for subsequent studies that examined the causes of trust in the principal and trust in colleagues (Hoy, Sabo, & Barnes 1996; Tarter, Sabo, & Hoy 1995). Mishira's definition, however, transcended the conceptualization of trust from a generalized unidimensional construct to one that incorporated common concepts found in the extant literature, as well as in his own interview data. Mishira 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" (1996, p. 265).

Within the context of Mishira's definition, Tschannen-Moran and Hoy (1999) note that interdependent relationships provide the impetus for trust; without interdependence there is no need for trust. Interdependence forces an individual or group to become vulnerable by relying on the behavior and/or actions of another party. Vulnerability increases the probability that an individual or group's potential loss in a relationship may be greater than the possible gain. Moorum, Zaltman, & Deshpande (1992) write, "Without vulnerability, trust is unnecessary because outcomes are inconsequential for the trustor" (p.82). The absence of vulnerability removes the element of risk from decision-making. Without risk, decisions are a matter of logical and rational choices (Luhman, 1979). Trust, however, will not occur without the confidence or belief in the face of risk that the possible outcome of the transaction will produce

positive results (Tschannen-Moran & Hoy, 1999). Thus, the willingness to trust depends on the vulnerability, risk, and confidence in the interrelationship between two parties.

Building on Mishira's definition of trust, Hoy and Tschannen-Moran (1999) extended the "facets" of trust to include "honesty" and replaced "concerned" with "benevolence." They write, "Honesty speaks to character, integrity, and authenticity" (Hoy & Tschannen-Moran, 1999, p. 188), which increases a party's willingness to trust. Hoy and Tschannen-Moran also state, "The most common facet of trust is a sense of benevolence, the confidence that one's well being or something one cares about will be protected by the trusted person or group" (p.187). Expanding their definition of trust to state, "Trust is 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). Hoy and colleagues constructed and empirically tested a trust scale to measure internal trust within a school. This definition and instrument has been used to establish a consistent line of inquiry into the nature, causes, and consequences of internal dimensions of trust, teacher trust of colleagues, teacher trust of the principal, and teacher trust of clients (Goddard, Tschannen-Moran, & Hoy, 2000; Hoy & Sweetland, 2000, 2001; Hoy & Tschannen-Moran, 1999; Tschannen-Moran, 2001; Tschannen-Moran & Hoy, 1998).

Importance of Trust

In *The Problem of Trust*, Adam Seligman (1997) explores the important role of trust in the formation of a civil society. He cites Locke, Hume, Adam Smith, and Kant as early philosophers who recognized the influence of trust on the cultivation of social order. These writers stressed the significance of interconnectedness within society in

order to create social harmony, and without trust interdependence cannot occur. Similar

to these early philosophers, Seligman also recognizes the necessity of trust for modern

society. He states,

> The emphasis in modern societies on consensus, the ideology of pragmatism,
>
> problem solving, and technocratic expertise, as well as conflict management are
>
> all founded on an image of society based on interconnected networks of trust
>
> among citizens, families, voluntary organizations, religious denominations, and
>
> civic associations (p.14).

If trust, Seligman argues, is the foundation by which people and institutions are

interconnected within society, how does trust affect the intraworkings and effectiveness

of organizations?

Several organizational studies highlight the causes, consequences and effects of

trust within organizations. Tyler and Kramer (1996) claim that in order to examine trust

within organizations one must understand how trust functions at the macro, meso, and

micro levels. A macro level analysis explores the effect of organizational structure on

trust, a meso level involves the social networks within the organization, and a micro level

explores the reasons why people trust. Tyler and Kramer's multilevel description of trust

in organizations emphasizes the importance for trust to permeate throughout the entire

organization, as opposed to being encapsulated at one level. A pervasive trust, similar to

oil for an engine, ensures that all levels of an organization work collectively and

collaboratively to insure efficient operation.

Understanding the importance of trust among all levels of an organization

requires knowledge about the structure and purpose of the organization. Creed and Miles

(1996) note that the success of a network organization, one characterized by an interconnectedness of internal and external stakeholders, depends on the level of cooperation, communication, and collaboration among internal stakeholders, as well as external stakeholders. Therefore, trust provides not only a foundation for effective interdependent relationships within the organization, but also among external constituents of the organization. Just as trust acts as an antecedent for interdependent relationships, collaborative relationships also increase the level of trust within an organization. Powell (1996) discovered that the absence of collaboration, internal and external communication, long-term relationships, reciprocity, and common visions minimized the presence of trust; similarly, a lack of trust also reduced the occurrence of the above elements.

Up to this point, the literature has illustrated the tacit power of trust for fostering effective communication and cooperation among all stakeholders within an organization. The aforementioned literature has not focused on trust formation. Social psychological theory, however, provides a framework for understanding trust development at the micro, or personal, level of an organization. Several writers within the field of social psychology define trust in terms of expectations, outcomes, risks, and transactions (Coleman, 1990; Deutsch, 1958; Lewis & Weigert, 1985). Lewicki and Bunker (1996) use this terminology and the work of Kahnemann, Knetsch, & Thaler (1986) to conceptualize three stages of trust manifested within the professional relationships of organizations: calculation-based trust, knowledge-based trust, and identity-based trust.

The three stages of trust promulgated by Lewicki and Bunker (1996) illustrate the evolution of trust in professional relationships. As professional relationships grow, individuals move from calculation-based trust, to knowledge-based trust, to

identification-based trust. The development of a trusting relationship depends on successful interactions during the first stage. If both parties calculate that the benefit of future interaction exceeds the benefit of violating trust then the relationship can move forward. On the other hand, if trust is violated at this early stage then the progression of a trusting relationship will not advance to subsequent stages unless both parties commit to repairing the broken trust. As trusting interactions increase, so does the familiarity of each individual's behavior in the relationships. Thus, the expectation as the other as trustworthy is predicated on positive experiences throughout the relationship. Over time, the knowledge of the other as being trustworthy and the further development of the relationship lead to a mutual understanding of the other's actions, behavior, interests, concerns, needs, and preferences.

Lewicki and Bunker (1996) use the metaphor of "harmonizing" to describe this last stage of trust. They write,

> The parties learn how to use their voices to sing in harmony that is integrated and complex. Each knows the others' range and pitch, each knows when to lead and follow, each knows how to play off the others to maximize their strengths, compensate for the others' weaknesses, and create a joint product that is much greater than the sum of its parts (p. 123-124).

While the other stages of trust increase interdependency within the organization, identification-based trust fosters independence by trusting that one party can act for the benefit of the other while knowing that the interests of the other will be met (Sheppard & Tuchinsky, 1996). This level of trust increases the effectiveness and efficiency of an organization; however, a great investment on the part of individuals within the

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organization is necessary to move an organization from calculation-based trust to identity-based trust.

Ideally, organizational climates dependent on interaction, cooperation, and collaboration should strive to cultivate identity-based trust. Interpersonal trust at this level unites stakeholders around a common identity, provides autonomy for workers, decreases alienation, establishes a shared interest between internal and external stakeholders, and enhances the efficiency of the organization (Sheppard & Tuchinsky, 1996). Realistically, however, establishing identity-based trusting relationships is a difficult and often non-linear process that takes time, energy, and commitment from the entire organization (Lewicki & Bunker, 1996; Sheppard & Tuchinsky, 1996). Not recognizing the importance of trust formation or not instituting preemptive policies to prevent distrust can be detrimental to an organization.

The literature provides a very comprehensive understanding about the negative effect of distrust. As a result of distrust, the transaction costs, or the operating costs for the organization, will significantly increase (Fukuyama, 1995). Organizations will spend more time, money, and resources dealing with the pejorative climate cultivated through distrust. Sitkin and Stickel's case study of a corporate research laboratory found that scientists' distrust of management resulted in a loose coupling of goals, ambiguous job requirements, a perception of disidentification with the organization, a value incongruence between managers and researchers, and a standardized, routinized work environment (1996). Lewicki and Bunker write, "Trust is central to relationships. It is the glue that holds most cooperative relationships together. Hence, a major violation of trust is not simply an isolated interpersonal event; rather, it is a significant event that is

likely to have impact on the parties and on the relationships" (p.129, 1996). The impact of distrust can lead to worker alienation (Fuller, 1996), costly protection against disloyalty (Tyler & Kramer, 1996), employee deception (Bartolme, 1989), decreased collaboration, and a proliferation in structured control mechanisms (Sitkin & Stickel, 1996). All of these outcomes detract from organizational objectives by requiring valuable resources and time to be reallocated in order to repair broken trust, even when trust repair may not be possible (Lewicki and Bunker, 1996).

Robert Putnam (2000) in *Bowling Alone* documents the consequences of declining social trust within society. Putnam juxtaposes graphs that show a correlation between the decline of perceived trust from 1960 – 1999 with an increase in crime, policing and law enforcement between these same years. Moreover, throughout his book he uses data and other graphs to indicate the salient decline of social activity within communities. Putnam postulates that social trust cultivates more civic minded, productive, benevolent, and engaged individuals. Without trust, societies and organizations must rely on other mechanisms to regulate and control behavior. Diego Gambetta states, "Societies which rely heavily on the use of force are likely to be less efficient, more costly, and more unpleasant than those where trust is maintained by other means" (p.136 see Putnam). Extending this thought to schools suggests that schools lacking in trust might be more standardized and rigid, follow a custodial pupil control ideology, implement zero tolerance policies, employ armed police guards, and lack the social capital to foster a learning climate.

Trust in Schools

The organizational literature clearly illustrates the positive effect of trust on causing healthy and productive normative environments within business organizations. As with business organizations, schools possess similar working dynamics that require interconnected relationships between internal and external stakeholders. Internal relationships within schools involve students, teachers, administrators, and other faculty members; whereas external relationships encompass parents, community leaders, businesses, politicians, and the general public. In order for schools to be successful, these diverse and often competing stakeholders must work together towards a common vision of education. Creating a common vision of education involves time, strategy, dialogue, commitment, teamwork, and shared responsibility among all stakeholders (Senge, 2000). The process of forming a shared vision through the cultivation of interdependent relationships within the school community cannot occur without trust. Organizational theory suggests that the presence of trust within the internal and external school environment acts as an antecedent to the formation of effective interdependent relationships within school communities. Studies of internal dimensions of trust in schools support this extrapolation of trust theory to schools; however, studies have not examined the effects, as well as the causes, of external trust.

The extant trust literature of schools has examined the dynamics of internal dimensions of trust, namely trust between teachers, teacher trust in the principal, and teacher trust in clients (students and parents) (Hoy, Sabo, & Barnes, 1996; Hoy, Tarter & Witoskie, 1992; Hoy & Tschannen-Moran, 1999; Tarter, Sabo, & Hoy, 1995; Tschannen-Moran, 2001). Existing evidence identifies several critical climatic features of schools

that cause trust among teachers, as well as trust in principals. The seminal exploration of trust in schools by Hoy and Kupersmith (1985) found that faculty trust in the principal and faculty trust in colleagues at the secondary level is related to authentic principal behavior. Subsequent studies over faculty trust in the principal at the secondary level also conclude that trust in the principal is associated with a supportive leadership style (Tarter, 1989; Tarter, Sabo, & Hoy, 1996). Further, healthy interpersonal relationships among principals and teachers, as well as a principal's openness with teachers produce confidence and trust in the principal (Hoy, Sabo, & Barnes, 1996). Tschannen-Moran and Hoy (1997) found that in addition to openness and supportive principal leadership, a collegial climate of teacher professionalism and leader authenticity also engenders faculty trust in the principal. The same climate characteristics (openness, authenticity, healthy interpersonal relationships, and collegiality) that cultivate faculty trust in the principal also produce faculty trust in colleagues.

Supportive principal leadership, in addition to fostering teacher trust in the principal, also has a causal relationship with teacher trust in colleagues within middle schools. Further, teacher trust of colleagues is also a function of faculty collegiality, defined as open professional dialogue among faculty members (Tarter, Sabo, & Hoy, 1996). Teacher professionalism and teacher authenticity, as well as academic emphasis and teacher affiliation are additional variables that influence trust in colleagues (Hoy, Sabo, & Barnes, 1996; Tschannen-Moran & Hoy, 1997;). These results, concerning teacher trust in the principal and teacher trust in colleagues, support the broader theoretical framework that indicates trust is a consequence of open communication, supportive behaviors, collaboration, and positive interactions. In other words, a

normative climate centered on positive interdependent relationships produce internal features of trust within schools.

In addition to the above concepts, trust is also a function of school size, student stability, student achievement, a democratic climate, and collaboration (Bryke & Schnider, 1996; Nordgren, 1998; Tschannen-Moran, 2000). Bryke and Schnider's (1996) research on the Chicago Public Schools found greater relational trust among administrators, teachers, and parents in elementary schools with fewer than 350 students. Furthermore, they also found that student stability and average school achievement were predictors of relational trust between teachers and parents. Tschannen-Moran (2001) found that a reciprocal relationship between trust and collaboration is plausible. This finding implies that trust between teachers, principals, and clients increases collaboration in schools and collaboration also fosters trust. Nordgren's (1999) case study of two Swedish schools revealed that student and teacher participation in a democratic governance structure produced a climate of mutual respect, responsibility, and trust between teachers and students. These studies, as a whole, demonstrate that healthy school climates characterized by open communication, positive interpersonal relationships, professionalism, cooperation, and collaboration enhance trust among teachers and administrators.

Up to this point, the literature review has primarily centered on variables that have an effect on teacher trust formation within schools. An additional dimension within the trust literature, however, is the effect of teacher trust on schools. Consistent with organizational theory, internal trust influences climatic variables, such as collaboration (Tschannen-Moran, 2001), involvement (Young, 1998), commitment to success,

orientation toward innovation (Bryk & Schneider, 1996), and the organizational health of the school (Smith, Hoy, & Sweetland, 2001). In addition, trust also influences student performance. Teacher trust of teaching colleagues and teacher trust of principal directly effect school effectiveness (Hoy, Tarter, & Witoskie, 1992; Tarter, Sabo, & Hoy, 1996), whereas teacher trust of clients (students and parents) influences student academic achievement (Goddard, Tschannen-Moran, & Hoy, 2001).

The aforementioned trust studies, as a whole, propagate useful knowledge about the function of trust in schools. However, the line of inquiry into the causes and consequences of trust in schools is still relatively young. Studies have not examined the influence of trust among external stakeholders, namely parents. Moreover, only a modicum of studies have examined the effect of trust on educational outcomes, as well as variables demonstrated to influence student and school performance. With evidence of growing distrust in public education, increased lawsuits, an increase in home schooling, and voucher plans, now is the time to further investigate the causes and effects of trust among all stakeholders within school communities.

Collective Teacher Efficacy

The concept of collective teacher efficacy evolves from the theoretical framework of teacher efficacy. Despite the significant contribution of teacher efficacy studies to education, the concept of efficacy has been the subject of much debate. Divergent definitions, theories, measures, and methods for studying teacher efficacy have created confusion within the research (Tschannen-Moran, Wolfolk, & Hoy, 1998). Part of the confusion centers on the lack of clarity for measuring teacher efficacy. Tschannen-

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Moran, Wolfolk, and Hoy's (1998) comprehensive review of teacher efficacy literature produced a new model for the measurement of teacher efficacy. They define teacher efficacy as "the teacher's belief in his or her capability to organize and execute courses of action required to successfully accomplish a specific teaching task in a particular context" (p.233). Using this integrated definition, as well as Bandura's (1977) social cognitive theory, Goddard, Hoy, and Woolfolk Hoy (2000) tested a new meaning and measure of efficacy, a teacher's perception of the collective efficacy within a school.

History of Teacher Efficacy

Tschennan-Moran, Woolfolk Hoy, and Hoy's (1998) aforementioned definition of teacher efficacy intertwines the two conceptual foundations of efficacy beliefs: Rotter's (1966) locus of control theory and Bandura's (1977) social cognitive theory. Teacher efficacy viewed from a locus of control theory involves the expectancy of reinforcing teaching actions. A teacher with internal locus of control believes that reinforcement of instruction rests within the control of the teacher, whereas a teacher with external locus of control believes that reinforcement of teaching is beyond the teacher's control. From Rotter's locus of control theory, researchers associated with the RAND Corporation constructed a two item measurement of general teaching efficacy and personal teaching efficacy (Ross, 1994). The sum of responses from these two questions operationalized teacher efficacy. The RAND instrument, as well as Rotter's locus of control theory, provided the early foundation for the measure of teacher efficacy. From this foundation, several researchers advanced the study of teacher efficacy to include new conceptual and operational definitions.

A second approach to teacher efficacy originated with Albert Bandura's social cognitive theory. According to Bandura, humans function through a "triadic reciprocality" of behavior, cognitive and personal factors, and environmental effects (1986). Human action and thought are viewed as products of personal capabilities and environmental stimuli. Self-efficacy, as defined by Bandura, correlates with his concept of "triadic reciprocality." He writes,

> Efficacy in dealing with ones environment . . . is not simply a matter of knowing what to do nor is it a fixed act that one does or does not have in ones behavioral repertoire . . . Rather efficacy involves a generative capability in which cognitive, social, and behavioral sub-skills must be organized into integrated courses of action (1986, p. 39).

Generative capability is a function of an individual's confidence that his/her competencies can execute a course of action that produces an intended outcome. Without confidence, skills and abilities become useless.

Generative capability is only the means for producing positive efficacy, it is not the end result or outcome; however, the outcome can influence the generative capability of a person. Bandura (1996) terms this the outcome expectancy and writes, "Perceived self-efficacy is a judgment of one's capability to accomplish a certain level of performance, whereas an outcome expectation is a judgment of the likely consequence such behavior will produce" (p.391). For example, a high school teacher who perceives that she possesses the knowledge, experience, personality, and energy to make learning happen in the classroom is making a judgment about her efficaciousness. The teacher's confidence in her competencies does not produce the desired outcome, but instead it is a

factor that allows her to perform the tasks and actions needed to accomplish the intended outcome. In this case, the intended outcomes might be that students will comprehend the subject matter, perform well on tests, be inspired to learn, develop the knowledge and competencies to be successful, or be prepared for the "real world." Many variables beyond the control of the teacher will affect the actual outcomes of students. Thus, self efficacy is the means to produce an anticipated outcome, not the outcome itself (Bandura, 1986).

A key distinction between Bandura's social cognitive theory and Rotter's locus of control theory is the concept of outcome expectation. According to social cognitive theory, self-efficacy involves an individual's perception of his/her ability to produce a given outcome. However, locus of control theory postulates that efficacy is a person's belief about whether or not actions affect outcomes. The key distinction is between the word "produce" and "affect." In locus of control theory, the outcome is the nucleus, while confidence in one's ability as the means for producing outcomes is the core of Bandura's self-efficacy theory. Gibson and Dembo (1984) attempted to blend these two theories with the development of their teacher efficacy scale. Their two-factor scale measured personal teaching efficacy (the perception that a teacher can produce a positive effect) and general teaching efficacy (the general expectancy or outcome of teaching). The Gibson and Dembo scale stimulated interest in the instrumentation for measuring teacher efficacy, a movement centered on developing or modifying instruments to reflect the two factors.

Tschannen-Moran, Woolfolk Hoy, and Hoy (1998) used Gibson and Dembo's constructs of personal teaching efficacy and general teaching efficacy, as well as the

existing efficacy literature, to create an integrated definition of teacher efficacy. Their integrated model focuses on the teaching task and its context, as well as self-perceptions of teaching competence. Self-perceptions of teaching competence measures a teacher's competencies, abilities, aptitudes, and personality against his or her personal deficiencies. Tschannen-Moran, Woolfolk Hoy, and Hoy suggest that self-perceptions of teaching competence are formed in accordance with Bandura's (1986) four sources of self-efficacy information: mastery experience, vicarious experience, verbal persuasion, and psychological state. The teaching task factor in Tschannen-Moran, Woolfolk Hoy, and Hoy's model, while similar to general teaching efficacy, incorporates deeper discernment about contextual factors affecting teaching outcome. They state, "GTE is a measure of optimism about the abilities of teachers in general to cope with adverse circumstances," whereas an analysis of the teaching task " produces inferences about the difficulty of the task and what it would take for a person to be successful in this context" (p.231).

The Gibson and Dembo (1984) scale and the integrated conceptualization of teacher efficacy by Tschennan-Moran, et al. (1998) established the foundation for Goddard, Hoy, and Woolfolk Hoy's (2000) conceptualization of collective teacher efficacy. Collective efficacy, as opposed to individual efficacy, measures a teacher's beliefs about the tasks of teaching as well as the faculty's teaching competencies at the school level. For example, collective efficacy for the task of teaching is how teachers in the school view the learning environment, such as availability of resources, condition of physical structure, class size, student backgrounds, etc. Collective efficacy for teaching competence is a measure of the teachers' perceptions of colleague and student competence. Goddard, Woolfolk Hoy, and Hoy (2000) write, "Collective efficacy is a

construct measuring teachers' beliefs about the collective (not individual) capability of a faculty to influence student achievement; it refers to the perceptions of teachers that the efforts of the faculty of a school will have a positive effect on student achievement" (p. 496). Thus, collective efficacy measures the collective perception of a school's ability to produce an outcome. It is not an outcome-based measure.

Bandura's (1993) seminal collective teacher efficacy study found that collective teacher efficacy is a better predictor of academic achievement within a school than socio-economic status. The problem with Bandura's study, however, was his operationalization of collective teacher efficacy. In order to obtain a school level measure, Bandura aggregated individual teacher efficacy to the school level. This method of producing a school level score still maintains the ideographic nature of teacher efficacy. Collective teacher efficacy, however, is a nomothetic construct. Thus, aggregating teacher efficacy to the school level only produces an average individual efficacy score, while a normative perception of the faculty is needed for a collective teacher efficacy measure. For this reason, Goddard, Hoy and Woolfolk Hoy's (2000) Collective Efficacy Scale provides a better measure than a teacher efficacy scale for the construct of collective teacher efficacy.

Recent empirical studies employing the Collective Efficacy Scale discovered that collective teacher efficacy is associated with and predicts student academic achievement (Goddard, Hoy, & Woolfolk Hoy, 2000; Goddard, Hoy, LoGerfo, 2003; Smith, Sweetland, & Hoy, 2002). Coupling these studies with Bandura's early work of collective teacher efficacy indicates that collective teacher efficacy predicts student achievement across school levels (elementary, middle, and high schools), school

demographics (urban, rural, and suburban), and measures of student achievement (norm referenced tests, criterion tests, and different subject tests). Furthermore, research has identified prior academic achievement, socioeconomic status, school cohesion, and teacher ownership of school process to be predictors of collective teacher efficacy (Goddard, Hoy, & LoGerfo, 2003; Ross, Hogaboam-Gray, & Gray, 2003). More research, however, is needed to identify antecedents of collective teacher efficacy within the contextual and normative environment of schools.

A Theoretical and Empirical Rationale

Even though collective teacher efficacy, trust, and enabling school structure have not been empirically studied together, theoretical knowledge, as well as existing empirical studies over the individual concepts, provides a rationale for exploring the relationship between these three variables. According to Bandura's (1986) social cognitive theory, efficacy beliefs result from the interconnectedness of human agency and efficacy information. Human agency is the human capacity to act, while efficacy information is the cognitive processing of this action through four sources of information: mastery experience, vicarious experience, social persuasion, and affective states. In addition, Tschannen-Moran, Woolfolk Hoy and Hoy (1998) argue that teacher efficacy also includes perceptions of the teaching task and the environmental context of this task. Theoretically, an increase in the four sources of efficacy information, as well as a school climate that supports the teaching tasks and its context, should cause an increase in teacher efficacy.

Results from teacher efficacy studies support the above argument. Structural variables that support risk taking and innovation cultivate a community learning environment, increase organizational commitment, and create professional development opportunities (Hoy & Fergurson, 1985; Reames & Spencer, 1998; Rosenholtz, 1989). Furthermore, teacher efficacy was positively associated with teacher empowerment, as well as variables that foster effective classroom instruction (Moore & Esselman, 1994). The contextual and structural variables related to teacher efficacy are also characteristics of an enabling school structure. Hoy and Sweetland (2001) note that enabling school structures "invite interactive dialogue, view problems as opportunities, foster trust, value differences, [and] capitalize on and learn from mistakes" (p.298). Hindering structures, on the other hand, "frustrate two-way communication, are autocratic, see problems as obstacles, foster distrust, demand consensus, suspect differences, punish mistakes, and fear the unexpected" (p.298). From the theoretical underpinnings of enabling school structure, we learn that a more enabling structure fosters greater levels of teacher efficacy in schools. Extrapolating the results from teacher efficacy studies suggests that characteristics of an enabling school structure should also influence a faculty's collective efficaciousness.

Similar to the effects of school structure on organizational climate, studies of internal trust report significant and positive relationships between trust and openness, trust and collaboration, trust and professionalism, trust and collegiality, trust and supportive leadership behavior, and trust and authenticity within the school environment (Tarter, 1989; Tarter, Sabo, & Hoy, 1995; Hoy, Sabo, & Barnes, 1996; Tschannen-Moran & Hoy, 1997; Tschannen-Moran, 2001). Existing evidence indicates that many of the

above variables also have a direct effect on teacher efficacy (Hoy, Tarter, & Bliss, 1989; Hoy, & Woolfolk, 1993; Rosenholtz, 1998). Moreover, trust in the principal, trust in colleagues, and trust in clients are positively related to teacher efficacy (Hoy & Tschannen-Moran, 1999). Extending these findings to collective efficacy would suggest that the above climatic variables, as well as trust, are positively associated with a teacher's perception of the faculty's ability to produce positive results. Empirical studies, however, have not examined the relationship between trust and collective efficacy.

The current study seeks to enhance the knowledge base on collective teacher efficacy by identifying its causes within schools. This study is based on existing evidence that trust and enabling structure are constructs that contribute to an effective school climate (Hoy, Sabo, & Barnes, 1996; Hoy & Sweetland, 2000, 2001; Hoy & Tschannen-Moran, 1999; Tarter, 1989; Tarter, Sabo, & Hoy, 1995; Tschannen-Moran, 2001; Tschannen-Moran & Hoy, 1997). If the effects of trust and enabling structure are consistent with other findings, the results will hold theoretical and practical importance. Administrators desiring to cultivate collective efficacy will better understand how a trust environment and collective teacher efficacy can be cultivated within the school. Moreover, researchers will better understand the causal relationships among climatic and normative variables within schools.

CHAPTER III

RATIONALE AND HYPOTHESES

Figure 1 presents the conceptual model of the hypothesized relationships among trust variables, school structure, collective teacher efficacy, and contextual school variables (socioeconomic status, school level, and school performance). Existing theoretical knowledge, as well as empirical evidence, supported the formation of the direct and indirect relationships existing within the model. This model is a just-identified model, meaning that every identified cause is postulated to have an effect (Cohen & Cohen, 1983). The specific locus of inquiry for this research was on the direct effects of the predictor variable enabling school structure on the criterion variables of teacher trust of teacher, teacher trust of principal, teacher trust of clients, and parent trust of school, as well as the direct effects of the trust variables (acting as predictors), on collective teacher efficacy. Furthermore, since the extant literature promulgates the effect of contextual school variables, such as socioeconomic status, school level, and prior school performance on trust and collective teacher efficacy, these variables were also included in the model. Although the indirect effects and the overall model fit are important, the hypotheses guiding this research specifically pertain to the direct effects of the predictor variables on the endogenous variables. The ensuing discourse presents the theoretical and empirical rationale underlying the hypothesized direct relationships in the model.

Figure 1: Conceptual Model of the Hypothesized Relationships

e

Socioeconomic
Status
(SES)

School level
(Schllev)

Enabling School
Structure
(ESS)

Prior School
Performance
(API)

Parent Trust
of School
(PTS)

Teacher
Trust of
Clients
(TTC)

Teacher
Trust of
Teachers
(TTT)

Teacher
Trust of
Principal
(TTP)

Collective
Teacher
Efficacy
(CTE)

e

e

e
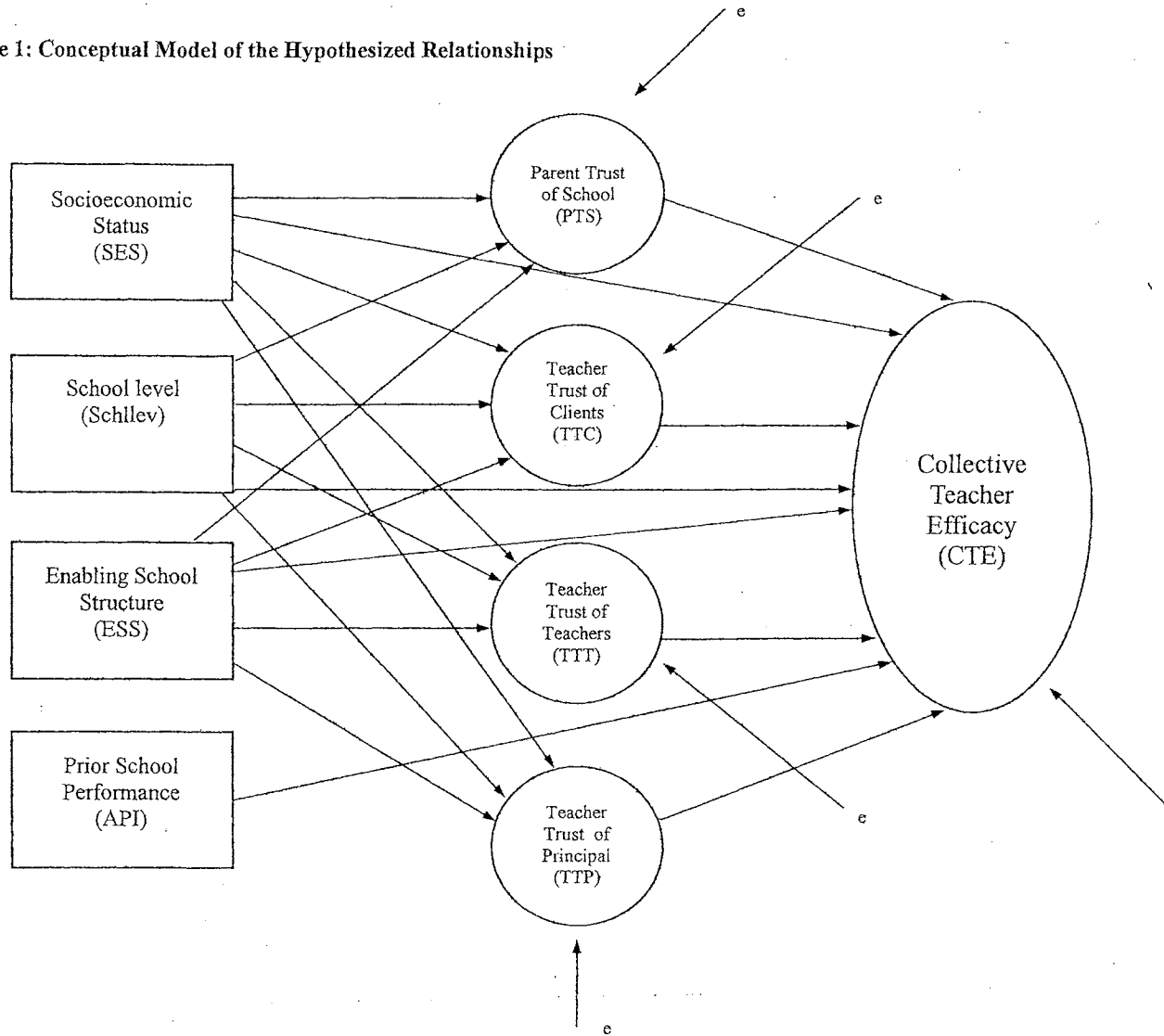
Several social scientists note the importance of trust for fostering positive and interdependent relationships within society, as well as within organizations. The positive effect of trust and the pejorative effects of distruct are well documented in the social science literature (ss: Fukuyama, 1995; Fuller, 1996; Lewicki & Bunker, 1996; Putnam 2000). This literature also provides an understanding of trust production within organizations. Powell (1996) suggests that trust production within an organization depends on positive collaboration, communication, reciprocity, and long-term relationships. Furthermore, trust depends on vulnerability, risk, and confidence, as well as other facets such as openness, benevolence, reliability, honesty, and competence (Mishra, 1996; Hoy & Tschannen-Moran, 1999). These dimensions of trust cannot exist without positive interpersonal relationships within an organization. Thus, a structure that enables the existence of supportive interdependent relationships within an organization will create a climate conducive for trust production. An enabling school structure produces such an environment, while a hindering structure inversely affects trust.

Empirical studies support the above theory of trust production. Research shows that faculty collegiality and collegial leadership account for a statistically significant amount of variability in teacher trust of teachers and teacher trust of the principal (Hoy, Tarter, & Witkoskie, 1992; Tarter, Sabo, & Hoy, 1996; Tschannen-Moran & Hoy, 1997). Further, collaboration with the principal, collaboration with teacher colleagues, and collaboration with parents are highly correlated with teacher trust of teachers, teacher trust of the principal, and teacher trust of clients (Tschannen-Moran, 2001). Evidence also reveals the positive effect of a healthy school climate on teacher trust of teachers and teacher trust of principal (Smith, Hoy, & Sweetland, 2001; Tarter, Sabo, & Hoy, 1995).

The above studies demonstrate that trust is a function of positive interpersonal relationships among stakeholders within schools. The variables demonstrated to predict or to be associated with trust are characteristics of an enabling school structure. Hoy and Sweetland (2000, 2001) discovered a strong positive association between enabling school structure and teacher trust of teachers and teacher trust of principal, as well as negative relationships with truth spinning, role conflict, and powerlessness. These findings suggest that trust within schools depends on an environment that empowers students, teachers, and parents to collectively work towards a common purpose. And an enabling school structure fosters such an environment.

Thus:

> H1: Enabling school structure will have a direct effect on parent trust of school.
> H2: Enabling school structure will have a direct effect on teacher trust of clients.
> H3: Enabling school structure will have a direct effect on teacher trust of teachers.
> H4: Enabling school structure will have a direct effect on teacher trust of principal.

As previously mentioned, collective teacher efficacy is a function of the sources of efficacy information (Bandura, 1984), and a teacher's perception of the teaching task and competence of colleagues and students (Tschannen-Moran, Hoy, & Woolfolk Hoy, 1998). The sources of efficacy information, as well as the context of teaching, do not exist independent of the internal stakeholders within a school. It is the interaction among teachers and the principal that shapes a school's normative environment. The absence of trust, or a climate of distrust, creates rigid, impersonal, and protective norms that govern behavior (Tyler & Kramer, 1996), ultimately resulting in a closed and unhealthy climate. This type of school climate negatively affects the organizational variables shown to cause teacher efficacy. Trust among teachers and the principal, however, provide the lubricant

for school effectiveness, supportive leadership, faculty collegiality (Hoy, Tarter, & Witkoskie, 1992; Tarter, Sabo, & Hoy, 1995; Hoy, Sabo, & Barnes, 1996), academic press (Hoy, Sabo, & Barnes, 1996; Smith, Hoy, & Sweetland, 2001; Tschannen-Moran & Hoy, 1998) and collaboration (Tschannen-Moran, 2001). These variables have all been empirically demonstrated to foster teacher efficacy. For this reason:

> H5: Teacher trust of teachers will have a direct effect on collective teacher efficacy.
> H6: Teacher trust of principal will have a direct effect on collective teacher efficacy.

According to the conceptual definition of collective teacher efficacy, the context of teaching is a vital element of collective efficacy formation. A teacher's perception of the teaching context is formed through his/her analysis of the teaching task and teaching competence (Goddard, Hoy, & Woolfolk Hoy, 2000). Beliefs of teaching competence within a school are partly shaped by teachers' perception of students' abilities and competencies. Positive perceptions of student competencies evoke constructive assessments of the teaching context. Conversely, negative perceptions generate antipathy towards the teaching context. While the latter perceptions can generate an unhealthy learning climate, the former perceptions can engender the collective agency needed for a school to advance student learning.

The conceptual definition of trust suggests that teacher trust of clients is an important construct in the analysis of teaching competence. When teachers' trust clients they perceive students and parents as being open, honest, reliable, benevolent, and competent. Furthermore, teachers are more willing to work collectively with parents and students on the tasks of schooling. Collective and cooperative involvement on the part of teaches, parents, and students in the educational process promote a constructive teaching

context that leads to effective student and school outcomes. This theory is supported by Tschannen-Moran's (2001) study that found teacher trust of clients influences the degree by which parents collaborate with school, and Goddard, Tschannen-Moran, and Hoy's (2001) study that discovered teacher trust of client explains a significant amount of variability in school academic achievement. Since a theoretical and empirical link between collective teacher efficacy and teacher trust of clients exists:

H7: Teacher trust in clients will have a direct effect on collective teacher efficacy.

A growing trend for educational reform centers on empowering parents to become more involved in the educational process. In fact, the devolution of decision-making to local stakeholders in schools, including parents, has become a common phenomenon in schools (Murphy, 1994; Ziebrath, 1999). Effective parent involvement, however, depends on a school climate that builds parental trust in schools. Greater levels of trust among parents and schools strengthen the social capital within a school by uniting stakeholders around a common vision of education, instead of fostering a loose coupling of educational views. Bryk and Schnider's (1996) study of the effect of local school councils on reform efforts in the Chicago Public Schools discovered that relational trust between parents, teachers, and administrators significantly influenced school commitment, orientation to innovation, outreach to parents, and collective responsibility. Furthermore, Rosenblatt and Peled (2002) found that parent trust of schools was negatively associated with conflict based involvement, indicating that the presence of trust led to more cooperation between parents and schools. Parent trust, similar to internal dimensions of trust, possesses the power to influence the learning climate and normative environment of schools. When trust is present, a more healthy and

academically focused climate will exist; however, distrust will engender a closed and unhealthy environment. For this reason:

H8: Parent trust of school will have a direct effect on collective teacher efficacy.

As previously illustrated, most schools and school districts possess classical bureaucratic characteristics: a division of labor, a hierarchy of authority, rules and regulations, impersonality, objective standards, and technical competence (Weber, 1947). According to Weber, these characteristics enhance the efficiency and effectiveness of organizations. Not everyone agrees, however, about the positive effects of bureaucratic structures. In fact, the educational literature suggests two diametrically opposing perceptions of school bureaucracies. Based on the existing evidence, Hoy (2002) notes "The dark side [of bureaucracies] reveals alienation, discontent, rigidity, and dullness, but the bright view highlights commitment, flexibility, responsibility, and effectiveness" (p.4). The distinction between these two divergent perceptions of bureaucracy has implications for collective teacher efficacy in schools. Theoretically, efficacy formation depends on a learning climate favorable to the sources of efficacy information, as well as the teaching task and context. School structure not only affects the climate of the school but also the teaching tasks and context. Hoy and Sweetland (2000, 2001) discovered that hindering bureaucracies correlate with role conflict, hierarchical dependence, rule dependence, and teacher sense of powerlessness, while enabling structures foster trusting, collaborative, and interconnected environments. Since collective teacher efficacy formation depends on the latter climactic characteristics within a school:

H9: Enabling school structure will have a direct effect on collective teacher efficacy.

When school is the unit of analysis, many factors manifested within the school environment have the potential to become intervening variables. That is, these variables intervene in the relationships among the constructs under investigation. Within the educational literature, the socioeconomic status of students has been demonstrated to have a preponderant effect on many outcome variables within schools. As for the outcome variables in this study, trust and collective teacher efficacy, research shows that socioeconomic status influences the level of internal dimensions of trust, as well as collective teacher efficacy (Goddard, Hoy, & Tschannen-Moran, 2001; Goddard, Hoy, & Logerfo, 2003). In addition to socioeconomic status, the effects of school level (grade configurations) are often accounted for when the locus of inquiry is on the school. Most internal trust studies hold constant the effect of school level by sampling only elementary schools, middle schools, or high schools. The sample for this study, however, consisted of a cross section of elementary schools, middle schools, and high schools; thus, the effects of school level needed to be partialed out by including it as a variable in the model. Finally, recent collective teacher efficacy studies by Ross, Gray-Hogaboam, and Gary (2002) and Goddard, Hoy, and LoGerfo (2003) confirm the findings of earlier studies that identified prior academic achievement as an antecedent of collective teacher efficacy. While prior academic achievement is not a contextual variable, its influence must still be accounted for in the model. For these reasons, the above variables are included in the model but specific hypotheses for their direct effects on trust and collective teacher efficacy are not stated.

CHAPTER IV

METHOD

Sample

Since collective teacher efficacy is an organizational level variable, school was

the unit of analysis for this study. The sample of schools was carefully obtained through

a four-step process. First, a stratified random sample of 180 schools, 60 elementary

schools, 60 middle schools, and 60 high schools, was drawn from the 836 public schools

in the 25 contiguous counties of northeast Oklahoma. These 180 schools represented 101

public school districts. Second, during the spring semester of 2001, researchers sent each

superintendent or assistant superintendent of the 101 school districts an informational

packet containing a letter explaining the purpose and process of the research, the research

proposal, a copy of the Institutional Reviewed Board (IRB) approval, sample copies of

instruments, and a district consent form. Five business days after mailing the

informational packet researchers telephoned each superintendent or assistant

superintendent from the 101 school districts to better explicate the research project and to

seek permission to contact the principals of the randomly sampled school(s) in his/her

district. After initial contact, 34 districts declined to participate, leaving 67 participating

school districts in the sample. As a result of nonparticipation by school districts, 91

schools remained from the original sample. Districts declining participation cited a lack

of time by district/school personnel as a rationale to not participate in the research. No

superintendent or assistant superintendent voiced concerns about the nature or process of

the study. Time constraints were an understandable worry since initial contact with the school districts occurred during a time period when schools were administering state mandated assessments and/or working on enrollment for the subsequent school year.

The third step of the sampling process involved contacting each of the 91 principals from the schools where district consent was procured. Each principal received an informational packet containing a letter explaining the research purpose and process, sample copies of the research instruments, and the signed district consent form. Five business days after mailing the informational packet, researchers telephoned each principal to further explain the purpose and process of the project and to secure his/her permission to participate in the study. After the completion of this stage, twelve of the 91 principals refused participation, leaving a sample of 79 schools. Reasons for nonparticipation from principals included time constraints, being new to the position, currently undergoing an accrediting review, and too many other tasks to contend with. All principals who declined participation expressed their regret for not participating, as well as their belief in the importance of the study.

The sample of 79 schools consisted of 22 elementary schools, 30 middle schools, and 27 high schools. School characteristics from the sampled schools parallel the state averages for ethnicity and free or reduced lunch eligibility; however, the sample differs from the state averages for district population and school size. Average enrollment by ethnic group in the state was 64 percent White, 17 percent Native American, 11 percent Black, 6 percent Hispanic, and 1 percent Asian (School Report Cards, 2003). The average ethnicity in the sample for this study was 62.9 percent White, 17.5 percent Native American, 12.7 percent Black, 5 percent Hispanic, and 1.5 percent Asian (see

appendices A - F). Furthermore, the state average for free or reduced lunch eligibility was 49 percent compared to 46.7 percent for this sample. Ethnically and economically the sample for this study is representative of the public school population in Oklahoma. School size and district population, on the other hand, were noticeably different. The average school size in the sample exceeded the state's average school size across all school levels. At the elementary level the difference was 100 students (477 sample to 377 state), 113 students at the middle school level (496 sample to 383 state), and 275 students at the high school level (626 sample to 351 state). In addition to school size differences, the average district population in the study was 96,692 residents to a state average district population of 6,355 residents. This variance is the result of having 21 schools, or 26 percent of the sampled schools, from the two largest urban districts in the state (the population for each of these school districts surpass 275,000 residents), as well as 8 other schools with district populations exceeding 90,000 residents in the sample. A further explanation of school characteristics in the sample can be seen from the graphs in appendix G and Appendix H.

The final step of the sampling process involved the random sampling of fifteen students and fifteen parents from either the fifth, seventh, or eleventh grade of the school, as well as ten teachers from the entire school. The above grades were selected to represent a strata of elementary, middle, and high schools, as well as to increase the probability that randomly sampled subjects had a long-term relationship with the school. For example, within the context of standard grade configurations, K- 5, 6-8, and 9-12, fifth grade students could have attended their respective schools for five years, seventh grade students one year, and eleventh grade students two years prior to data collection.

Thus, perceptions from the randomly selected subjects would be based on relationships existing over a period of time. The principal from each school also participated in the research, yielding a total sample of 41 subjects from each school or 3,239 total subjects: 1,185 parents, 1,185 students, 790 teachers, and 79 principals.

Operational Measures

Internal Trust

Early empirical studies on trust in schools conceptualized trust as a unidimensional construct measuring faculty trust in the principal and faculty trust in colleagues (Hoy & Kupersmith, 1985). Hoy and Tschannen-Moran (1999) used the early definition of trust and the work of Mishra (1996) to create a multidimensional definition. In addition, they expanded the operationalization of the trust scale to measure the facets of trust and well as the three dimensions: faculty trust in the principal and faculty trust in colleagues, and faculty trust in clients. In order to continue a consistent line of inquiry into trust, this research used Hoy and Tschannen-Moran's (1999) definition and Trust Scale to define and measure trust. Trust was 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" (p.189). The Trust Scale consists of 37 items with a six point Likert response set ranging from "Strongly Agree" (coded as 1) to "Strongly Disagree" (coded as 6). For the purpose of this research, the response set was changed to "Strongly Disagree" (coded as 1) and "Strongly Agree" (coded as 6) in order to establish a consistent response set with other instruments in the study. Items were constructed to match a broad understanding of trust, as well as each of the five

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facets of trust: benevolence, reliability, competence, honesty, and openness. Sample items from each of the three dimensions of trust include: "Teachers in this school can rely on the principal," "Teachers in this school believe in each other," "Students in this school are reliable." Out of the 37 items, eleven pertain to teacher trust in the principal, eight to teacher trust in colleagues, and fifteen to teacher trust in clients. Three items are filler items and are not scored.

The development of the Trust Scale consisted of four phases. First, a panel of experts from Ohio State University critiqued each item in order to assess construct validity, or the degree to which each item measured what it purports to measure. Second, a field test with six-experienced teachers was performed to assess face validity, clarity of instructions, instrument readability, length, and appropriateness of the response set. Third, an exploratory factor analysis with principal axis extraction was performed on data collected from 50 teachers from 50 schools. Finally, Hoy and Tschannen-Moran (1999) used the Trust Scale in a large empirical study of 50 elementary schools from one Midwestern school district.

Results of the exploratory factor analysis indicated that the Trust Scale is a three factor measure. Factor loadings of the items on the Trust in Principal subscale ranged from .44 to .94; factor loadings on the Trust in Colleagues subscale ranged from .71 to .93; and factor loadings on the Faculty Trust in Clients subscale ranged from .52 to .91 (Hoy & tschannen-Moran, 1999). Alpha values of .98 for teacher trust of principal, .98 for teacher trust of teachers, and .97 for teacher trust of clients reveals good item consistency. Validity of the instrument was assessed with bivariate correlations between each of the trust subscales and powerlessness, self-estrangement, conflict, and teacher

efficacy. Results showed a significant negative relationship between internal dimensions of trust and powerlessness, self-estrangement, and conflict, as well as a significant positive correlation with teacher efficacy (Hoy & Tschannen-Moran, 1999). In addition to these statistical measurements, the use of the trust scale in several recent studies (Goddard, Tschannen-Moran, & Hoy, 2000, Hoy & Sweetland, 2000, 2001; Smith, Hoy, & Sweetland, 2001;Tschannen-Moran, 2001) supports the validity and reliability of the instrument. Results from a test of the Trust Scale's internal consistency with data collected for this study can be found in table 1.

Enabling School Structure

Enabling school structure refers to the formalization and centralization of a school's bureaucratic structure. Hoy and Sweetland (2000) defined and operationalized enabling school structure as "a structure that is formed by enabling formalization and centralization; the rules, regulations, and procedures are helpful and lead to problem solving among members"(p.531). Conversely, a hindering structure forces conformity to rigid rules and regulations. Even though item generation for the Enabling School Structure Scale evolved from a bureaucratic typology consisting of enabling formalization, coercive formalization, enabling centralization, and hindering centralization, enabling school structure is a single factor, continuous variable ranging from enabling to hindering (Hoy & Sweetland, 2000, 2001). The short version of the scale consists of 12 items with a Likert response set ranging from "Never" (coded as 1) to "Always" (coded as 5). The response set ranges from 12 to 60 with a larger value indicating a more enabling school structure. Sample items for enabling questions include: "Administrative rules in this school are guides to solutions rather than rigid

procedure," " The administrative hierarchy of this school facilitates the mission of this school." Hindering items include: "In this school red tape is a problem," " The administrative hierarchy of this school obstructs innovation." Hindering items are reverse scored in order to maintain a consistent response range.

The short version of the enabling school structure scale is valid and reliable. Three independent reliability tests performed by Hoy and Sweetland (2001) from samples of 61 teachers, 116 teachers, and 97 high schools yielded alpha values of .90, .93, and .95 respectively. Each of the three values is statistically significant. Validity of the 12 item scale was measured with two bivariate correlation testes with the original 24-item long version. Pearson coefficients of $r = .96$ and $r = .99$ respectively indicate extremely high correlations between the long and short version of the instrument. In addition, a positive and significant correlation between enabling school structure and faculty trust in the principal ($r = .76$), as well as negative and significant correlations between enabling school structure and truth spinning ($r = -.74$) and enabling school structure and role conflict ($r = .71$) further support the validity of the instrument (Hoy & Sweetland, 2001). Results from a test of the Enabling School Structure Scale's internal consistency with data collected from this study can be found in table 1.

Collective Teacher Efficacy

Goddard, Hoy, and Woolfolk Hoy (2000) used the early theoretical and empirical knowledge of teacher efficacy to construct a definition and measure of collective teacher efficacy. Collective teacher efficacy, as opposed to teacher efficacy, measures the perception that the school faculty as a whole (a collective) can positively influence student learning. Collective teacher efficacy is defined as "a construct measuring

teachers' beliefs about the collective (not individual) capability of a faculty to influence student achievement; it refers to the perceptions of teachers that the efforts of the faculty of a school will have a positive effect on student achievement" (p.486). Items from the Collective Teacher Efficacy Scale (Goddard, Hoy, & Woolfolk Hoy, 2000) were generated in accordance with the Gibson and Dembo (1984) scale, but constructed to reflect group oriented perceptions relating to positive and negative competence, as well as positive and negative tasks analysis. The short form used in this study consists of 12-Liket type items ranging from "Strongly Disagree" (coded as 1) to "Strongly Agree" (coded as 6). The response set ranges from 12-82, with a higher score indicating greater collective teacher efficacy. Sample items include the following: "Teachers in this school are able to get through to the most difficult students," "These students come to school ready to learn," Teachers in this school do not have the skills to deal with student disciplinary problems," "Teachers here are confident they will be able to motivate their students," and "Students here just aren't motivated to learn." Negatively worded items are reverse scored.

Validity and reliability of the Collective Teacher Efficacy Scale (Goddard, Hoy, & Woolfolk Hoy, 2000) were obtained through a field test with six experienced teachers, a pilot study with 70 teachers from 70 schools, and a large scale study with 452 teachers from 50 schools. Empirical findings from a factor analysis indicate that collective teacher efficacy is a single factor construct amalgamating perceptions of the teaching tasks and group competence. An alpha value of .96 shows strong internal reliability and statistically significant correlations with teacher powerlessness ($r = -.51$) and teacher trust of colleagues ($r = .67$) indicates strong validity. Results from an assessment of the

Collective Teacher Efficacy Scale's internal consistency with data collected from this study can be found in table 1.

Table 1: Internal Consistency of the Operational Measures

Measure	Alpha
Enabling School Structure	.92
Collective Teacher Efficacy	.85
Teacher Trust of Principal	.94
Teacher Trust of Clients	.91
Teacher Trust of Teachers	.93

Parent Trust of School

Parental trust of school, both as a construct and measurement, originated from the conceptual and empirical framework of the trust studies by Hoy and colleagues (see: Hoy & Tschannen-Moran, 1999; Goddard, Tschannen-Moran, & Hoy, 2000; Smith, Hoy, & Sweetland, 2001;Tschannen-Moran, 2001). In order to maintain consistency with the extant multidimensional definition and measurement of trust, parent trust is 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" (Hoy & Tschannen-Moran, 1999, p.189). Items for the parent trust of school scale were generated to measure the five facets of trust presented in the above definition. The short version of the instrument (Forsyth, Adams, & Barnes, 2002) used in this study, consists of 10 items with a Likert response set ranging from "Strongly Disagree" (coded as 1) to "Strongly Agree" (coded as 8). Individual parent scores range from 10 to 80 with a larger value indicating greater levels of parent trust. Sample items for each of the facets of trust include: "This school keeps me well informed," "Kids at this school are well cared for," "This school is always honest with me," "This school has high standards for all kids," " I never worry about my child when he/she is there."

Instrument development for the parent trust of school scale (Forsyth, Adams, & Barnes, 2002) involved an item critique by 11 doctoral students in order to assess construct and face validity and a field test of the instrument with a sample of 10 schools and 429 parents. Results from a factor analysis on data collected from the field test found that a single factor explained 54.1 percent of the variability in parental trust, a finding consistent with the trust scales developed by Hoy and colleagues. Furthermore, single factor loadings on all items were above .68. An alpha coefficient of .95 indicates strong internal consistency of the instrument. Validity of the parent trust instrument is supported by a significant correlation with the internal Trust Scale, as well as item generation being consistent with the Trust Scales.

Control Variables

Data for the control variables of school level, socioeconomic status, and prior school performance were obtained from the 2002 Oklahoma School Report Cards (available Online at www.schoolreportcards.org). School level was operationized by the grade configuration. Elementary schools were coded as 1, middle schools as 2, and high schools as 3. The percentage of students within a school qualifying for the federal free or reduced lunch program was used as a proxy for socioeconomic status. School percentages for students qualifying for the lunch program within this sample ranged from 7 percent to 95 percent.

Prior school performance was operationalized as a school's Academic Performance Index (API) for the 2000-2001 school year (API Overview, 2002). Student performance on the Oklahoma Criterion Referenced Exams administered in the third, fifth, and eighth grades, comprise 90 percent of elementary and middle schools' API

score. The other 10 percent is obtained through school attendance rates. For high

schools, 80 percent of the API score encompass student test results from the End of

Instruction Exams administered in United States History and English II, 10 percent

include school completion rates (attendance rates, graduation rates, and dropout rates),

and the final 10 percent consist of a compilation of academic excellence indicators.

Academic excellence indicators include average ACT scores and ACT participation rates,

Advanced Placement credit, and college remediation rates for each high school. School

API scores range from 0 – 1500 depending on a school's performance. A large value

indicates superior performance.

Data Collection

Data collected for this study were part of a larger project encompassing a wide

range of school level variables. Seven doctoral students were involved with the data

collection process, which started in the spring of 2002 and concluded in the winter of

2003. Initial data collection in the spring of 2002 consisted of 16 schools and was

designed to assess the friendliness of the data collection process. Returns from the spring

made known the importance for early contact with principals and consistent follow-up

with non-respondents in order to ensure a strong return rate for all subject categories.

The systematic process of data collection included soliciting principal participation in the

research, random sampling of subjects within schools, instrument dissemination, and

follow-up with non-respondents.

Even though school districts consented to the research request, principals still

possessed the right to decline participation. For this reason, principal consent was

achieved by following the procedures described in the sample section. These procedures involved sending an informational packet to the principal and following-up with a phone conversation to further explain the purpose and process of the research. After securing principal consent, a member of the research team arranged an initial visit to the school to discuss the data collection process with the principal and to disseminate the student and teacher instruments. Consenting principals were asked to provide a class roster containing names and addresses of students from either the fifth, seventh, or eleventh grade (depending on the grade configuration of the school), as well as a list of teacher names from the entire school. Depending on each principal's preference, the two lists were submitted to the researcher prior to the initial visit or during the first visit to the school. Researchers used the class roster and list of teacher names, as well as a randomization table, to acquire a random sample of 15 parents, 15 students, and 10 teachers. Two additional parents and students were sampled with the original 15 subjects for auxiliary purposes. Auxiliary subjects were only used if an instrument could not be delivered to a subject.

Packets containing several different surveys were developed for each subject category (principals, parents, students, and teachers). A letter explaining the purpose of the research and directions for completing the instruments was placed on the front cover of each instrument. Instrument packets also contained a paid postage return envelope allowing the subject to directly mail, free of charge, his/her instrument to the researchers. Student instrument packets also contained a consent/assent form for the student and a parent/guardian to sign if the student chose to participate in the study. At the conclusion of the initial visit with the principal, researchers left instrument packets for students and

teachers to be delivered by a representative of the school. The principal packet was also given to the principal during the initial visit. By having access to student addresses from the class roster, parent/guardian packets were mailed directly to the home. All subjects were instructed to use the prepaid return envelope to mail the completed instrument to the researchers.

Research instruments were coded for follow-up purposes only. Follow-up with non-respondents started approximately eight to ten business days after the initial instrument dissemination. Members of the research team delivered additional instrument packets containing a follow-up letter to the school to be distributed to students and teachers not responding to the previous instrument dissemination. Follow-up instrument packets for students and teachers were either delivered to the school in person by the researcher or mailed to the school in a bulk manila envelope. Additional parent packets, along with a follow-up letter, were mailed to parents who did not return the first instrument. Follow-up with non-respondents continued until 50 percent of the instruments per subject category were received or three follow-ups with non-respondents were conducted for the respective schools. The entire data collection process yielded a total return rate of 56 percent, 1,836 out of 3,239 instruments were returned. Disaggregating the return rate to the subject category indicates that 545 out of 790 teachers (69 percent), 578 out of 1,185 parents (49 percent); 635 out of 1,185 students (53 percent return), and 75 out of 79 (95 percent) principals returned instruments. A low return rate for teachers in four schools resulted in the removal of these schools from the sample, leaving a final sample of 75 schools for this study.

A frequent problem occurring throughout the data collection process involved undeliverable instrument packets to parents and students. This problem resulted from inaccurate district and school records. Contributing to the problem were district policies that mandated parents/guardians to change identification information in person at the central administrative office. These policies hinder the ability of transient and low-income families to change contact information, which produces the unintended consequence of inaccurate student information. A total of 39 parent instruments were returned to the researchers with an indication of an incorrect address marked on the envelope. Furthermore, 6 student instruments were returned because the subject was either no longer enrolled in the school or serving a long-term suspension. Dealing with the problem of undeliverable instruments involved replacing the missing subject with an auxiliary subject(s) obtained from the random sample of parents or students, or by removing the subject from the sample and not selecting or distributing an additional instrument.

Additional school level data used in this study, school socioeconomic status, school level, and prior academic performance, were obtained from the state department of education. Specifically, the Oklahoma School Report Cards maintained by the Office of Accountability was used to acquire the percentage of students qualifying for the federal free or reduced lunch program (a proxy for school socioeconomic status), the grade configurations of schools (school level), and the 2001 school Academic Performance Index (a proxy for prior school performance).

Data Analysis

The first step of data analysis was to run an exploratory factor analysis on the Parent Trust of School Scale with data collected for this study. An exploratory factor analysis examines the association of a set of variables (in this case the items of the instrument) for the purpose of constructing common factors that account for these variables (Stapleton, 1997). Since the Parent Trust of School Scale had not previously been used in research independent of the scale's development, a factor analysis using principal axis extraction (the same procedure used for the scale's development) was performed.

School level analyses were performed in this study; thus, data assembly involved procedures to aggregate individual cases to the school level. Individual data were first entered into an Excel database for tracking purposes then imported into an SPSS data file in order to remove cases that were returned but not completed, to replace missing values in the data, to recode reverse scored items, to compute a total score for individual subject instruments, and to aggregate individual subject scores to the school level. A total of 18 parent and 25 teacher instruments were returned without recorded responses and thus they removed from the sample. Missing values were replaced with the series mean. For continuous variables it is generally acceptable to replace missing values with the series mean if less than 15 percent of the data are missing. If more than 15 percent of the data are missing, it is recommended that the case be extracted from the analysis (George & Mallery, 2002). Data from four teacher instruments exceeded the 15 percent rule and were removed from the sample.

After extracting the unusable cases, reverse scored items were recoded. After which, high scores on the scales indicated the presence of the construct. A total score on each measure was computed for each case. Total scores for each individual case were aggregated to the school level. Aggregation produced a school mean and standard deviation for Enabling School Structure, Teacher Trust of Principal, Teacher Trust of Teachers, Teacher Trust of Client, Parent Trust of School, and Collective Teacher Efficacy variables. Socioeconomic status, school level, and school performance were already school level variables and did not need to be aggregated.

SPSS was the statistical program used to first analyze the bivariate correlations among all variables in this study. Correlational statistics measured the association, or relationship, among the variables under investigation. Next, using SPSS, a path analysis with ordinary least squares (OLS) multiple regression was used to analyze the direct relationships among school structure, the trust variables, the control variables (socioeconomic status, school level, and prior school performance) and collective efficacy. Path analysis explained the variability in the endogenous variables (Parental Trust of School, Teacher Trust of Teachers, Teacher Trust of Principal, Teacher Trust of Clients, and Collective Teacher Efficacy) caused by the exogenous variables (SES, school level, ESS, API, as well as the dimensions of trust). Since path analysis is an *a prior* research method (meaning that theory drives the development of the structural model), the objective was to test the significance of the theorized causal relationship, or path, between two variables. Each path, or relationship between one independent (predictor) variable and one dependent (criterion) variable, was accounted for by a path coefficient. Path coefficients were obtained by using the Beta-weights (standardized

regression coefficients) from multiple regression analyses. Beta-weights are standardized parameter estimates that indicate the standard deviation change in the dependent variable caused by a one standard deviation unit change in the independent variable. Since these values are standardized, they can be compared across scales. Pedhazur (1997) notes, "a path coefficient indicates the direct effect of a variable hypothesized as a cause of a variable taken as an effect" (p.772). Therefore, the outcome produced by path analysis supports the plausibility of casual relationships between variables.

Similar to all parametric statistical techniques, the assumptions underlying path analysis must be met in order to measure the statistical significance of the hypothesized casual relationships among the variables. Five assumptions undergird path analysis (Pedhazur, 1997). First, relationships between variables in the path diagram are linear and causal. Second, residuals, or the calculated error for the endogenous variable(s), are not related. A high residual value indicates that other variables not included in the model explain variability in the criterion variable. According to the assumption, these variables are not correlated with the predictor variables. As seen in appendices I through M, the predictor and criterion variables in this study maintained a linear relationship and the residuals were not correlated. Third, the casual relationship between variables is not reciprocal. There are no reciprocal paths in the theorized model; the model is recursive (unidirectional). Fourth, all variables are measured on a continuous, interval scale. All variables in this study were continuous, as opposed to categorical. Fifth, variables are measured without error. The operational measures of each variable were valid and reliable.

Calculating path coefficients for each hypothesized causal relationship involves regressing each dependent variable on the independent variable(s), and using the standardized regression coefficients to determine the effect of the independent variable(s) on the dependent variable. Pedhazur (1997) notes that one regression should be performed for each endogenous variable. Since five endogenous variables exist in the model, five separate regressions were performed. Figure two presents the path diagram and the five regression equations used for the model. The indirect effects of the exogenous variables within the model were also calculated.

CHAPTER V

RESULTS

The purpose of the results section is to compare the outcomes of the statistical procedures performed on data for this study against the hypotheses underlying the research. Results of the analyses will defend or repudiate the stated hypotheses. Prior to commencing this discourse, however, results from the exploratory factor analysis on the Parent Trust of School Scale, the descriptives for school level variables, and the correlations will be presented.

Exploratory Factor Analysis

The psychometric examination of the Parent Trust of School Scale consisted of an exploratory factor analysis and an assessment of item consistency on data collected for this study. Principal axis extraction produced one factor with an eigenvalue of 7.82. All other factors had eigenvalues below 1.0, indicating that the Parent Trust of School Scale is a one factor measurement. This one factor explained 78 percent of the variance in the data with factor loadings for the ten items ranging from .79 to .90. In addition, a Cronbach's alpha of .97 reveals strong internal consistency for the scale. These results parallel findings from the instrument development. Results are reported in Table 2.

Table 2: Exploratory Factor Analysis Results

Factor	Initial Eigenvalues	% of Variance	Factor Loadings 1 Factor
1	7.82	78.22	.86
2	.40	4.02	.79
3	.36	3.63	.93
4	.32	3.25	.88
5	.25	2.55	.93
6	.22	2.24	.87
7	.18	1.84	.85
8	.17	1.70	.91
9	.15	1.48	.82
10	.11	1.06	.85

School Level Descriptives

Table 2 presents the mean, standard deviation, minimum and maximum value, and number of cases for each of the nine variables included in the study. The variable "school level" was coded as 1 for elementary schools, 2 for middle schools, and 3 for high schools. "School socioeconomic status" was the percentage of students within the school qualifying for the federal free or reduced lunch program. Finally, prior school performance was operationalized as the school's Academic Performance Index (API) for the 2000-2001 school year. API is a scaled variable ranging from 0 to 1500. The mean Oklahoma API score during the 2000-2001 school year was 1000.

Table 3: Descriptive Statistics

	N	Minimum	Maximum	Mean	Std. Deviation
Teacher Trust of Teacher	75	27.00	44.00	37.65	4.13
Teacher Trust of Principal	75	30.33	64.50	51.34	8.34
Teacher Trust of Client	75	42.17	76.60	59.50	7.60
Enabling School Structure	75	33.67	57.60	46.87	4.99
Collective Teacher Efficacy	75	38.25	66.00	52.07	6.24
Parent Trust of School	75	33.67	80.00	57.84	9.81
School Level	75	1	3	2.08	.78
Socioeconomic Status	75	7	95	45.23	22.80
Prior School Performance	75	394.0	1500.0	1011	202.43

Correlation Results

Results from the bivariate correlation were first examined in order to determine

the strength of association among the variables in this study. The Pearson correlation

coefficients denote the degree and direction (whether the relationship is positive or

negative) of association between two variables. Results were analyzed within the context

of previous findings about the relationship between variables in this study, contingent on

the existence of such evidence. This study, however, provided the first known results

about the correlations among several of the variables.

Previous evidence indicates the existence of a positive association between

teacher trust of teachers and teacher trust of principal, as well as between teacher trust of

teachers and teacher trust of clients (Tarter, Sabor, & Hoy, 1995; Hoy & Tsannen-Moran,

1999; Smith, Hoy & Sweetland, 2001). Correlational results performed on data for this

study confirm the existence of a positive relationship between teacher trust of teachers

and teacher trust of principal (r =.74) and between teacher trust of teacher and teacher

trust of clients (r =.56). Whereas Smith, Hoy, and Sweetland did not discover a significant relationship between teacher trust of clients and teacher trust of principal in their sample, the relationship between the two variables for this sample was significant (r =.48). Prior research has not explored the relationship between parent trust of school and the internal trust dimensions. Results indicate that parent trust of school is intercorrelated with teacher trust of teachers (r =.38), teacher trust of principal (r =.37), and teacher trust of client (r =.54), suggesting that an increase in internal dimensions of trust is associated with an increase in parent trust of school, and visa versa. Interpreted as a whole, these results show strong intercorrelations among all trust dimensions, internal as well as external. Table 4 presents the correlation matrix for the school variables.

Included in table 4 are the bivariate correlations among the trust variables and school level, socioeconomic status, and prior school performance. Several significant findings were conspicuous. For instance, teacher trust of teachers was negatively related to school level (r = -.29) and positively related to prior school performance (r = .23), whereas teacher trust of the principal was not significantly related to any of the three variables. Teacher trust of clients had a strong negative relationship with socioeconomic status (r = -.59) and school level (r = -.32), as well as a strong positive association with prior school performance (r = .79). The teacher trust of clients findings were consistent with results from Goddard, Tschannen-Moran, and Hoy's (2001) study of teacher trust of clients and academic performance. Finally, parent trust of school was inversely related to school level (r = -.49), but positively related to prior school performance (r = .32). As school level increases, parent trust of school tends to decrease. A negative correlation between parent trust and school level is consistent with Adams and Christenson's (2000)

study that discovered a significant difference in parent trust levels across elementary, middle, and high schools.

Next, the relationship between enabling school structure and each of the trust variables was explored. Similar to findings by Hoy and Sweetland (2000, 2001), results from this analysis indicated a strong positive correlation between enabling school structure and teacher trust of teachers ($r = .70$) and enabling school structure and teacher trust of principal ($r = .86$). What had not previously been measured, however, was the relationship between enabling school structure and teacher trust of clients and parent trust of school. Consistent with the other trust dimensions, Pearson correlation coefficients revealed a positive association between enabling school structure and teacher trust of clients ($r = .52$), as well as with parent trust of school ($r = .46$); inferring that the more enabling a school structure the greater the likelihood of higher trust levels among all stakeholders within schools. It should also be noted that enabling school structure was positively related to school performance ($r = .23$), while a negative relationship was found between enabling school structure and school level ($r = -.17$), as well as socioeconomic status ($r = -.18$). However, these latter relationships were not statistically significant. Table 4 presents the correlation matrix for enabling school structure.

Finally, the bivariate correlations for collective teacher efficacy were analyzed. According to the results, collective teacher efficacy had a significant relationship will all variables in the study. Positive relationships were discovered between collective teacher efficacy and teacher trust of teachers ($r = .55$), teacher trust of principal ($r = .47$), teacher trust of clients ($r=.89$), enabling school structure ($r = .56$), parent trust of school ($r = .50$), and prior school performance ($r = .72$). Negative correlations exist between collective

teacher efficacy and school level (r = -.35) and collective teacher efficacy and

socioeconomic status (r = -.59). An increase in trust, school performance, and enabling

school structure was associated with an increase in collective teacher efficacy; however,

an increase in school level and school socioeconomic status was associated with a

decrease in collective teacher efficacy. The correlation between collective teacher

efficacy and teacher trust of teachers, collective teacher efficacy and socioeconomic

status, and collective teacher efficacy and prior performance are consistent with findings

from other collective efficacy studies (See: Goddard, Hoy, & Woolfolk Hoy, 2000;

Goddard, Hoy, & Logerfo, 2003; Smith, Hoy, & Sweetland, 2002). Prior evidence about

the relationship among collective teacher efficacy and parent trust of school, teacher trust

of clients, teacher trust of principal, enabling school structure, and school level does not

exist. These findings are the first known correlation results among these variables.

Table 4 presents the correlation matrix for the variables in this study.

Table 4: Correlations Among School Variables. N = 75

	TTT	TTP	TTC	PTS	ESS	CTE	Schllev	SES	API
Teacher Trust of Teachers	1.0	.74**	.56**	.38**	.68**	.55**	-29**	-.15	.23**
Teacher Trust of Principal		1.0	.48**	.37**	.86**	.47**	-.21	-.10	.17
Teacher Trust of Clients			1.0	.53**	.52**	.90**	-.32**	-.59**	.72**
Parent Trust of School				1.0	.46**	.50**	-.49**	-.20	.32**
Enabling School Structure					1.0	.56**	-.17	-.18	.23*
Collective Teacher Efficacy						1.0	-.35**	-.59**	.72**
School Level							1.0	-.07	-.18
Socioeconomic Status								1.0	-.72**
Prior school Performance									1.0

*p<.05
**p<.01

Path Analysis

A path analysis using ordinary least squares regression was used to test the system

of relationships among the variables in the conceptual model. The parameter estimates,

in this case the Beta weights (standardized regression coefficients), were used to explain

the direct effect of each independent variable on the dependent variable. The Beta weight

is the standard deviation change in the dependent variable when the independent variable

changes by one standard deviation unit. A statistically significant Beta weight for an

independent variable infers the existence of a direct effect on the dependent variable. In

addition to direct effects, variables may also indirectly influence the dependent variable

through a mediating variable. These relationships are known as indirect effects. Indirect

effects are the product of the path coefficients for each indirect path linking two variables

(Maruyama, 1998). A strength of path analysis is the identification of both direct and

indirect effects. Both direct and indirect effects will be reported and interpreted. Results,

however, will first be reported by each multiple regression run to test the tenability of

each hypothesis, then by explicating the entire model to analyze the indirect effects.

First, parent trust of school was regressed on enabling school structure, school

level, and school socioeconomic status. As seen in Table 5, enabling school structure

(Beta = .35, $p < .01$) and school level (Beta = .44, $p < .01$) independently contributed to

the explanation of parent trust of school. As predicted in Hypothesis 1, enabling school

structure had a direct effect on parent trust of school. Additionally, school level also had

a direct effect on parent trust of school. There was no statistical significance, however,

for the direct effect of socioeconomic status on parent trust of school.

Table 5: Parent Trust of School Regressed on ESS, Schllev, SES. N = 75

	Beta Weight	T	Significance
Enabling School Structure	.35	3.71	.000
School Level	-.44	-4.78	.000
Socioeconomic Status	-.16	-1.76	.082

Next, teacher trust of client was regressed on enabling school structure, school level, and school socioeconomic status. Table 6 shows that all three variables independently explained variability in teacher trust of clients. As predicted in hypothesis two, enabling school structure had a direct positive effect (Beta = .37, p< .01) on teacher trust of client. As a school structure becomes more enabling, the level of teacher trust of clients also increases. Results also indicated that both school level (Beta = -.54, p< .01) and school socioeconomic status (Beta = -.29, p<. .01) had direct negative effects on teacher trust of clients, implying that as school level increases and the number of economically disadvantaged students in a school increase, teacher trust of clients dissipates.

Table 6: Teacher Trust of Clients Regressed on ESS, Schllev, SES. N = 75

	Beta Weight	T	Significance
Enabling School Structure	.37	4.90	.00
School Level	-.29	-3.87	.00
Socioeconomic Status	-.54	-7.16	.00

Next, teacher trust of teachers was regressed on enabling school structure, school level, and school socioeconomic status. Similar to the findings of these variables influence on parent trust of school, results indicated that enabling school structure (Beta = .66, p< .01) and school level (Beta = -.19, p< .05) each independently explained teacher trust of teacher within a school, whereas the explanatory power of socioeconomic status

was not significant. As predicted in hypothesis 3, enabling school structure had a direct effect on teacher trust of teacher. Moreover, enabling school structure accounted for the most variability in teacher trust of teacher, above and beyond the joint effect of school level and socioeconomic status. The more enabling the school structure, the more teachers trust other teachers. Conversely, however, school level negatively influences the level of teacher-to- teacher trust within schools. Results are presented in Table 7.

Table 7: Teacher Trust of Teacher Regressed on ESS, Schllev, SES. N = 75

	Beta Weight	T	Significance
Enabling School Structure	.66	7.71	.00
School level	-.18	-2.20	.03
Socioeconomic Status	-.04	-.53	.60

The final regression treating a trust variable as the criterion was the regression of teacher trust of principal on enabling school structure, school level, and school socioeconomic status. As seen in Table 8, only enabling school structure (Beta = .85, p< .01) explained the presence of teacher trust of principal. School level and school socioeconomic status did not predict teacher trust of principal. As predicted in hypothesis 4, enabling school structure had a direct effect on teacher trust of principal.

Table 8 Teacher Trust of Principal Regressed on ESS, Schllev, SES. N = 75

	Beta Weight	T	Significance
Enabling School Structure	.85	13.61	.00
School Level	-.06	-1.03	.31
Socioeconomic Status	.05	.76	.45

The fifth and final regression treated collective teacher efficacy as the dependent variable and the trust variables, enabling school structure, school level, socioeconomic status, and prior school performance as the predictor variables. As seen in Table 9, only school level (Beta = -.13, p< .05), enabling school structure (Beta = .27, p< .01), and

teacher trust of clients (Beta = .61, p< .01) individually accounted for a significant

amount of the variability in collective teacher efficacy. According to these results, these

three variables were significant predictors of collective teacher efficacy in schools and

had a direct effect on its presence, supporting hypotheses seven and nine. A more

enabling school structure and greater teacher-client trust positively influenced teachers'

perceptions of the faculty's efficaciousness; conversely, perceptions of faculty

efficaciousness declined as school level increased. Teacher trust of client, with a Beta

weight of .61, had the most explanatory power of collective teacher efficacy.

Surprisingly, the hypothesized direct effects of parent trust of school, teacher trust of

teacher, and teacher trust of principals were not supported by the path analysis.

Table 9 Collective Teacher Efficacy Regressed on TTT, TTP, TTC, PTS, ESS, SES, Schllev, API. N = 75

	Beta Weight	T	Significance
Enabling School Structure	.27	2.75	.008
School Level	-.13	-2.18	.03
Socioeconomic Status	-.10	-1.39	.17
Teacher Trust of Teachers	.06	.77	.44
Teacher Trust of Principal	-.15	-1.5	.14
Teacher Trust of Clients	.61	6.5	.00
Parent Trust of School	-.05	-.74	.46
Prior School Performance	.15	1.80	.07

Figure 2 presents the path coefficients for the conceptual model. The path

coefficients are the Beta weighs obtained from each of the five regression runs, and they

indicate the direct effect of the predictor variable on the criterion variable. Asterisks

denote a significant direct effect between variables. As seen in the figure, and previously

alluded to in the aforementioned reporting of results, several of the hypothesized

relationships were not supported by the analysis. Beginning with the contextual

variables, socioeconomic status did not have a direct effect on parent trust of school,

teacher trust of teacher, teacher trust of principal, and collective teacher efficacy. The hypothesized direct effect of school level on teacher trust of principal was also not confirmed. As for the direct effect of the central variables in this study, enabling school structure and trust, it was surprising to find non-significant effects of teacher trust of teacher, teacher trust of principal, and parent trust of school on collective teacher efficacy. It was not surprising to find a significant direct effect of enabling school structure on all the trust variables and collective teacher efficacy, as well as the significant effect of teacher trust of client on collective teacher efficacy. The indirect effects, in addition to the direct effects are reported in the model. Enabling school structure (.38) had the largest indirect effect on collective teacher efficacy.

Since the purpose of this research was to discover antecedents of collective teacher efficacy, the conceptual model underlying the operationalization of the study was modified in order to reflect the findings of this research. Model modification involves the deletion of non-significant paths from the model (Pedhazur, 1997). Paths with a statistical significance level greater than .05 were deleted from the model. Even though the significance level of the variable API was .07, it was maintained in the model due to previous findings of its significance (See:Goddard, Hoy, & Woolfolfk Hoy, 2000, Smith, Hoy, & Sweetland, 2002; Goddard, 2002; Goddard, Hoy, & LoGerfo, 2003). Figure 3 presents the respecified model.

Figure 2: Conceptual Model: Direct and Indirect Effects

e= .59

e= .39

Socioeconomic Status (SES)

Parent Trust of School (PTS)

-.16

-.05

-.10

-.44**

-.54**

School level (Schllev)

.35**

-.29**

Teacher Trust of Clients (TTC)

.04

-.13*

Collective Teacher Efficacy (CTE)

.37**

-.18*

.27**

Enabling School Structure (ESS)

.05

Teacher Trust of Teachers (TTT)

.66**

.06

.15

.85**

-.06

-.15

Prior School Performance (API)

Teacher Trust of Principal (TTP)

e =.48

e=.15

e = .26

Indirect Effects

SES → PTS →	CTE = (-.16)(-.05) = -.008	Schllev → PTS → CTE = (-.44)(-.05) =.022
SES → TTC →	CTE = (-.54)(.61) = -.33	Schllev → TTC → CTE = (-.29)(.61) = -.17
SES → TTT →	CTE = (-.04)(.06) = -.002	Schllev → TTT → CTE = (-.18)(.06) = -.01
SES → TTP →	CTE = (.05)(-.13) = -.007	Schllev → TTP → CTE = (-.06)(-.15) = .00

Total Indirect Effect for SES = -.33   Total Indirect Effect for Schllev = -.16

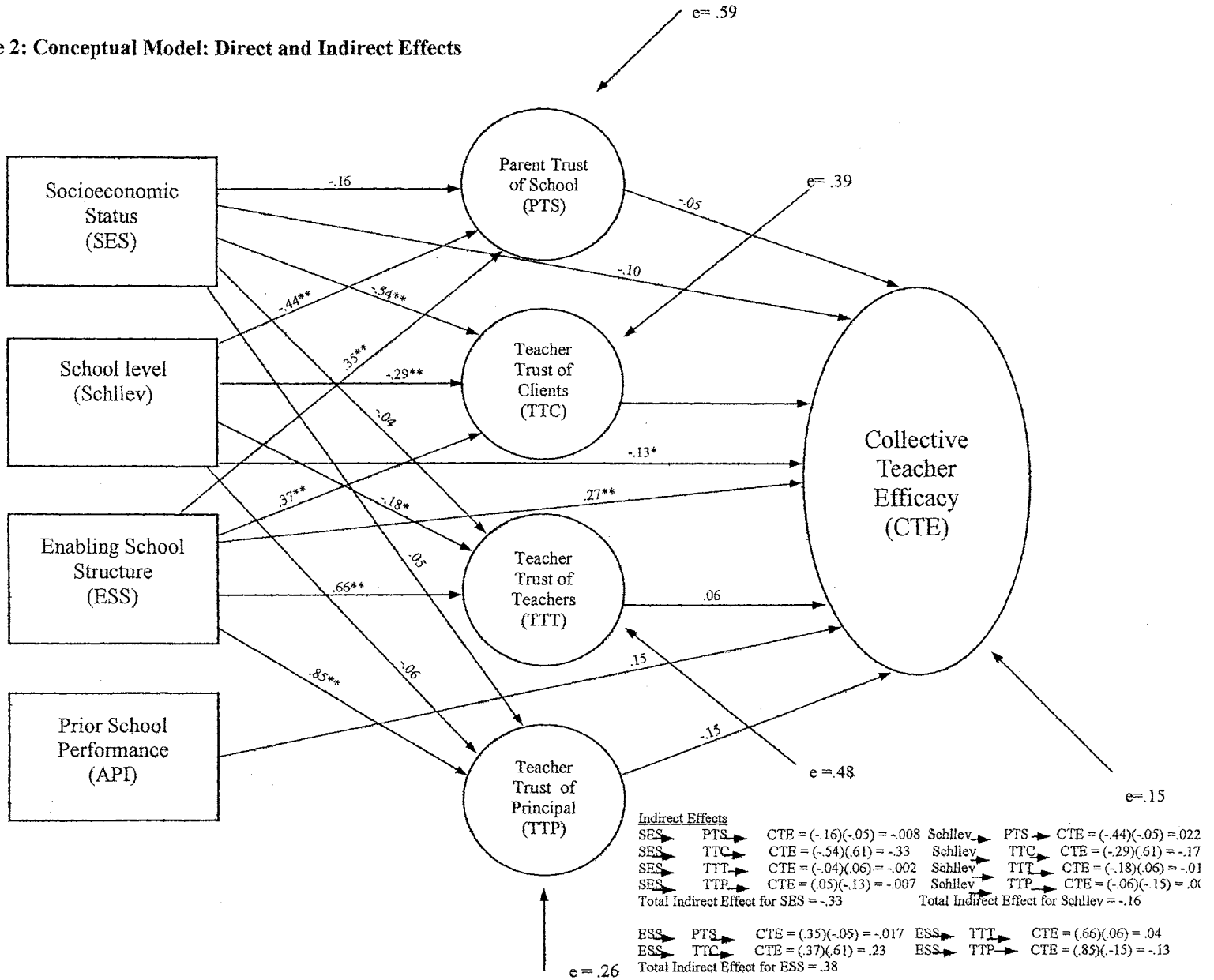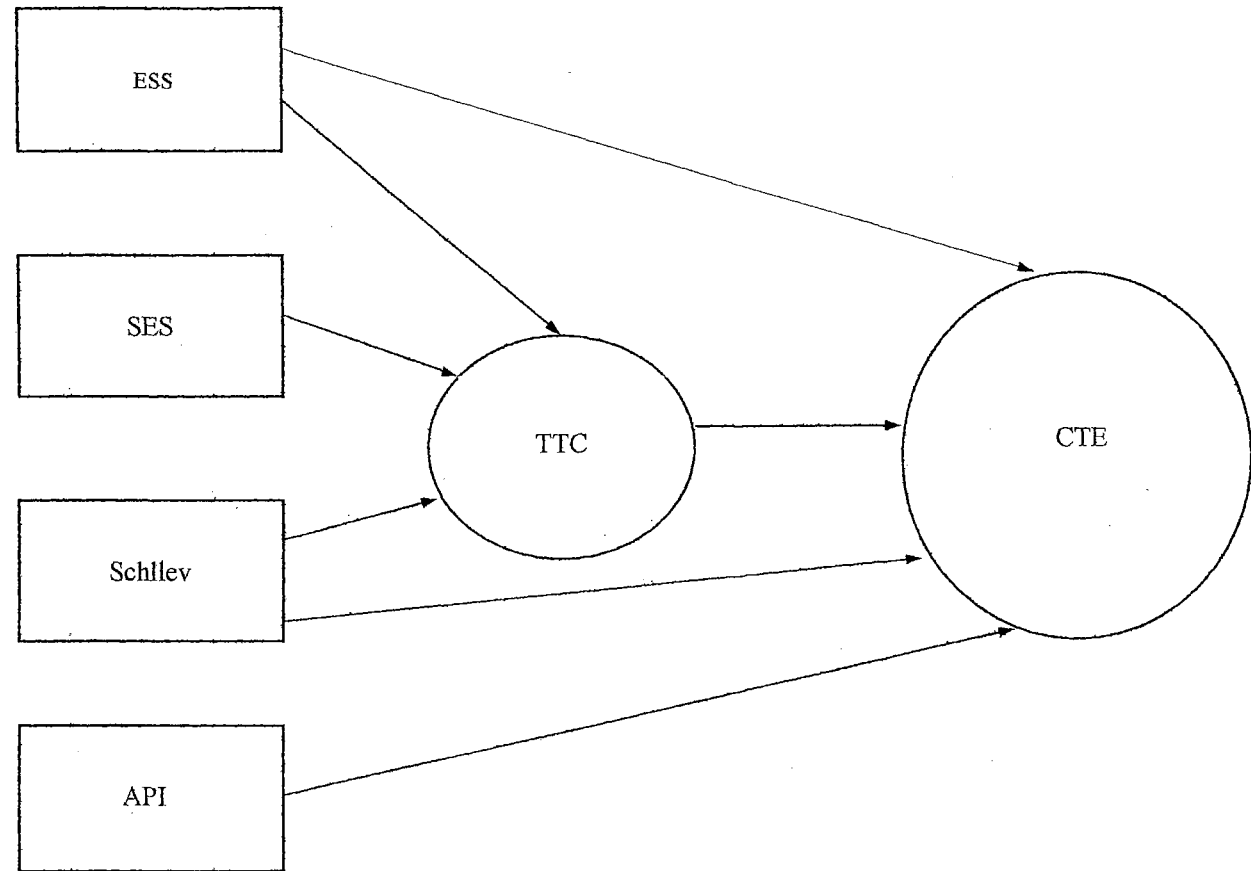|		
ESS → PTS →	CTE = (.35)(-.05) = -.017	ESS → TTT → CTE = (.66)(.06) = .04
ESS → TTC →	CTE = (.37)(.61) = .23	ESS → TTP → CTE = (.85)(-.15) = -.13

Total Indirect Effect for ESS = .38

Figure 3 Respecified Model

On the surface, these findings suggest that only the aforementioned significant predictors had a direct effect on collective teacher efficacy; however, careful inspection of the output elicited several questions about the effect of teacher trust of teachers, teacher trust of principal, parent trust of school, and prior school performance on collective teacher efficacy. The juxtaposition of the Beta coefficients for parent trust of school, teacher trust of teachers, teacher trust of principal, and prior school performance and the regression coefficients between each of these variables and collective teacher efficacy in Table 10 show contradictory findings. The correlational relationship for all four variables with collective teacher efficacy was positive and significant; however, the Beta weights for parent trust of school and teacher trust of principal were negative, implying an inverse relationship between the variables. Furthermore, the Beta weight for prior school performance was not significant at the .05 level, although four previous studies found it to have a significant effect on collective teacher efficacy (See: Goddard, Hoy, & Woolfolk Hoy, 2000, Smith, Hoy, & Sweetland, 2002; Goddard, 2002; Goddard, Hoy, & LoGerfo, 2003)). Moreover, in this study the intercorrelation of prior school performance and collective teacher efficacy was large, but its explanatory power was small.

Table 10: Comparison of Correlation Coefficients and Beta Weights

School Variables	Collective Teacher Efficacy	
	r	Beta
Teacher Trust of Teachers	.55**	.06
Teacher Trust of Principal	.47**	-.15
Teacher Trust of Clients	.90**	.61**
Parent Trust of School	.50**	-.05
Enabling School Structure	.56**	.27**
School Level	-.35**	-.13*
Socioeconomic Status	.59**	-.10
Prior School Performance	.72**	.15

The results presented in table 10 suggest that a suppression phenomenon is confounding the effect of certain predictor variables on collective teacher efficacy. Suppression results from the intercorrelation among independent variables suppressing the direct effect of an independent variable on the dependent variable (Cohen & Cohen, 1983). Suppression effects are identifiable in the multiple regression output when one of three conditions occur: if an independent variable has a zero bivariate correlation with the dependent variable; if the sign of the Beta weight is negative when the correlation between the two variables is positive; or if the Beta weight is greater than the correlation coefficient (Krus & Wilkinson, 1986). The second condition, a change in the Beta weight sign, occurred for the independent variables of teacher trust of principal and parent trust of schools (see table 10). Cohen and Cohen (1983) note, "Suppression is a phenomenon involving two or more [independent variables], and it is fully symmetrical or mutual. Whenever it can be said that X2 suppresses X1, it may also be said that X1 suppresses X2" (p.90). Since teacher trust of client explains the most variability in collective teacher efficacy, its predominant effect suppressed the influence of teacher trust of principal, teacher trust of teachers, parent trust of school and even prior school performance on collective teacher efficacy.

Hierarchical Regression

Since a suppression phenomenon was present in the regression of collective teacher efficacy, a hierarchical regression was performed. This regression technique measures the unique contribution of a predictor variable on the total variance of the

dependent variable while accounting for the influence of other predictor variables. Hierarchical regression allows the researcher to control for the individual effects of variables by ordering the entry of predictor variables into the model (Pedhazur, 1997). The change in the squared multiple correlation coefficient (R squared) at each stage of the regression (when new independent variables are entered) indicates the unique effect attributed to the newly entered variable(s). As seen in Table 11, the control variables of prior school performance, school level, and socioeconomic status were first entered in the regression. Consistent with findings from other studies, these variables account for a significant proportion of the variability in collective teacher efficacy (R squared = .605, p< .01). The addition of parent trust of school at model two increased the explained variability in collective teacher efficacy by .034 to an R square of .639 (p< .05). In model three, teacher trust of the principal increased the explained variability by .070 to an R square of .71 (p< .01). Teacher trust of teacher, entered in model four, further increased the explained variability in collective teacher efficacy by .026 (p< .05). The additions of enabling school structure in model five and teacher trust of client in model six increased the explained variability in collective teacher efficacy by .02 and .09 to .76 (p< .05) and .85 (p< .01) respectively.

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Table 11: Hierarchical Regression of Collective Teacher Efficacy on TTT, TTP, TTC, PTS, ESS, SES, Schllev, API. N = 75

Model	R	R Square	R Square Change	Beta Weight	Significance
1. Prior School Performance Socioeconomic Status School level	.778	.605**		.47 -.27 -.29	.00 .02 .001
2. Prior School Performance Socioeconomic Status School Level Parent Trust of School	.800	.639**	.034*	.44 -.25 -.18 .222	.00 .025 .041 .012
3. Prior School Performance Socioeconomic Status School Level Parent Trust of School Teacher Trust of Principal	.842	.710**	.070**	.43 -.23 -.17 .12 .29	.00 .014 .033 .131 .000
4. Prior School Performance Socioeconomic Status School Level Parent Trust of School Teacher Trust of Principal Teacher Trust of teachers	.857	.735**	.026*	.42 -.23 -.14 .12 .12 .25	.00 .016 .072 .145 .228 .012
5. Prior School Performance Socio Economic Status School Level Parent Trust of School Teacher Trust of Principal Teacher Trust of Teachers Enabling School Structure	.871	.758**	.023*	.41 -.22 -.173 .06 -.11 .21 .31	.00 .015 .023 .461 .393 .028 .015
6. Prior School Performance Socioeconomic Status School Level Parent Trust of School Teacher Trust of Principal Teacher Trust of Teachers Enabling School Structure Teacher Trust of Clients	.923	.853**	.095**	.15 -.10 -.13 -.05 -.15 .06 .27 .61	.077 .168 .033 .461 .144 .444 .008 .000

* p<.05

**p<.01

What does this mean? The results confirm the need to control for prior school

performance, socioeconomic status, and school level when explaining the variability of

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collective teacher efficacy. These three variables combined explain over 60 percent of the variance in collective teacher efficacy. More importantly, however, when teacher trust of clients and enabling school structure are removed from the analysis, parent trust of school, teacher trust of teachers, and teacher trust of principal each individually contributed to statistically significant increases in the variability of collective teacher efficacy. The Beta weights presented in each model of the hierarchical regression (table nine) illustrate the suppression effect that occurred among the trust variables when enabling school structure and teacher trust of clients are entered in the model. The intercorrelations among trust variables make it difficult to assess each variable's predictive power when they all are treated as predictors. The significant changes to R square when each dimension of trust was added to the model, however, indicated that each trust dimension had a unique effect on collective teacher efficacy.

CHAPTER VI

SUMMARY AND DISCUSSION

The purpose of this study was to examine the relationships among school structure, trust, and collective teacher efficacy. Specifically, the research was designed to identify the direct effects of school structure on the dimensions of trust and collective teacher efficacy, as well as the direct effect of trust on collective teacher efficacy. Bureaucracy theory, trust theory, and social cognitive theory formed the theoretical framework that undergirded the generation of the conceptual model. And, the conceptual model guided the design of the study. The focus on this chapter is to summarize the findings of the analyses within the context of the hypothesized relationships, to discuss the implications of the findings for theory and practice, and to raise questions and recommendations for future research.

Summary of Findings

This research was concerned with discovering the importance of enabling school structure in cultivating a trusting school climate, as well as in fostering collective teacher efficacy. Additionally, the research sought to identify the influence a trusting school environment has on collective teacher efficacy. One element of the school environment often neglected in empirical research but included in this study was parent trust. Since previous trust studies have not used the Parent Trust Scale to measure parent trust, findings pertaining to the psychometric properties of this scale will precede the summary of the hypothesized relationships.

The results of the exploratory factor analysis performed to assess the psychometric properties of the Parent Trust of School Scale, coupled with positive and significant bivariate correlations with the internal trust dimensions, suggest that the scale does operationalize the underlying construct of parent trust of school (results of the exploratory factor analysis are presented in table 1, and the bivariate correlations are found in table 3). The positive intercorrelations among parental trust and teacher trust also infer that the existence of teacher trust is associated with the presence of parent trust of school. Similarly, parent trust is also related to collective teacher efficacy, enabling school structure, and school performance. Interestingly, the negative relationship between school level and parent trust suggests that parent trust decreases as grade configuration increases.

The hypothesized relationships that form this inquiry can be divided according to the endogenous variables of the conceptual model. The first four hypotheses involved the relationship between enabling school structure and each of the four dimensions of trust (teacher trust of teacher, teacher trust of principal, teacher trust of client, and parent trust of school). Enabling school structure was predicted to have a direct effect on each of the trust variables. These predictions were supported by the results; the more enabling a school structure, the greater the levels of parent trust of school, teacher trust of teachers, teacher trust of clients, and teacher trust of principal. That is, rules, regulations and control structures that foster collegiality, cooperation, collaboration and problem solving engender trust among teachers and parents. The control variables of socioeconomic status and school level also independently explained variance in the trust variables. Both socioeconomic status and school level accounted for a significant proportion of

variability in teacher trust of clients. For parent trust, only school level had a direct effect, and teacher trust of principal was not significantly influenced by either control variable.

The last five hypotheses concerned the relationships among the trust variables, enabling school structure, and collective teacher efficacy. It was hypothesized that each dimension of trust (teacher trust of teachers, teacher trust of principal, teacher trust of clients, and parent trust of school) and enabling school structure would have a direct effect on collective teacher efficacy. Hypotheses seven and nine were supported by the regression analysis. Enabling school structure and teacher trust of clients influenced the formation of collective teacher efficacy within schools. In addition, school level was discovered to negatively influence collective teacher efficacy. Inferring from these results, the only plausible cause and effect relationships within the conceptual model involved the relationships between enabling school structure and collective teacher efficacy, teacher trust of clients and collective teacher efficacy, and school level and collective teacher efficacy. However, a suppression effect caused by strong intercorrelations among the trust variables concealed the unique effect of parent trust of school, teacher trust of teachers, and teacher trust of principal on collective teacher efficacy.

The presence of a suppression phenomenon within the set of predictor variables for collective teacher efficacy evoked questions about the effect of teacher trust of teachers, teacher trust of principal, parent trust of school, and prior school performance on collective teacher efficacy. For this reason, collective teacher efficacy was hierarchically regressed on the set of predictors. After controlling for school level,

socioeconomic status, and prior school performance, each of the trust variables increased the explained variance of collective teacher efficacy by a statistically significant amount when individually entered into the regression. These findings help reveal the effect of the other trust dimensions on collective teacher efficacy. Even though teacher-client trust accounts for a substantial proportion of the variability in collective teacher efficacy, the other dimensions of trust are also important for collective efficacy formation.

Discussion of Findings

The hypothesized relationships guiding this research were derived from the theoretical and empirical knowledge about the causes and consequences of trust, as well as efficacy formation. While these phenomena exist in many social levels, such as the organizational level, individual level, community level, etc., this study was concerned with examining their presence in schools. This required analyzing the influence of school structure, school socioeconomic status, school level, and prior school performance on the presence of these concepts.

Trust was theoretically 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" (Hoy & Tschannen-Moran, 1999, p. 189). The notion of confidence that another party possesses the five facets of trust implies the existence of prior knowledge about the latter party. This implies that trust is formed through interactions or relationships that develop and change over time. Theory supports this belief. Lewicki and Bunker (1996) believe that trust formation is predicated on positive interactions and experiences that foster familiarity between two parties. Byrk

and Schnider (2003) conceptualize trust in schools as existing within the social interaction and interdependent relationships among teachers, parents, and students. In order for trust to exist, these interactions must elicit confidence in the trustor that the trustee possesses, at some level, the facets of trust.

The question underlying this research, as well as the first four hypotheses, pertained to the influence a school's structure has on trust formation. School structure was conceptualized as being either enabling or hindering, depending on the formalization and control structure of the school. Enabling structures use the bureaucratic elements of formalization and centralization to engender collaboration, communication, and problem solving among stakeholders, whereas hindering structures use these characteristics to force compliance to rigid rules and regulations (Hoy & Sweetland, 2000, 2001). Findings from this study support the importance of transforming bureaucratic characteristics within schools from hindering barriers that isolate and encapsulate to enabling structures that integrate and empower. Data from this study show that enabling structures foster a climate of trust within the school environment. Teachers are more inclined to trust other teachers, to trust their principal, and to trust students and parents when structures are perceived to be enabling. Moreover, parents are more trusting of schools.

How do these findings contribute to theory and practice? Discovering that enabling school structures influence trust is consistent with the theoretical argument that trust within organizations develops through interdependent relationships, social interaction, collaboration, and cooperation. Enabling formalization and centralization cultivate an environment that supports the type of relationship-building and social interaction necessary for trust production. Furthermore, these findings support the

contradictory perceptions of bureaucratic structures found within the literature (Adler & Borys, 1996, Adler, 1999; Hoy & Sweetland, 200, 2001). Bureaucracies can either cultivate a healthy and effective climate in schools, or they can foster alienation and discontent. Enabling formalization and centralization achieves the objective of the former, while the antithesis, hindering and rigid formalization and centralization, engenders the latter. The findings of this study support the conjecture that schools do not need an elimination of bureaucratic elements, but instead need to reconfigure how theses structures are used.

This study also makes an empirical contribution to the educational literature by confirming a previous finding by Hoy and Sweetland (2001) on the positive effect of enabling school structure on teacher trust of teachers and teacher trust of principal. Furthermore, this study adds to the extant literature by discovering the influence of school structure on the formation of teacher trust of clients and parent trust of school. These findings imply that effects of bureaucratic structures are not isolated to the working relationships among teachers and administrators, but the effects also encompass teachers' perceptions of students and parents, as well as parents' perceptions of schools.

The findings concerning the effect of enabling school structures on trust also have profound implications for practicing administrators. These results suggest that formalization and control structures within schools should be used to foster interrelationships among teachers, students, and parents for the purpose of building a climate of trust. Practical examples of principals using formalization and centralization structures that enable include: administrators who are present, visible, and available for teachers, parents, and students; administrators who work with teachers to promote student

learning; schedules that provide time and opportunities for teachers to collaborate with teaching colleagues, as well as with administrators; structures that allow for professional autonomy and teacher ownership; opportunities for parents to be involved in the educational process; schedules and policies that enhance teachers' ability to listen, learn, and understand the needs of their students; and policies that are fair and equitable. Using school structures to promote the above behaviors will help build a trusting environment within schools, which in turn helps create a social capital that collectivizes stakeholders around a common vision of education. If, however, the formalization and hierarchical control structures are used in a coercive manner, the lubricant for an effective learning community, trust, will be missing.

Understanding the influence school level and socioeconomic status have on parental trust and teacher-client trust might help practicing administrators create a healthy learning environment. It is not surprising that findings from this study suggest parent trust of school and teacher trust of clients dissipate in the middle school and high school years. Elementary schools conjure up images of open environments, interdependent relationships, parent involvement, and individualized/student centered classrooms. These descriptions are not as congruent with middle school and high school environments. Generally, as grade configuration increases so does class size and school size; students start having more than one teacher; teachers start having more than 20 students; teaching assignments become departmentalized; students begin to desire more independence and responsibility; and parents tend to not be as involved with school. Recognizing how the innate characteristics of schools have the potential to dictate the type of interpersonal and

interdependent relationships within the school community might be useful knowledge for administrators.

Finding that low socioeconomic status negatively affects teacher trust of clients parallels an earlier finding by Goddard, Tschannen-Moran, and Hoy (2001) concerning this same relationship. The implications for a lack of teacher-client trust among students and parents from low socioeconomic backgrounds are significant. Teachers might be less willing to experiment with innovative pedagogies and curricula, to increase collaboration and communicate with parents, to empower students to intrinsically value learning, to encourage student ownership for learning, to be less custodial with behavior regulation, and to develop relationships with students and parents. Goddard, Tschannen-Moran, and Hoy state, "when teachers believe their students are competent and reliable, they create learning environments that facilitate student academic success" (p.24). Conversely, teachers who do not trust clients might be less inclined to foster environments that engender student learning. Understanding the potential for distrust among students, teachers and parents from different socioeconomic backgrounds might be useful knowledge for administrators desiring to create healthy school climates.

The second half of the conceptual model, the effects of trust, school structure, and the control variables (prior school performance, school level, and socioeconomic status) on collective teacher efficacy, produced results that refined the theoretical understanding of efficacy formation. Additionally, findings raised questions about the relationship between the conceptual model underlying the research and the outcome produced by the analytical design. According to the findings, enabling school structure, teacher trust of clients, and school level are antecedent conditions of collective teacher efficacy;

however, within the conceptual model teacher trust of teachers, teacher trust of principal, and parent trust of school did not possess enough explanatory power to compete with the preponderant effect of teacher trust of client on collective teacher efficacy. Confirming the hypothesized direct effects of enabling school structure, teacher trust of clients, and school level on collective teacher efficacy supports the theory of collective efficacy formation. Discovering suppression effects, however, raised additional questions about the influence of trust on collective efficacy.

The confluence of two theoretical strands forms the conceptual and operational definition of collective teacher efficacy. Collective teacher efficacy is derived from the sources of efficacy formation embedded within Bandura's social cognitive theory, as well as an analysis of the teaching tasks and an analysis of teaching competence (Goddard, Hoy, & Woolfolk Hoy, 2000). These latter two elements originate from Rotter's (1967) locus of control theory and are part of the integrated definition of teacher efficacy developed by Tschannen-Moran, Woolfolk Hoy, and Hoy (1998). Prior studies (Goddard, Hoy, & Woolfolk Hoy, 2000; Smith, Hoy, & Sweetland, 2002; Goddard, Hoy, & LoGerfo, 2003) have found the sources of efficacy formation, mastery experience, vicarious experience, social persuasion, and affective states, to be important for the cultivation of collective teacher efficacy. The most significant source has been the influence of mastery experience, operationalized as prior academic achievement, on collective teacher efficacy (Goddard, Hoy, & Woolfolfk Hoy, 2000; Smith, Hoy, & Sweetland, 2002; and Goddard, Hoy, LoGerfo, 2003). Results from this study, however, highlight the importance of the second theoretical strand, analyses of the teaching tasks and teaching competence, for collective efficacy formation.

An analysis of the teaching task refers to teacher perceptions of the impediments and challenges encountered by teachers, while an analysis of competence refers to teacher perceptions about the faculty's and students' skills, knowledge, methods, and abilities (Goddard, Hoy, and Woolfolk Hoy, 2000). These combined analyses form a perception of the context in which teaching occurs. The teaching context not only shapes teacher perceptions, but also influences the sources of efficacy information. Results showing that school structure, teacher trust of clients, and school level influence collective teacher efficacy suggests that the teaching context is just as instrumental as the sources of efficacy information in shaping collective efficacy in schools.

School structures used to create a supportive teaching context enable teachers to perceive the teaching task positively and enthusiastically. On the other hand, structures that force compliance to rigid rules and regulations will not evoke positive perceptions of the teaching context. Since enabling school structure is a contextual variable, it seems reasonable that its influence on collective teacher efficacy works through the teaching context. This does not imply, however, that its effect is mutually exclusive of the sources of efficacy information. Theory suggests that using structure to cultivate a supportive and healthy teaching context can also address the sources of efficacy information. For example, an enabling structure might create a positive teaching environment by supporting vicarious experiences of teachers within the school, by recognizing and rewarding outstanding and innovative teaching, by increasing teacher collaboration, and by providing verbal encouragement and support for teachers. Nonetheless, these are the byproducts of a formalization and centralization structure that produces a healthy teaching context. Enabling structures must first be in place for teachers to undergo

efficacy shaping experiences. In other words, the teaching context must promote the sources of efficacy formation.

The direct effect of teacher trust of clients on collective teacher efficacy also promulgates the importance of the teaching context for collective efficacy formation. Analyses of the teaching context, encompass teachers' perceptions of colleagues' and students' competence. The dominating effect of teacher trust of clients on collective teacher efficacy suggests that collective efficacy within schools heavily depends on teacher perceptions of students' and parents' competence. Since competency is a facet of trust, high levels of teacher client trust implies the existence of higher levels of teacher perceived student competence. Teacher-client trust works through the analysis of the teaching context dimension to foster collective teacher efficacy in schools. Similar to enabling school structure, the influence of teacher trust is not confined to the teaching context. A byproduct of increased trust is positive affective states, but trust, which promotes a positive perception of the teaching context, must first exist.

The importance of trust for fostering a positive perception of the teaching context, as well as its collateral influence on the sources of efficacy information is illuminated by the powerful effect of teacher trust of clients on collective teacher efficacy. While teacher trust of client has a predominant effect on collective teacher efficacy, the effects of the other dimensions of trust, teacher trust of teachers, teacher trust of principal, and parent trust of school were not revealed by the analytical design. Nonsignificant direct effects for the other trust dimensions in the analysis do not disconfirm theory underlying their hypothesized relationships with collective teacher efficacy. Instead, the finding of a suppression phenomenon suggested the true effect of each trust dimensions was

suppressed by teacher trust of clients. By running a hierarchical regression to control for the suppression effect, the importance of the other trust dimensions on collective efficacy formation is supported. When each new trust variable was added to the model, the incremental increase in explained variance was significant. These findings suggest that a trusting school environment creates a perception of the teaching context that engenders collective teacher efficacy, even though the primary analytical technique, path analysis, did not support these hypothesized relationships between teacher- teacher trust, teacher-principal trust, parent-school trust and collective teacher efficacy.

Prior to this study, antecedents of collective teacher efficacy have included school norms that affect the four sources of efficacy information (Goddard, Hoy, & Woolfolk Hoy, 2000; Smith, Hoy, Sweetland, 2002), or contextual variables that school administrators cannot control, such as socioeconomic status, school size, or school type (Goddard, Hoy, & LoGerfo, 2003). With the finding that school structure and trust are also antecedents of collective teacher efficacy, this study uncovered the importance of the teaching context for collective efficacy formation. In fact, the context of teaching must be teacher friendly, supportive, and healthy for the sources of efficacy information to be present within the normative environment of schools. Formalization and control structures that enable problem solving, collaboration, collegiality, and cooperation among the faculty provide a fertile teaching context for the sources of efficacy information to grow. Without this context, the sources of efficacy information would wither and die. Trust, which is an outcome of an enabling school structure, also cultivates the type of teaching context needed for collective efficacy to survive. The negative effect of school level on collective teacher efficacy also makes known the importance of the teaching

context on collective efficacy formation. Generally, the context of teaching is much more supportive of the efficacy forming experiences in elementary schools than middle and high schools.

Findings concerning the importance of enabling school structure, trust, and school level for fostering collective efficacy have several implications for practicing school administrators. Smith Sweetland, and Hoy (2002) note the need for administrators to be knowledgeable about the four sources of efficacy information. Results from this study suggest that administrators might also consider the effect of school structure on collective teacher efficacy. Developing a contextual environment favorable to the sources of efficacy information first requires an enabling school structure. Such a structure might then shape the normative environment of the school. Even though administrators cannot control federal and state mandates, as well as socioeconomic status, school level, school size, or school type, they can influence the teaching and learning context within their schools. It is this context, not the actual mandates, policies, or legislation, that influences learning. Findings from this research demonstrate the ability of bureaucratic elements within schools to engender the necessary social interaction and interdependent relationships to imbue the normative climate with trust and collective efficacy. And these social phenomena are part of the ingredients for school effectiveness.

Recommendations for Future Research

The findings of this research generated several suggestions for future inquiries. These suggestions are categorized by the principal constructs of the conceptual model: enabling school structure, trust, and collective teacher efficacy.

Finding that school structure influences trust and collective teacher efficacy formation in schools supports the notion that bureaucratic structures can be used to create a positive or negative working environment. It is clear that while all schools possess bureaucratic elements, some schools are able to work within these elements to create enabling structures. Why is this the case? Since school structure was treated as an exogenous variable in this study (its variance was explained by variables outside of the model), antecedents to an enabling school structure were not discovered. These findings encourage the examination of factors, constructs, or phenomena that lead to more enabling school structures. Possible questions include: How does leadership behavior influence school structure? What role does the socioeconomic status of students play in shaping school structure? Does school size and school level affect school structure?

The conceptualization of school structure as consisting of either enabling or hindering formalization and centralization structures excludes other bureaucratic characteristics such as division of labor, technical competence, or a codified management system. The intricate relationships among these elements should also be considered when analyzing school structure. How do these factors contribute to the degree by which a school structure is more enabling or hindering? For example, how do formalization and centralization structures influence job responsibilities, intraschool and intradistrict communication, or professional development?

In addition to examining antecedents of enabling school structure, continual research on the effects of school structure is recommended. Specifically, how does school structure influence academic achievement? Findings from this study suggest an indirect effect of enabling school structure on academic achievement through collective

teacher efficacy, but what about a direct effect? How does enabling school structure influence student identification with school, as well as student motivation to learn? What is the effect of enabling school structure on parent, student, and teacher satisfaction with school? Furthermore, research could identify characteristics of schools that possess enabling structures.

Conceptually, trust develops among stakeholders in an organization when interpersonal relationships between two parties generate perceptions that the other is open, honest, reliable, competent, and benevolent. Initially, these perceptions are calculations about the other person, but over time and through positive outcomes of the relationship a level of trust develop. Within schools, supportive leadership (Hoy, Tarter, & Witkoskie, 1992; Tarter, Sabo, & Hoy, 1995), enabling structures (Sweetland & Hoy, 2000, 2001), faculty collegiality (Hoy, Tarter, & Witkoskie, 1992; Tarter, Sabo, & Hoy, 1995), healthy climates (Hoy, Sabor, & Barnes, 1996; Smith, Hoy, & Sweetland, 2001), and collaboration (Tschannen-Moran, 2001) influence trust among teachers and teacher trust of principals. This research, however, established the first knowledge claim about parent trust of school from the perspective of parents. Theoretically, trust among parents and schools is the same as teacher trust. That is, parent trust is based on parent perceptions that stakeholders in the school are open, honest, reliable, benevolent, and competent. In spite of the similar properties of trust, the relationships shaping parent trust and the reasons for parent trust may differ from the reasons for teacher trust. Findings from this research indicate that enabling school structures contribute to parent trust, as well as teacher trust in schools. However, it is for future research to discover other predictors of parent trust; to investigate the reasons why parents trust schools, to

identify if certain facets of trust are more important to parents than other facets, to discover the effect of contextual variables on parent trust, and most importantly to examine the effects of parent trust on school and student outcomes.

Since trust is a social norm that permeates an organization (contingent on its existence) it is also important to extend the line of inquiry into its causes and effects to administrators and students. If positive social interactions and interpersonal relationships cultivate trust among teachers and parents, what effect will these relationships have on administrators and students? More importantly, what outcomes will be produced with high levels of student and administrator trust. Understanding the influence of trust on the school environment requires an extension of the underlying conceptual and operational definition of trust to students and administrators. The only way to understand the influence of a trusting environment on school performance is to analyze trust from the perspective of all stakeholders.

Prior to this study, it was believed the manifestation of collective teacher efficacy in schools occurred through the four sources of efficacy information embedded within Bandura's social cognitive theory. This study, however, discovered that the second theoretical strand of the Goddard's conceptual definition of collective teacher efficacy, teacher analyses of the teaching task as well as the competence of teaching colleagues and students, also contributes to collective efficacy formation. The relationship between the two theoretical strands is inextricable and reciprocal. A healthy and supportive context of teaching fosters the presence of the sources of efficacy information and the sources of efficacy information cultivate a positive teaching context. Now that the significance of the teaching context in efficacy shaping is empirically known, future

research needs to continue investigating the influence of contextual constructs on collective teacher efficacy. Other variables affecting how teachers analyze the teach task include the availability of instructional resources, monetary expenditures, perceptions of high stakes testing, and perceptions of accountability systems. Continuing to examine variables that influence the teaching tasks and teacher perceptions of colleague and student competence will shed more light on the interplay between the two theoretical stands in the conceptual definition of collective teacher efficacy.

The final recommendation involves the conceptual model underlying this research. Since the focus of this inquiry was on the direct relationships among enabling school structure, trust, and collective teacher efficacy, the overall model fit was not analyzed. Moreover, since path analysis was used as the statistical technique, as opposed to structural equation modeling (SEM), plausible reciprocal relationships between variables were not included in the model. Future research should advance the knowledge concerning the constructs in this study by developing a conceptual model that tests the system of relationships among the variables in this study with SEM. SEM will allow the researcher to examine the structural and measurement components of the model, compare competing models, and test for the reciprocal relationships among variables in the model.

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APPENDICES

Sample Demographics: Percentage of Students Qualifying for the Federal Free or
Reduced Lunched Program

perFRlu
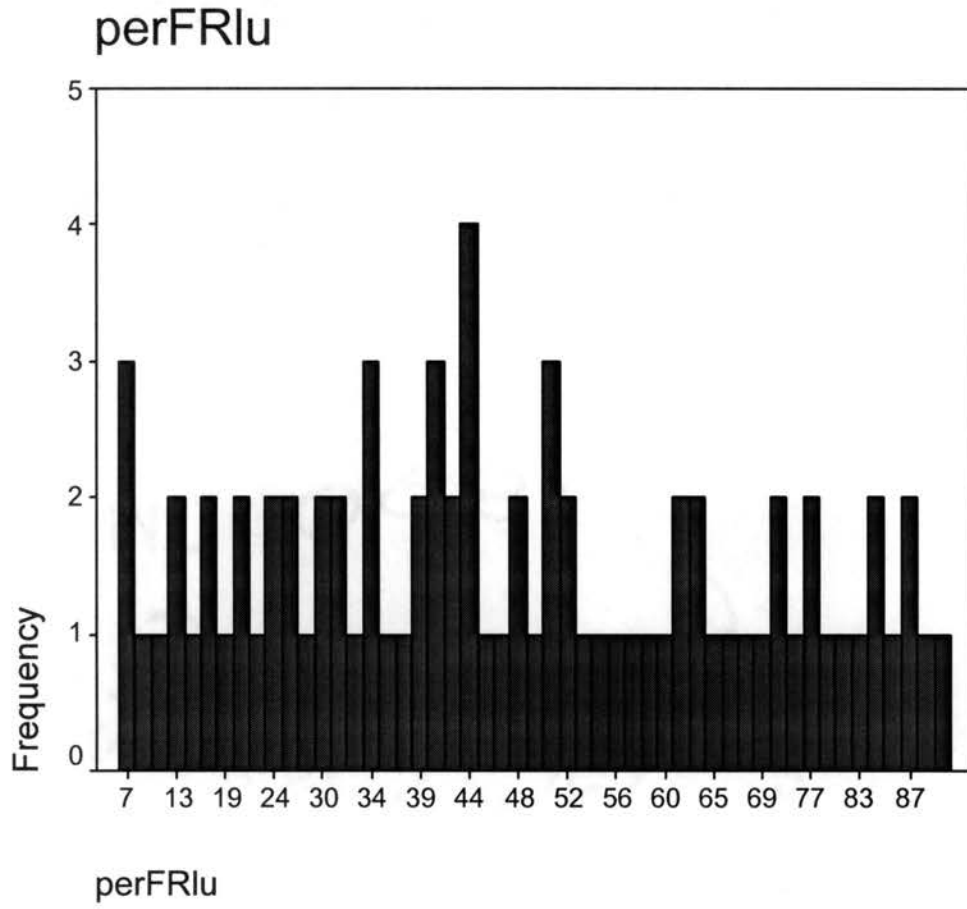
Sample Demographics: Percentage of Native American Students

perNA
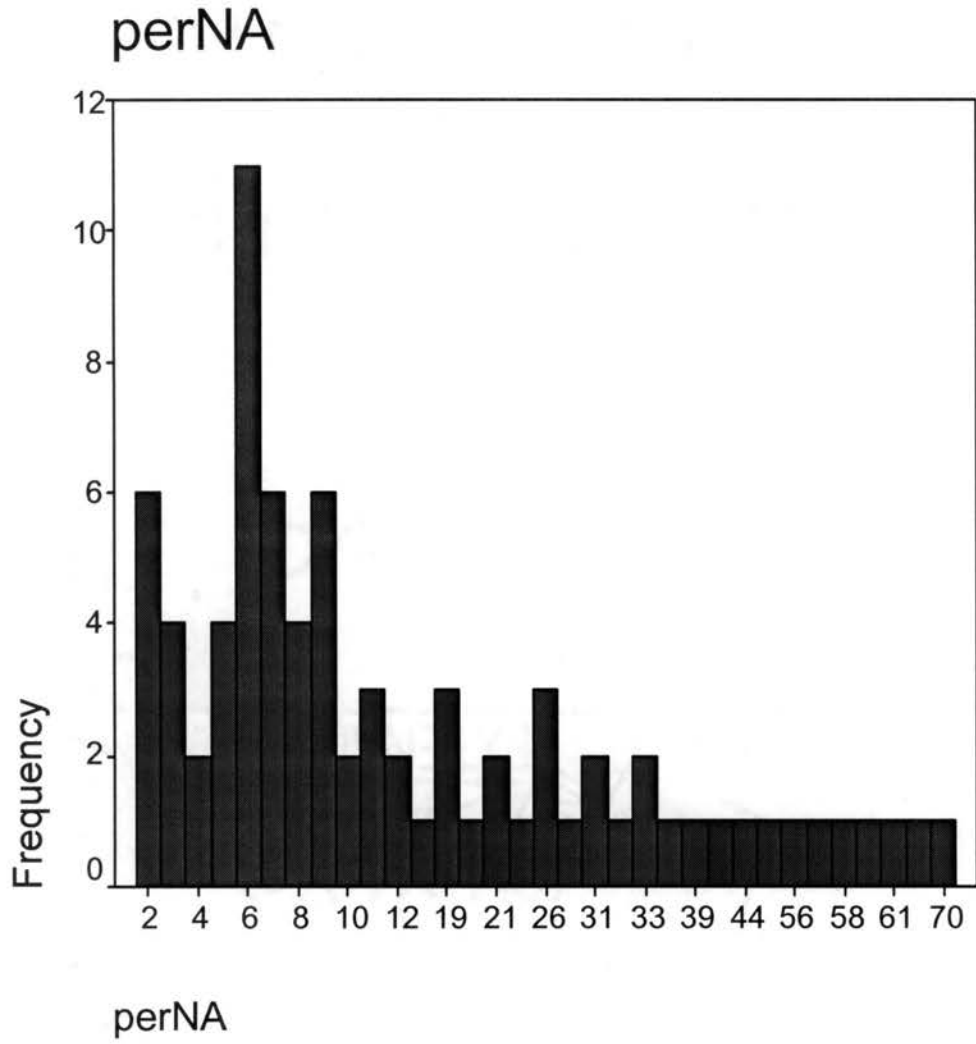
Sample Demographics: Percentage of Asian Students

perAsian

perAsian
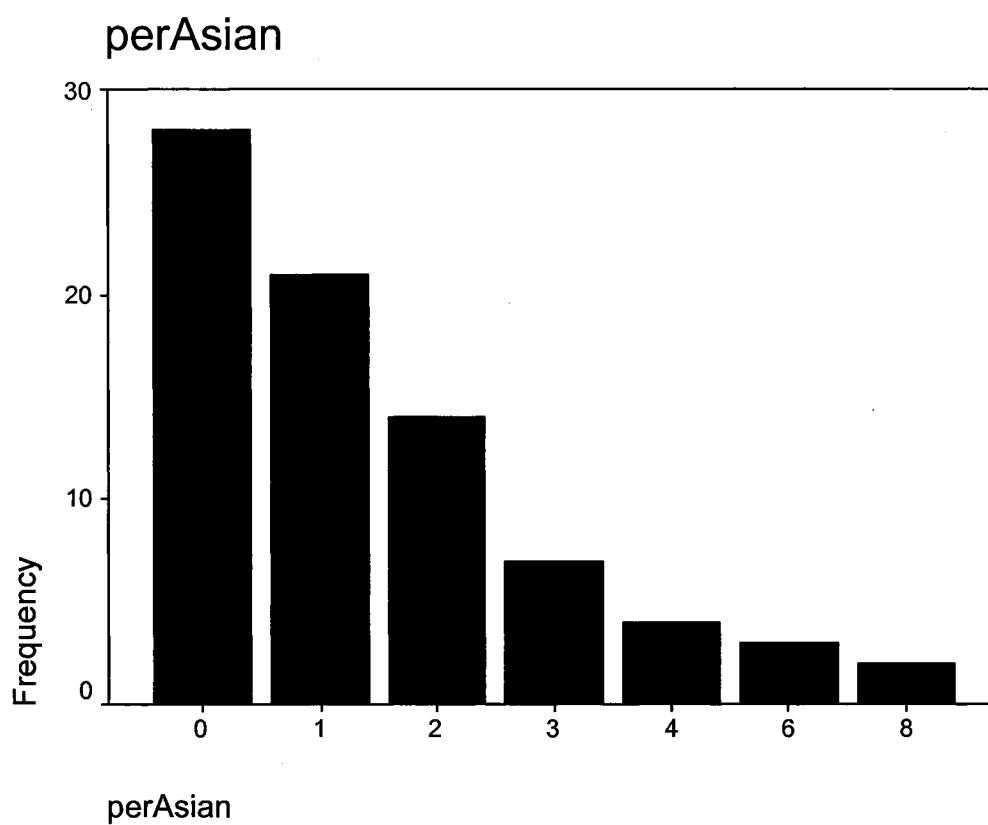
APPENDIX D

Sample Demographics: Percentage of Hispanic Students

perHisp

perHisp

Sample Demographics: Percentage of Black Students

perBlack

perBlack
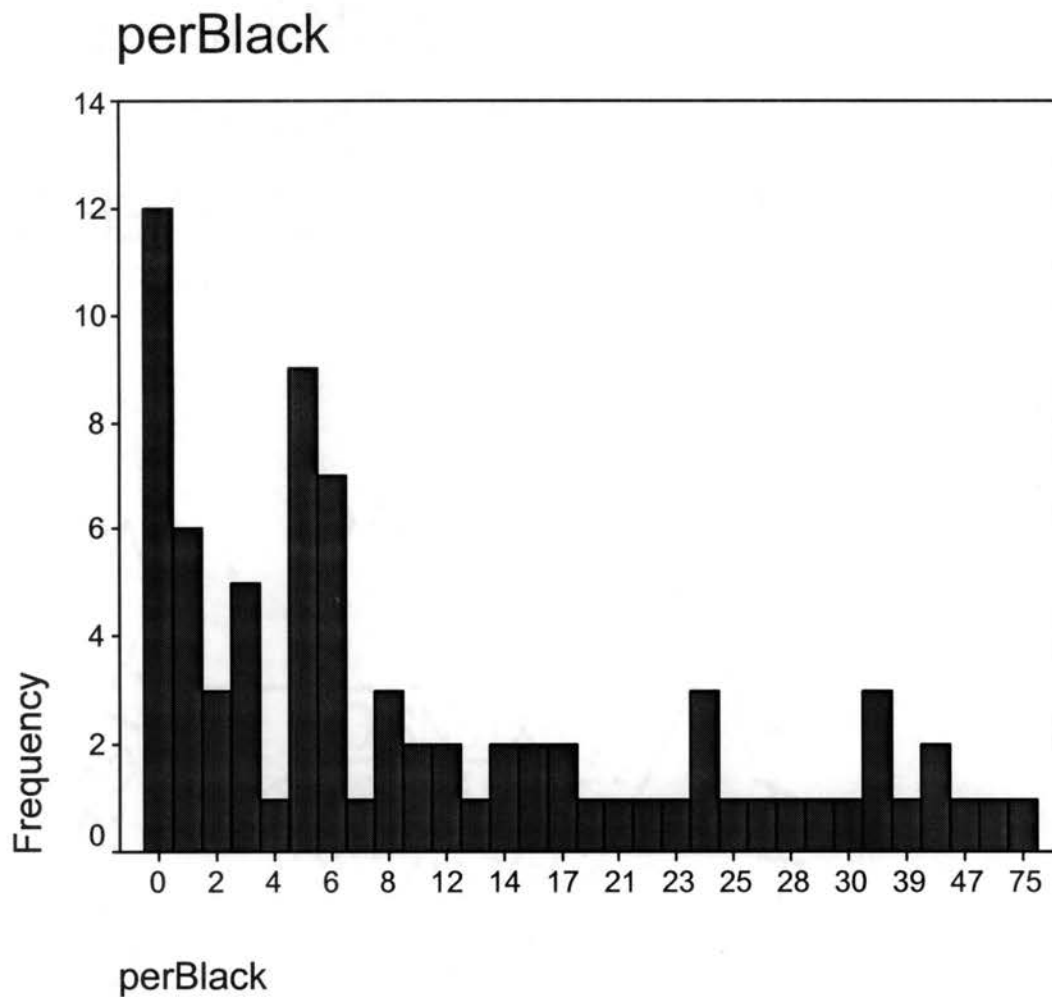
Sample Demographics: Percentage of White Students

perWhite

perWhite
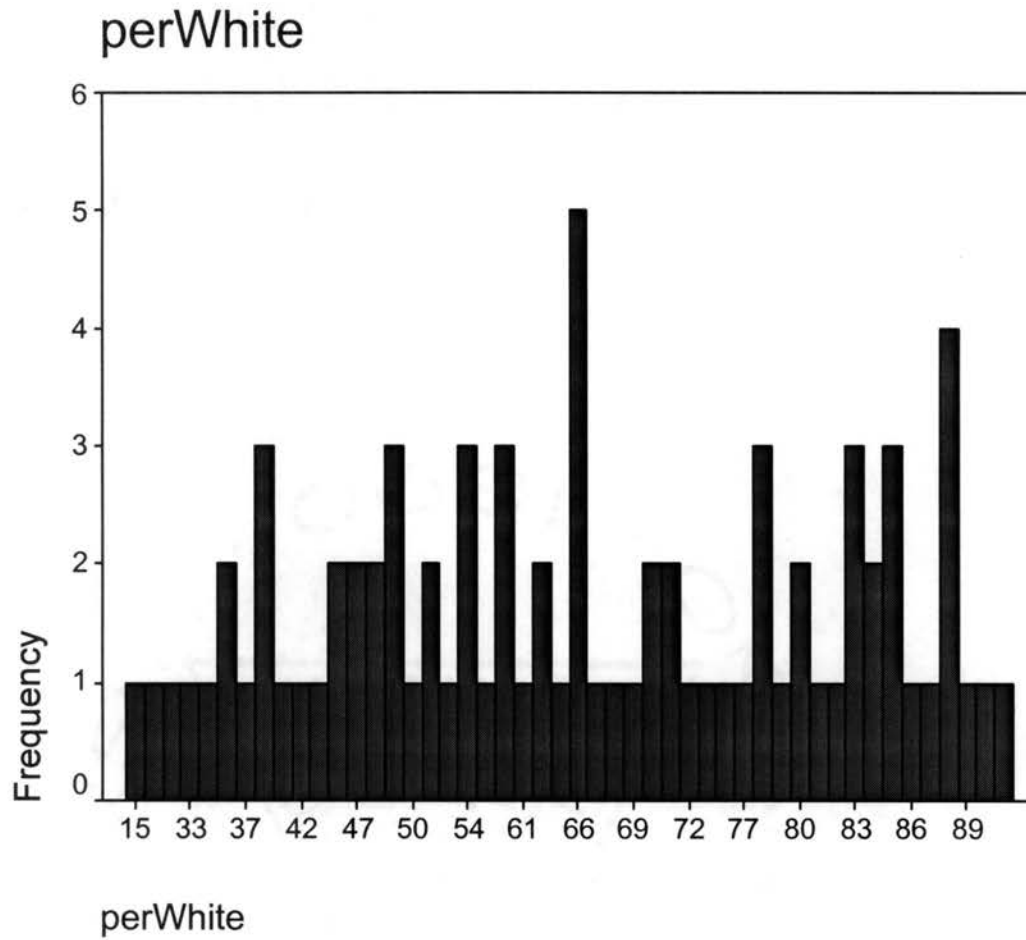
Sample Demographics: Population of Residents Living within the School District

Dist#pop#
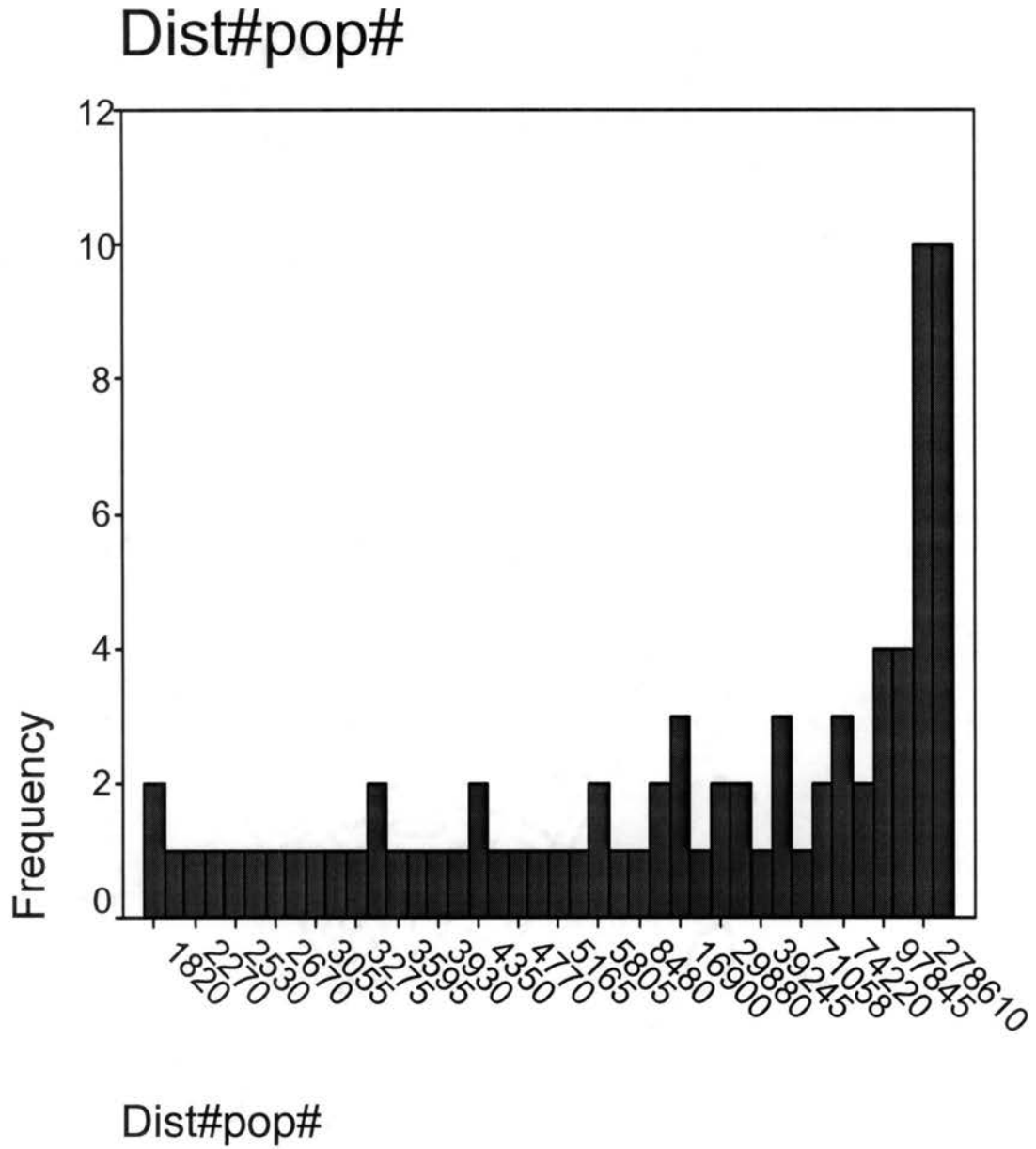
APPENDIX H

Sample Demographics: School Enrollment

Enroll
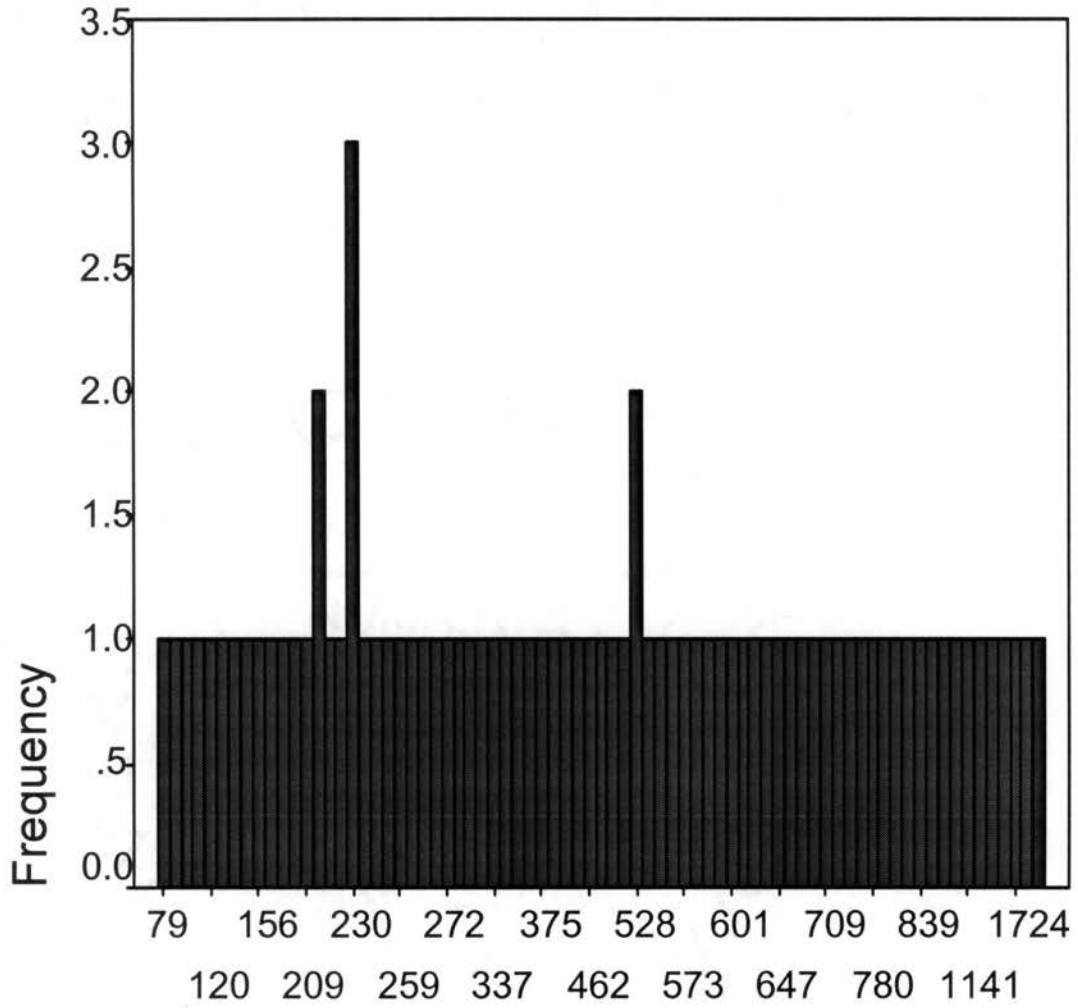
Enroll

Scatter Plots: Teacher Trust of Teachers

Scatterplot

Dependent Variable: TTTAG2_1
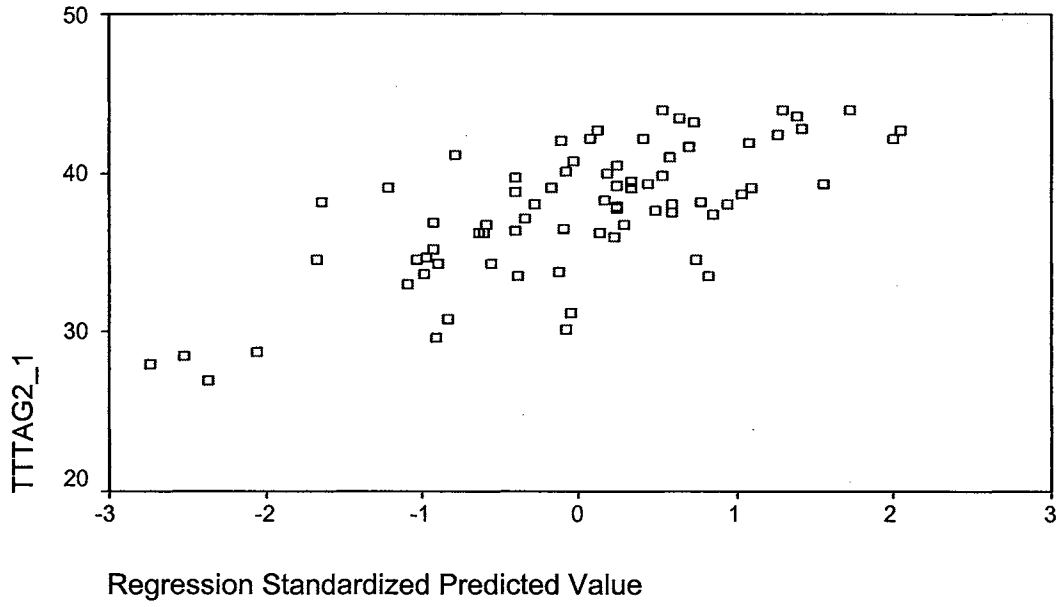
Regression Standardized Predicted Value

Scatterplot

Dependent Variable: TTTAG2_1

Regression Standardized Residual
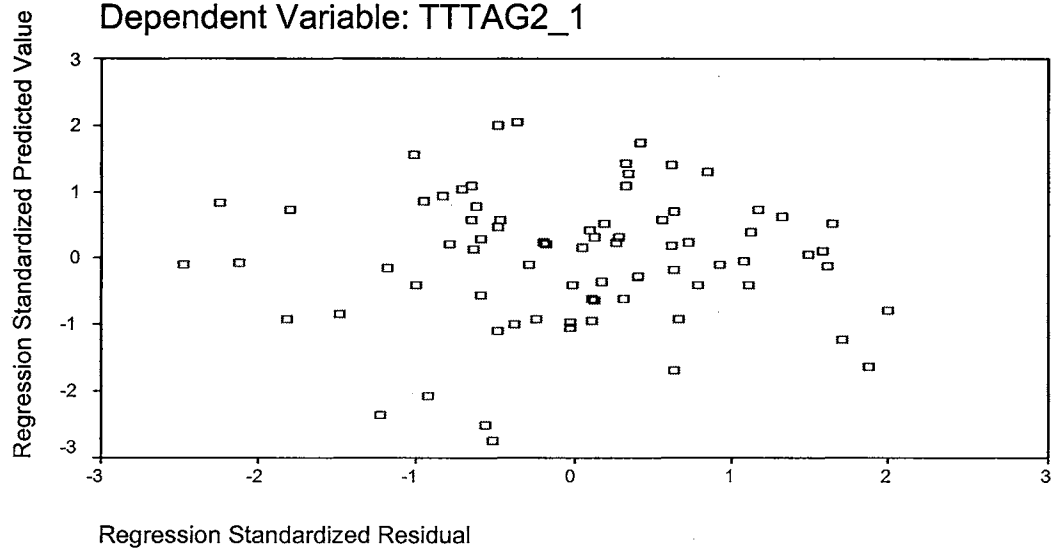
Scatter Plot: Teacher Trust of Principal

Scatterplot

Dependent Variable: TTPAG2_1

Regression Standardized Predicted Value

Scatterplot

Dependent Variable: TTPAG2_1
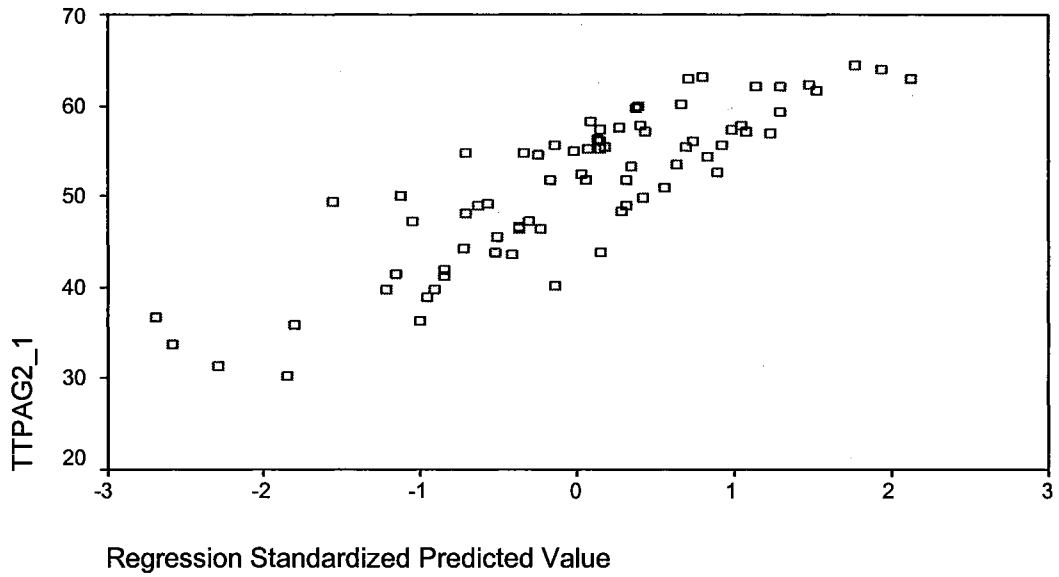
Regression Standardized Residual
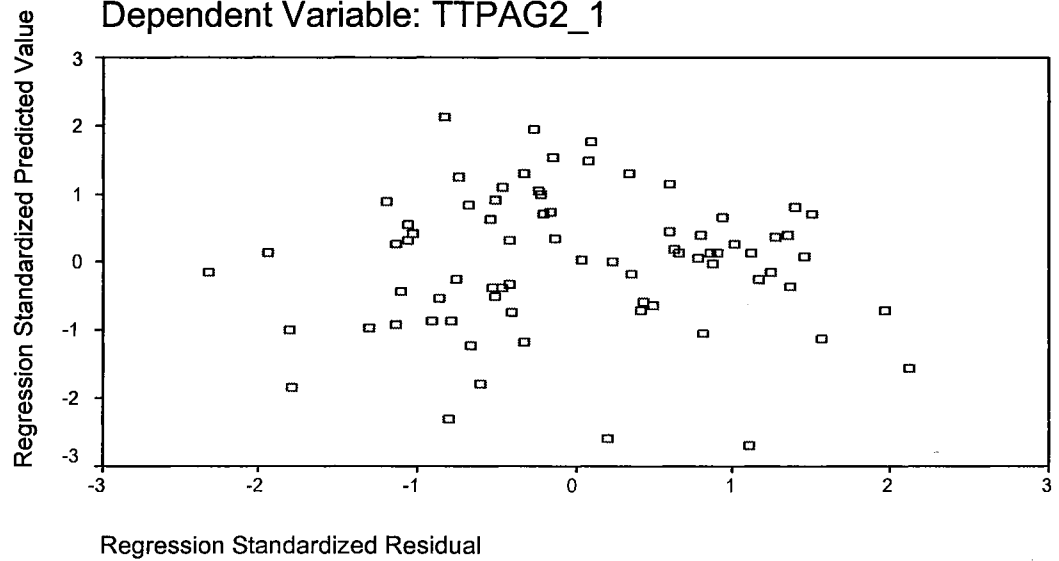
APPENDIX K

Scatter Plot: Teacher Trust of Clients

Scatterplot

Dependent Variable: TTCAG2_1
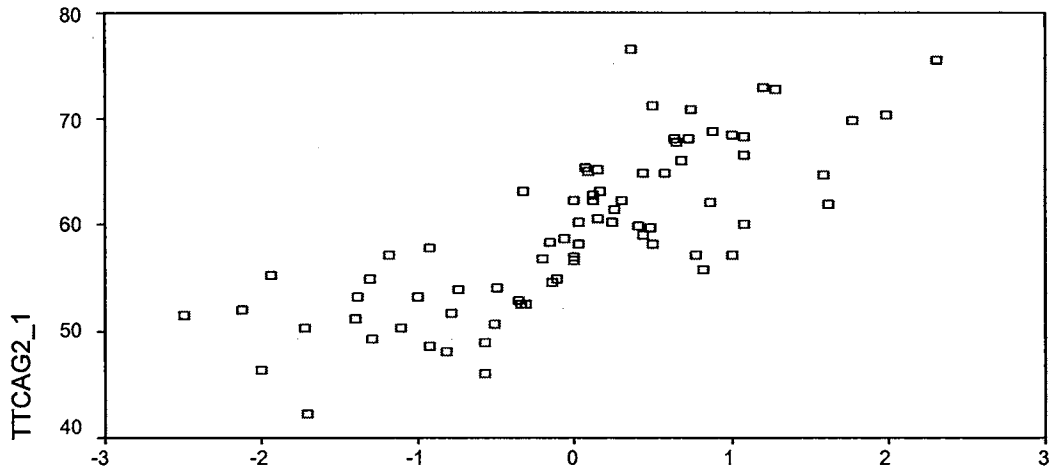
Regression Standardized Predicted Value

Scatterplot
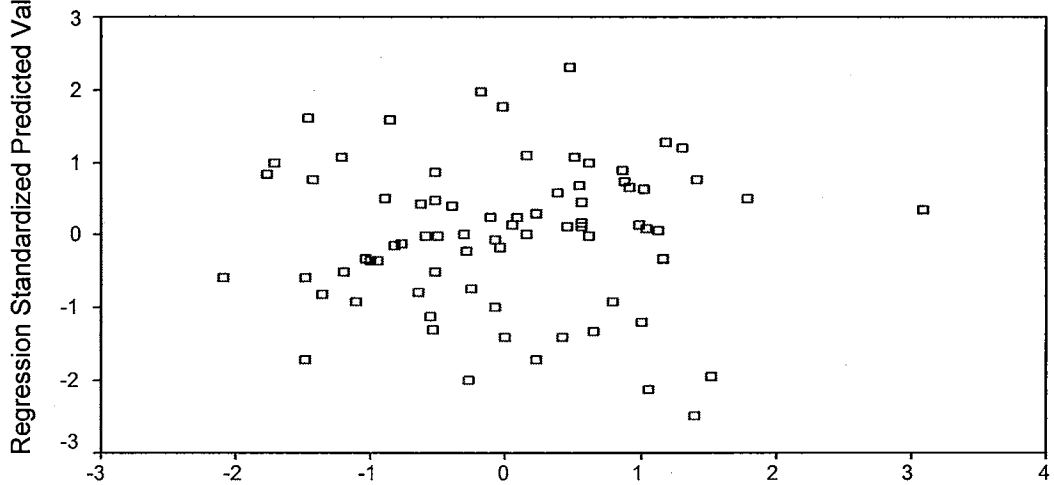
Dependent Variable: TTCAG2_1

Regression Standardized Residual

Scatter Plot: Parent Trust of School

Scatterplot

Dependent Variable: PTSTOT_1
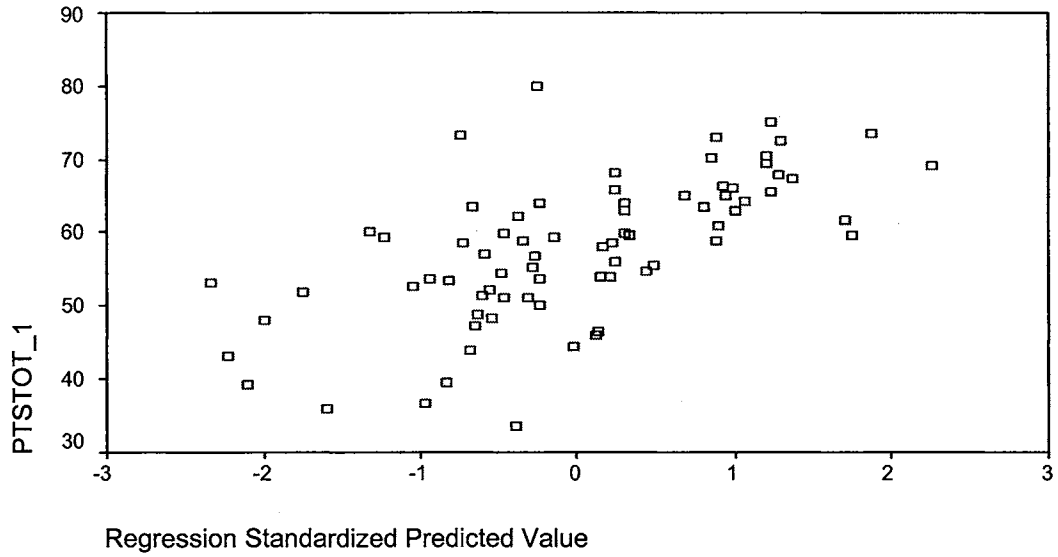
Scatterplot

Dependent Variable: PTSTOT_1
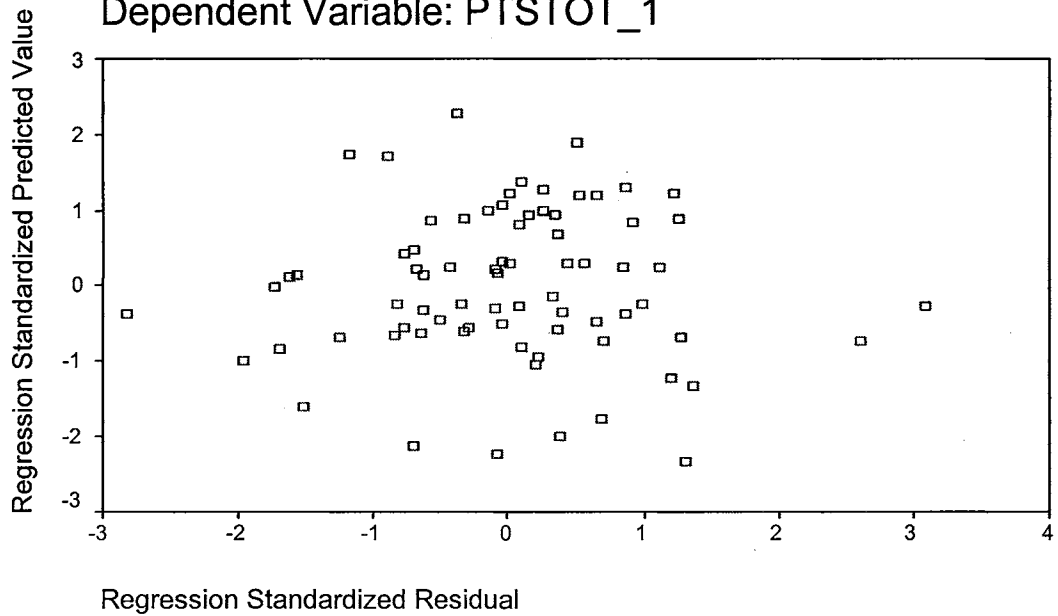
Scatter Plot: Collective Teacher Efficacy

Scatterplot

Dependent Variable: CTETOT_1
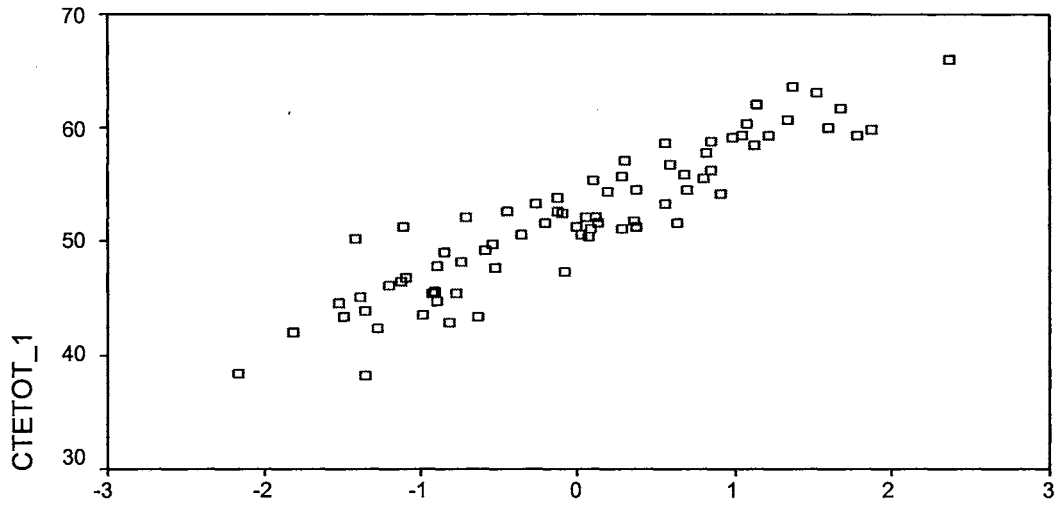
Regression Standardized Predicted Value

Scatterplot

Dependent Variable: CTETOT_1

Regression Standardized Residual

APPENDIX N

Sample Copies of the Research Instruments

(Parent Survey) Scale I

The items below permit a range of response from one extreme on the left (strongly disagree) to the other extreme on the right (strongly agree). By circling one number in each row, please indicate how you feel about your child's school. Circled numbers close to the "1" or "8" suggest more intense feelings.

Think about your child's school and respond to the following items.

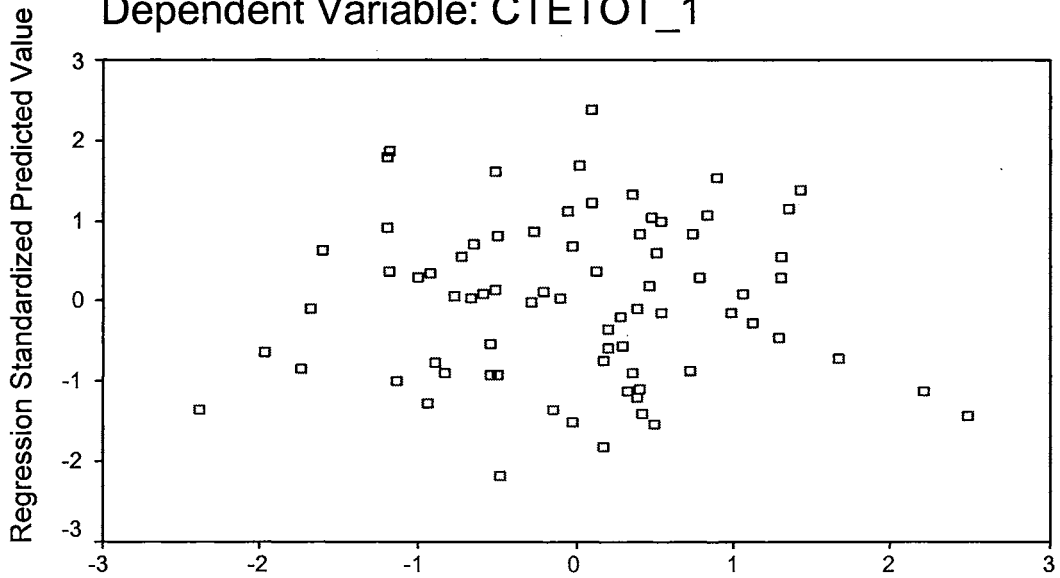|	Strongly Disagree						Strongly Agree	
1. This school always does what it is supposed to.......	1	2	3	4	5	6	7	8
2. This school keeps me well informed	1	2	3	4	5	6	7	8
3. I really trust this school.	1	2	3	4	5	6	7	8
4. Kids at this school are well cared for......................	1	2	3	4	5	6	7	8
5. This school is always honest with me.....................	1	2	3	4	5	6	7	8
6. This school does a terrific job................................	1	2	3	4	5	6	7	8
7. This school has high standards for all kids.............	1	2	3	4	5	6	7	8
8. This school is always ready to help........................	1	2	3	4	5	6	7	8
9. I never worry about my child when he/she's there..	1	2	3	4	5	6	7	8
10. At this school, I know I'll be listened to...............	1	2	3	4	5	6	7	8

(Teacher Survey) Scale I

Directions: The following are statements about your school. Please indicate the extent to which you agree with each statement along a scale from strongly agree to strongly disagree by circling one number for each question.

	Strongly Disagree			Strongly Agree		
1. Teachers in this school trust the principal	1	2	3	4	5	6
2. Teachers in this school trust each other..	1	2	3	4	5	6
3. Teachers in this school trust their students...	1	2	3	4	5	6
4. The teachers in this school are suspicious of most of the principal's actions...	1	2	3	4	5	6
5. Teachers in this school typically look out for each other	1	2	3	4	5	6
6. Teachers in this school trust the parents	1	2	3	4	5	6
7. The teachers in this school have faith in the integrity of the principal...	1	2	3	4	5	6
8. Teachers in this school are suspicious of each other	1	2	3	4	5	6
9. The students in this school have to be closely supervised...................	1	2	3	4	5	6
10. The principal in this school typically acts with the best interests of the teachers in mind	1	2	3	4	5	6
11. Teachers in this school believe in each other	1	2	3	4	5	6
12. Students in this school care about each other	1	2	3	4	5	6
13. The principal of this school does not show concern...........................	1	2	3	4	5	6
14. Even in difficult situations, teachers in this school can depend on each other	1	2	3	4	5	6
15. Students in this school are reliable	1	2	3	4	5	6
16. The principal in this school is unresponsive to						

teachers' concerns	1	2	3	4	5	6
17. Teachers in this school do their jobs well............................	1	2	3	4	5	6
18. Parents in this school are reliable in their commitments	1	2	3	4	5	6
19. Teachers in this school can rely on the principal.............................	1	2	3	4	5	6
20. Teachers in this school have faith in the integrity of their colleagues	1	2	3	4	5	6
21. Students in this school can be counted on to do their work	1	2	3	4	5	6
22. The principal in this school is competent in doing his or her job	1	2	3	4	5	6
23. Teachers in this school are open with each other	1	2	3	4	5	6
24. Teachers can count on parental support..	1	2	3	4	5	6
25. The principal in this school keeps his or her word	1	2	3	4	5	6
26. When teachers in this school tell you something you can believe it...	1	2	3	4	5	6
27. Teachers here believe students are competent learners	1	2	3	4	5	6
28. The principal doesn't tell teachers what is really going on	1	2	3	4	5	6
29. Teachers think most of the parents do a good job	1	2	3	4	5	6
30. The principal openly shares personal information with teachers........	1	2	3	4	5	6
31. Teachers in this school believe what students say............................	1	2	3	4	5	6
32. Students in this school cheat if they have the chance	1	2	3	4	5	6
33. Teachers can believe what parents tell them	1	2	3	4	5	6
34. Students here are secretive	1	2	3	4	5	6
35. The students in this school talk freely about their lives outside of school..	1	2	3	4	5	6
36. Parents of students in this school encourage good habits of schooling...	1	2	3	4	5	6
37. Teachers in this school show concern for their students.....................	1	2	3	4	5	6

Scale III

The following statements are descriptions of the way your school is structured. Please indicate the extent to which each statement characterizes behavior in your school by circling one number for each question.

	Never	Once in A while	Some times	Fairly often	Always
1. Administrative rules in this school enable authentic communication between teachers and administrators	1	2	3	4	5
2. In this school red tape is a problem	1	2	3	4	5
3. The administrative hierarchy of this school enables teachers to do their job..	1	2	3	4	5
4. The administrative hierarchy obstructs student achievement	1	2	3	4	5
5. Administrative rules help rather than hinder	1	2	3	4	5
6. The administrative hierarchy of this school facilitates the mission of this school	1	2	3	4	5
7. Administrative rules in this school are used to punish teachers	1	2	3	4	5
8. The administrative hierarchy of this school obstructs innovation	1	2	3	4	5
9. Administrative rules in this school are substitutes for professional judgment..	1	2	3	4	5
10. Administrative rules in this school are guides to solutions rather than rigid procedures	1	2	3	4	5
11. In this school the authority of the principal is used to undermine teachers..	1	2	3	4	5
12. The administrators in this school use their authority to enable teachers to do their job	1	2	3	4	5

Scale IV
Directions: Indicate your level of agreement with each of the following statements from
STRONGLY DISAGREE (1) to STRONGLY AGREE (6) by circling one number for each question.

	Strongly Disagree				**Strongly Agree**	
1.Teachers in this school are able to get through to the most difficult students	1	2	3	4	5	6
2.Teachers here are confident they will be able to motivate their students...	1	2	3	4	5	6
3.If a child doesn't want to learn teachers here give up.............	1	2	3	4	5	6
4.Teachers here don't have the skills needed to produce meaningful learning	1	2	3	4	5	6
5.Teachers in this school believe that every child can learn.....................	1	2	3	4	5	6
6.These students come to school ready to learn.........................	1	2	3	4	5	6
7.Home life provides so many advantages that students here are bound to learn	1	2	3	4	5	6
8.Students here just aren't motivated to learn	1	2	3	4	5	6
9.Teachers in this school do not have the skills to deal with student disciplinary problems	1	2	3	4	5	6
10.The opportunities in this community help ensure that these students will learn	1	2	3	4	5	6
11.Learning is more difficult at this school because students are worried about their safety...	1	2	3	4	5	6
12.Drug and Alcohol abuse in the community make learning difficult for students here	1	2	3	4	5	6

APPENDIX O

Letters Explaining the Research Process and Directions for Participation

Dear Colleague:

Oklahoma State University is conducting research on the causes and consequences of public trust in schools, especially as related to children's academic success. This important work could help improve public schools in Oklahoma. Your school has been randomly selected as one of the 836 in NE Oklahoma for study. Your principal and school district have given us permission to seek your cooperation and we genuinely need your help. About 10 classroom teachers from your school have been randomly selected to participate.

Participation will take only a few minutes of your time. We ask that you complete the survey and mail it directly to OSU in the postage-free envelope provided. Your name will never be attached to this survey and once we have received your survey, all evidence that you participated (or declined to participate) will be destroyed. No one at your school, district, or anywhere will have access to your responses or research findings that could be connected to you.

Thank you, most sincerely, for your cooperation. We know you share our belief that Oklahoma's schools should be the best they can be. If you complete the survey, it is important that you answer *all* questions. If you choose not to participate, simply return the incomplete survey and we will not send you another mailing. Any questions may be directed to the e-mail address below. Thank you again.

Sincerely,

Patrick B. Forsyth   Laura Barnes
Williams Professor of Educational Leadership   Associate Professor
forsytp@okstate.edu
Enclosures: Return Envelope

Dear Parent or Guardian:

Oklahoma State University is conducting research on the causes and consequences of public trust in schools, especially as related to children's success in school. This important work can help improve public schools in Oklahoma. Your child's school has been selected as one of the 836 in NE Oklahoma for study. Your school district and principal have given us permission to seek your cooperation and we genuinely need your help. Yours is one of fifteen randomly selected school households.

Participation will take only a few moments of your time. We ask that you complete this 46-item survey and mail it directly to OSU in the postage-free envelope provided. Your name will never be attached to this questionnaire and once we have received your survey, all evidence that you participated will be destroyed. No one at the school will be shown your responses.

Thank you, most sincerely, for your help. We know you share our belief that Oklahoma's schools should be the best they can be. If you complete the survey, it is important that you answer *all* questions. If you do not want to participate, please return the blank survey and we won't send you another mailing. Any questions you might have may be directed to the researchers below. Thank you.

Sincerely,

Patrick B. Forsyth   Laura Barnes
Williams Professor of Educational Leadership   Associate Professor
Phone: 918-594-8192
E-mail: forsytp@okstate.edu Enclosure: Return Envelope

APPENDIX P

Follow-up Letter

January/February 2003

A few weeks ago you received a research instrument from Oklahoma State University. If you still have this instrument please complete it and send it back to OSU-Tulsa via the return envelope. If you misplaced the instrument, please complete the accompanying instrument and return it to OSU-Tulsa. If you choose not to participate in the research, please return the instrument with a statement indicting that you do not desire to participate. Upon receiving your returned instrument, or response indicating that you choose not to participate, we will stop contacting you for follow-up purposes. We thank you in advance for your time and support of this important research study over the causes, consequences, and effects of trust in schools.

Sincerely,

Curt Adams

APPENDIX Q

Oklahoma State University
Institutional Review Board

Protocol Expires: 2/3/03

Date: Monday, February 04, 2002   IRB Application No   ED0267

Proposal Title: SCHOOL TRUST PROJECT

Principal
Investigator(s):

Patrick Forsyth   Laura Barnes
2444 Main Hall, OSU   2436 Main Hall
Tulsa, OK 74106   Tulsa, OK 74145

Reviewed and
Processed as: Expedited (Spec Pop)

Approval Status Recommended by Reviewer(s): Approved

Dear PI :

Your IRB application referenced above has been approved for one calendar year. Please make note of the expiration date indicated above. It is the judgment of the reviewers that the rights and welfare of individuals who may be asked to participate in this study will be respected, and that the research will be conducted in a manner consistent with the IRB requirements as outlined in section 45 CFR 46.

As Principal Investigator, it is your responsibility to do the following:

1. Conduct this study exactly as it has been approved. Any modifications to the research protocol must be submitted with the appropriate signatures for IRB approval.
2. Submit a request for continuation if the study extends beyond the approval period of one calendar year. This continuation must receive IRB review and approval before the research can continue.
3. Report any adverse events to the IRB Chair promptly. Adverse events are those which are unanticipated and impact the subjects during the course of this research; and
4. Notify the IRB office in writing when your research project is complete.

Please note that approved projects are subject to monitoring by the IRB. If you have questions about the IRB procedures or need any assistance from the Board, please contact Sharon Bacher, the Executive Secretary to the IRB, in 203 Whitehurst (phone: 405-744-5700, sbacher@okstate.edu).

Sincerely,

Carol Olson, Chair
Institutional Review Board

Vita

Curt Matthew Adams

Candidate for the Degree of

Doctor of Education

Dissertation: THE EFFECTS OF SCHOOL STRUCTURE AND TRUST ON
                  COLLECTIVE TEACHER EFFICACY

Major Field: Education Administration

Biographical:

   Personal Data: Born in Tulsa, Oklahoma, on May 7, 1973, the son of George and
       Barbara Adams.

   Education: Graduated from Bishop Kelley High School, Tulsa, Oklahoma, in
       May, 1991; received Bachelor of Arts degree in History from The
       University of Tulsa in December of 1997; completed requirements for the
       Master of Science degree in School Counseling from the University of
       Tulsa in December, 1999.

   Experience: Social Studies teacher, Thomas Edison High School, Tulsa,
       Oklahoma, January 1998 to August 2000; high school counselor Bishop
       Kelley High School, Tulsa, Oklahoma, August 2000 to August 2002;
       Project Direct San Miguel Tulsa, Tulsa, Oklahoma, August 2002 to the
       present.

   Professional Membership: American Educational Research Association; member
       of Phi Kappa Phi Honor Society, April 2003.