

RELATIONSHIPS AMONG PROFESSIONAL LEARNING
COMMUNITIES, TRUST, AND THEIR PERCEIVED
EFFECTS ON STUDENT ACHIEVEMENT
IN GEORGIA

by

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ABSTRACT

The purpose of this study was to determine the relationship between professional learning community (PLC) characteristics and levels of trust, and their impact on student academic achievement in fifth and eighth grade mathematics, based on Georgia's state academic test. This research was designed to answer the following questions: is student academic achievement impacted by perceived levels of PLCs? Is trust a determining factor in the implementation level of PLCs? Do schools that exhibit high levels of trust, and characteristics of PLCs, have higher student academic achievement scores? Is there a difference between middle and elementary schools in regards to student achievement when examining the effects of PLC implementation and level of trust?

Data were collected from 59 elementary and middle schools in Georgia using Hord's (1996) School Professional Staff as a Learning Community Questionnaire (SPSLCQ) and the Omnibus T-Scale (Hoy & Tschannen-Moran, 2003). Student achievement data were obtained from the Georgia Department of Education website. Data were analyzed through correlations, stepwise backward regressions, and independent t-tests using SPSS 20.0. Results indicated that there is a strong relationship between trust and professional learning communities and that higher levels of trust in clients (students and parents) have an impact on student academic achievement. Results also indicated in this study that professional learning communities were not a significant predictor of student academic achievement; however, they may have an indirect impact on achievement through the relationship with trust.

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CHAPTER I:

INTRODUCTION

Introduction and Background

The implementation and characteristics of professional learning communities have been examined by researchers throughout the past two decades. Early educational reformers (e.g., Dewey, 1933; Meiklejohn, 1932) saw the importance of a shared community among teachers who worked collaboratively to improve educational outcomes for students. According to Vescio, Ross, and Adams (2008), well-developed learning communities improve student academic achievement by allowing teachers and administrators to work together and to share ideas. The ability to collaborate productively with peers requires a willingness to trust colleagues and leaders (Mitchell, Ripley, Adams, & Raju, 2011; Tschannen-Moran, 2001). In forming learning communities, teachers are given the opportunity to learn through collaborative professional relationships in the pursuit of teacher and student learning and school improvement.

With the implementation of several educational acts, starting in the 1980s, schools have been looking for ways to improve. Accountability is the driving force in increasing student academic achievement and learning. Much of the research in the 1970s and 1980s, in education, has stemmed from researchers examining the results of the Coleman report (Hallinan, 1988). In 1966 the Coleman report concluded that a student's family life impacted student success more than schools. Since Coleman's findings, researchers have focused on whether or not, and if so how much, schools have a significant impact on academic achievement. According to Rivkin, Hanushek, and Kain (2005), schools do have an impact on academic achievement of students.

Their study of Texas schools linked teacher and school quality to student academic achievement. Their findings suggested that as teacher learning develops each year, increases in academic gains occur. In a study of the Chicago Public High Schools, researchers found that teacher quality in math had a significant impact, as much as one-fifth of a year's academic gains (Aaronson, Barrow, & Sander, 2007). Focusing on improving academic results through teacher development is an important concept in improving education. Goddard, Hoy, and Sweetland (2000) found that schools that focus on academic success and have a culture of shared goals and community can have higher levels of student academic achievement.

Establishing professional learning communities in schools that enhance teacher quality through professional development is believed to be one way to focus on school improvement. Hord (1997) described professional learning communities as organizations that have supportive and shared leadership, shared values and vision, collective learning, supportive conditions, and shared personal practice. She argued that in organizations where such characteristics exist, a community of learners evolves based on the instruction of students and developing teachers professionally to meet individual student needs.

One aspect that influences improvement is a teacher's education (Darling-Hammond & Sykes, 2003; Darling-Hammond, Holtzman, Gatlin, & Heilig, 2005). Teachers' education need not stop once they complete their degree programs. Educators according to this theory, continue their education through professional development that focuses on instructional strategies (Darling-Hammond & Sykes, 2003; Hargreaves & Fullan, 2000). According to Garet, Porter, Desimone, Birman, and Yoon (2001), professional development that is successful in the classroom is content related, focuses on collaborative learning efforts of the same school, grade, and subject, and is on-going. Improving teacher instruction through professional development

can improve student academic achievement. Huggins, Scheurich, and Morgan (2011) found through detailed observations of teachers in schools that professional learning communities that focused on instructional strategies led to increased gains in mathematics through changed practice. In a review of research, Darling-Hammond (2000) concluded that teacher training related to the content that they teach influences student academic achievement.

In a review of the literature conducted by the Regional Educational Laboratory at Edvance Researcher, Inc., study members examined professional learning community studies that were correlated to student academic achievement. Narrowing the field of research to nine separate studies that focused on areas of math, science, reading, and English/language arts, the researchers found an effect size of 0.54 in relation to professional development. They found that there was an increase, as much as twenty-one points in their average control group, on various standardized tests (ex. ITBS, SAT, Gates-MacGinite), when teachers experienced at least 49 contact hours of professional learning that was related to specific content, was collaborative, and was job embedded (Yoon, Duncan, Lee, Scarloss, & Shapley, 2007). This connection to improvement was also noted in a 2010 case study of four states, Colorado, Missouri, New Jersey, and Vermont. In the case study the researchers focused on the policies and strategies that led to high levels of participation in professional learning. They found that within the states a focus on forming and maintaining effective PLCs increased professional learning in schools. They also found that these states that devoted funds to professional learning increased their NAEP scores (Jaquith, Mindich, Wei, & Darling-Hammond, 2010).

Professional learning communities are one way to address the needs of professional development inside schools. Focusing on job embedded learning, collaboratively planning and setting instructional tasks to meet the needs of students, are the goals of PLCs. According to

Little (2003), teachers in a learning community should commonly meet to discuss student work to ensure that learning is taking place. Addressing student work, at any level, can facilitate new ideas and understanding in teaching. DuFour et al. (2008) described the need for discussions of student work and achievement data when developing instructional strategies as a group. Another important aspect of meeting to discuss work is following a set agenda and addressing questions brought to the group in a methodical manner. Little (2003) argued that following a protocol allows for greater focus. Following a protocol, or set of questions can enable the group to address more specific needs during each meeting, guiding the development of a solution or improvement.

Discussions between teachers as well as between teachers and leaders within professional learning communities require a foundation of shared values and goals. These values and goals are typically aligned with school academic goals or student academic achievement. To achieve these educational outcomes in PLCs the establishment of trust is important. Wahlstrom and Louis (2008) concluded that trust between teachers is important in a professional community. They found that trust between school leaders and teachers seemed to only be important if there is no existence of a professional learning community; therefore trust should be a foundation within a professional learning community. Trust between teachers allows for collaboration and support of the school leaders through shared decision-making, and it can allow professional learning communities to emerge. Tschannen-Moran (2001) also found that trust is a foundation for fostering collaboration between teachers, teachers and leaders, and teachers and students. High levels of trust have been linked with higher levels of student academic achievement (Goddard, Tschannen-Moran, & Hoy, 2001; Hoy, Tarter, & Witkoskie., 1992; Goddard, Salloum, & Berebitsky, 2009; Bryk & Schneider, 2002).

By connecting research on professional learning communities (DuFour et al., 2008; Hord, 1997; Little, 2003) and studies on trust (Hoy & Tschannen-Moran, 2007; Goddard et al., 2001), this research examined the effects, if any, on each other and on student academic achievement. Achievement was operationally defined by school scores on the Georgia Criterion Referenced Competency Test (CRCT). In the current age of accountability in education and with the goal to increase student academic achievement the collective effects of PLCs and trust on student achievement was explored.

Statement of the Problem

Since the implementation of NCLB and recent statewide budget cuts in education (GaDOE, 2007) schools have focused on improvement from within to meet the goals of achieving Adequate Yearly Progress (AYP). Promoting teacher professional growth has been difficult with decreased resources; therefore, educators have recently focused efforts on finding and learning professional practices that will increase student academic achievement from within the schools and systems in which they currently teach. There are a wide variety of approaches to lead professional learning for teachers, however, becoming a community of learners and utilizing trust as a foundation from which to share practices has been proposed as a way to lead to increased professional teacher learning, therefore increasing academic achievement.

Significance of the Study

This study focused on how the perceived implementation level of professional learning communities, combined with trust, affects student academic achievement scores on the CRCT in the areas of third, fifth, and eighth grade mathematics. This study examined professional learning communities as described by Hord (1997) and trust (Hoy & Tschannen-Moran, 2003) and how they have impacted academic achievement. School reform has placed educators into

the forefront of academic accountability in regards to making Adequate Yearly Progress (AYP). Schools are required to increase their achievement scores, which is believed to ensure that each student is receiving a quality education through high levels of teaching and learning. This researcher was interested in (1) determining if scores in student academic achievement are impacted by perceived levels of PLCs; (2) if trust is a determining factor in the implementation level of PLCs; and (3) whether schools that had high levels of trust and perceived PLCs have higher student academic achievement than those that do not. The researcher believed that this study adds to the literature on professional learning communities, trust, and student academic achievement.

Research Questions and Design

The purpose of this study was to examine perceived levels of professional learning communities and trust and their impact on student academic achievement. The following five questions guided this study:

1. To what extent is a school's level of trust related to the perceived implementation level of PLCs;
2. Is there a relationship between a school's level of trust and student achievement;
3. Does a PLCs perceived implementation level vary with student achievement;
4. Do schools with high levels of trust and high perceived implementation levels of PLCs have higher student achievement; and
5. What is the difference between middle and elementary schools when examining the perceived implementation of PLCs, trust, and student achievement?

This study was a quantitative study that examined middle and elementary schools around metro Atlanta. Demographic data were collected from each respondent. Demographic data

included years teaching at their current school, years in education, subjects taught, how long they had been in a PLC, age, and their position within the school. The research instruments used to collect data were SEDL's School Professional Staff as Learning Community Questionnaire (Hord, 1996), the Omnibus T-Scale (Hoy & Tschannen-Moran, 2003), and the CRCT scores from the Georgia Department of Education's office of accountability website, <http://www.gadoe.org> (accessed July 2012). The two surveys were distributed electronically through the Qualtrics™ Research Suite to teachers and administrators within the school districts who chose to participate in the study. The data were collected and analyzed for comparison to one another and their relationship to academic student achievement. Student academic achievement data were obtained from the Georgia Department of Education.

Hypothesis

H₁: As the school's level of trust (teacher, principal, and clients) increases the perceived implementation level of professional learning community increases.

H₂: As the school's level of perceived professional learning community increases, student achievement increases.

H₃: As the school's level of trust (teacher, principal, and clients) increases student achievement increases.

H₄: As the school's level of perceived professional learning community and trust (teacher, principal, and clients) increase, student achievement increases.

H₅: Elementary school respondents will demonstrate higher levels of perceived professional learning communities and trust than those of middle schools.

Participants

A convenience sample of middle and elementary school teachers and administrators within the metropolitan Atlanta area were selected for this study. For the purpose of this study middle schools are classified as containing grades 5 - 8 or 6 - 8, elementary schools are classified as schools containing two or more grades with one grade level being a placement grade, either grade 3 or 5. Schools in the study were selected from three Regional Educational Service Agencies (RESAs). Superintendents and principals of each school and system were contacted and asked to participate in the study that consisted of two surveys and achievement data. Certified staff members were asked to participate within each school. Only aggregated demographic and survey data were collected.

Definitions of Key Terms

The following is a list of key terms and definitions that were relevant to the study.

Adequate Yearly Progress: Measurement of progress over one academic year to meet specific annual goals. To make progress, schools must (1) have at least 95% participation; (2) have 95% of students meet the minimum target in both reading and math; (3) a second indicator which could be attendance or goal in another subject area.

Annual Measureable Objectives: The minimal level of improvement for each subject area. This level is set by the state with a goal of 100% mastery by 2013-2014. Each year the AMO in math and English language arts is raised by at least 6%.

Certified Staff: This includes teachers, principals, counselors, or other staff members who have a certificate on file at the Georgia Professional Standards Commission that oversees the certification of school employees in Georgia.

Clients: This includes students and their parents within a school.

Collaboration: A process in which two or more people work together to achieve goals by sharing knowledge, learning, and building consensus among the group or organization.

Criterion-Referenced Competency Tests (CRCTs): State-required tests to measure students' acquisition of the knowledge and skills as they correlate to the Georgia Performance Standards (GPS). Students in grades 3-8 are tested on the areas of math, reading, English/language arts, science, and social studies (GaDOE, 2011).

Georgia Performance Standards (GPS): The standards set by Georgia for teachers to utilize in instruction as a result of standards based classroom.

Professional Learning Communities: A group of individuals working together that have shared goals and outcomes for students that plan, create, discuss, and implement strategies that drive teaching and learning.

Promotion Grades: In Georgia students in grades 3, 5, and 8 must meet a minimum score of 800 on the math and reading to be promoted into the next grade level.

Regional Education Service Agencies (RESAs): Local education agencies that provide support for school systems, schools, and teachers. They provide professional learning and support to various program needs within each RESA district. There are 16 RESAs in Georgia.

Socioeconomic Status: For this study SES was reflected as the percent of students on free or reduced lunch.

Trust: "Trust is one party's willingness to be vulnerable to another party based on the confidence that the latter party is (a) benevolent, (b) reliable, (c) competent, (d) honest, and (e) open" (Hoy & Tschannen-Moran, 1999; Tschannen-Moran & Hoy, 1998; Hoy & Tschannen-Moran, 2003).

Delimitations of the Study

This study was limited to middle and elementary schools in the West Georgia, Griffin, and Metro Regional Educational School Association districts. Data collection was restricted to SEDL's School Professional Staff as Learning Community Questionnaire (Hord, 1996) instrument, the Omnibus T-Scale (Hoy & Tschannen-Moran, 2003), and mathematics scores on the CRCT. Other assessments of student learning and different locations may yield different results.

Summary

This chapter's purpose was to give a brief background on professional learning communities, trust, and their importance to the impact on teaching and student learning. Previous research on academic achievement was examined. Focusing on teacher quality as it relates to professional development and increased student academic improvement was explained. Trust was examined as a key to providing collaborative situations for teachers to develop and improve their quality thereby influencing student academic achievement. Finally, the chapter provided an explanation of the research design, questions, limitations, and definitions. The results from this study may link student academic achievement to higher levels of professional learning communities and trust, providing a resource for schools and systems to use for school improvement. Chapter II provides a more in-depth review of the literature on PLCs, trust, and student academic achievement.

CHAPTER II:

REVIEW OF THE LITERATURE

Professional learning communities (PLC) are not new to the education community; however attention to them as a reform strategy has increased over the past 15 years in areas of academic research with the development of GOALS 2000: Educate America Act (1993) and the No Child Left Behind (NCLB) legislation (2002). With the national focus of NCLB and the standardization of education goals within each state, schools have been looking for ways to increase academic achievement and increase their accountability for accurate reports. This chapter reviews the literature on PLCs, trust, and student achievement.

A Brief History of PLCs

The idea of an educational learning community can be traced back to progressive era education reformers such as Dewey and Meiklejohn (Smith, 2003). These two reformers pushed for the creation of a more democratic society through more engaging curriculum using discussion and collaboration. Meiklejohn (1932) first formed a two-year experimental college in 1927 in which faculty and students discussed and studied effective teaching literature. Within this effort, teachers collaboratively designed the curriculum to meet the needs of the students and worked with them for discovery and understanding through group conferencing about the materials being studied. Working through the discovery process, students were given the opportunity to question their teachers, reducing some of the boundaries that existed among other colleges. These collaborative groups allowed for more challenging assignments in which students could apply what they were learning and work together to establish solutions using the

skills they learned in classes (Smith, 2003). Meiklejohn believed that creating these communal groups would facilitate a more liberal education and produce men who were well rounded and able to make thoughtful democratic decisions (Brennan, 1988).

Dewey, like Meiklejohn (1933), was concerned with the typical education of the time. He described the idea that students be engaged in critical thinking, and learn to reflect and act based on previous experiences. His ideas were contrary to the standard ideals of the time in which students were expected to absorb knowledge strictly by lecture. Dewey (1933) had challenged those ideals with the thought that students could become lifelong learners through mental engagement within the concepts being taught. Both Dewey and Meiklejohn focused on the idea that learning should be a collaborative effort between teachers and students and that the content needed to be meaningful in order for learning to take place.

During this time period, another study, the Eight-Year Study (1930-1942) took place in the Denver Public Schools and was sponsored by the Progressive Education Association (PEA). The PEA established the Commission on the Relations of School and College charged with examining the relationship between high schools and universities within the United States. The commission's goals were to find out how high schools could better serve students and how to establish a relationship between high schools and colleges that would permit and encourage reconstruction of secondary schools (Bullough, 2007).

Early within the study, school systems were given the opportunity to change their curriculum and establish new programs that would better fit their students. Colleges and universities in turn suspended admission requirements for five years "in favor of alternative forms of documentation provided by the participating school systems" (Bullough, 2007 p. 169). This change was slow to progress; however, the underlying idea focused on creating more

democratic schools that addressed the current needs of society through the different subjects. School systems and study leaders soon realized that change would have to start with teachers and the redefinition of their roles. Teachers began working more collaboratively going outside of their core areas to gather new ideas and solve problems. Leadership became more decentralized with teachers taking on various leadership roles in the educational organization. With this change, the study leaders realized that more work was needed with curriculum. A Committee on Evaluation was formed that focused on gathering data that would guide curriculum development, and study the results of those programs (Bullough, 2007, p. 173). As a result, the committee established workshops for teachers in which they worked together with other educational professionals to help solve problems pertaining to curriculum, instruction, and evaluation. Teachers who attended these workshops then returned to their local schools, and provided leadership for facilitating curriculum and instructional change.

The Eight-Year Study used several characteristics of PLCs; educators shared values and vision, leadership, supportive conditions, collective learning, and shared practice. These characteristics were evident within the study through discussions about curriculum, instruction, and evaluations that focused on enriching both student and teachers. This eventually led to improvements within the Denver Public School System (Bullough, 2007).

Current Developments in PLCs

While Dewey, Meiklejohn, and the Eight-Year Study influenced educational reform in the 1920s-1940, the resurgence of learning communities within education redeveloped in the 1980s largely due to the writing of Chris Argyris and Donald Schön. Education and business organizations began to examine the workplace environment and instituted learning organizations that they believed would improve employee development and performance (Senge, 1990;

Rosenholtz, 1989; Little, 1982; Purkey & Smith; 1983). According to Senge (1990), employees were encouraged to contribute to the organization and work with each other to foster new ideas and improvement through collaboration. Two well-cited studies by Rosenholtz (1989) and Little (1982) were some of the first to examine teacher collaboration and its effects on student achievement.

Rosenholtz's 1989 study (as cited in Smith & Scott, 1990) is one of the first large scale studies to examine teacher collaboration and its effect on student achievement. She described the need for a shared set of goals, supportive conditions within the school, collective learning, and peer feedback and discussion; these remain foundational components of professional learning communities today. Her study examined 78 elementary schools in Tennessee. She used a regression analysis to control for socioeconomic status, school size, teachers' years of experience, teachers' verbal ability, and teacher-pupil ratio. Data from her study showed that collaboration among teachers within schools was a strong predictor for student achievement gains in math and reading. Schools with results that showed high levels of collaboration had higher levels of teachers who were focused on student results, instructional tools, and shared the belief that they could work with all students in academic improvement. Rosenholtz's study showed that teachers working with one another to improve, and when given the opportunity to examine their own teaching and to work with others to examine those data, continuously improved through their professional learning (p. 220).

The study conducted by Little (1982) examined four schools with high student achievement and two schools with low student achievement. Through interviews and observations, she found that the successful schools had teachers who interacted more frequently with other teachers and with administrators and had higher levels of collegiality. The

interactions focused on continuous improvement through shared planning time, observations, and discussions about instruction (Little, 1982). Schools without collegiality had lower student achievement results, Little hypothesized that this was partially due to teachers not discussing instruction, as they were more isolated. Other educational reviews at the time (Purkey & Smith, 1983; Bacharach & others, 1984) indicated that collaborative planning, collegiality, and informal exchanges of information between educators and administrators tended to increase academics and learning (as cited in Smith & Scott, 1990).

In 1990, Senge relabeled earlier work by Argyris (1977a) and described the idea of creating a learning organization. In his book he described five “component technologies” that work together to develop the learning organization; systems thinking, personal mastery, mental models, building shared vision, and team learning. Each “discipline” or component focused on how we think, what we want, and how we interact with each other in creating new ideas, innovations, strategies and designing policy and structure through working together (p. 11). He argued that these ideas help in creating an organization devoted to learning and improving from within utilizing the human capital that it has to re-invent and innovate the business. Through use of the five disciplines, Senge supported the idea of a learning community and the need for shared leadership and responsibility in problem solving and continuous improvement. This focus was a restatement of what Dewey (1933), Argyris (1977b), and others had described as a democratic organization, and the ideas were adapted for the educational system (Senge, 1990; Hord, 1990).

In the early 1990s, Hord along with the Southeast Educational Development Laboratory (SEDL) began to focus on and study learning communities. In 1997, she published a literature review and synthesis on the topic of PLCs. Hord cited research completed by McLaughlin and Talbert (1993) who confirmed what Rosenholtz had found that “when experienced teachers had

opportunities for collaborative inquiry and its related learning, the result was a body of wisdom about teaching that could be widely shared” (as cited in Hord, 1997, p. 10). Hord described the research completed by Senge and how his business learning model was being examined and adapted by researchers in the education field during this time.

Darling-Hammond and McLaughlin (1995) described the need for teachers to engage in professional development that involves colleagues and administrators who engage in discussions about assessments and learning strategies and the need to involve the community of learners not just the individual teachers. They described the need for trust between colleagues in order to create change that benefits and challenges both teachers and students. The following year, 1996, Darling-Hammond described the need for common planning time in which teachers collaborate to discuss instruction and assessment. In 1998, Darling-Hammond called for the need for teachers to collaborate on instruction and on curriculum development through peer observation and shared decision-making.

DuFour and Eaker (1998) endorsed a plan for creating and sustaining professional learning communities. They described some of the characteristics of professional learning communities at Adlai Stevenson High School in Lincolnshire, Illinois, where DuFour worked as the principal. Schmoker (2006) attributed the success of Adlai Stevenson High School as being due to the work of DuFour in adapting business models for use in the classroom by creating an environment that was focused on creating high-quality lessons and units through teamwork which utilized results from student data. These components along with recognition of teachers and staff helped the high-achieving school improve. Schmoker (2006) credited DuFour with creating a sustained professional community of improvement.

In 2008, Vescio, Ross, and Adams published a paper reviewing research studies conducted on professional learning communities. They found out 8 of 11 studies had connections between PLCs and student achievement. Lomos, Hofman, and Boskoer (2011b) found through an analysis of 130 secondary schools that after controlling for initial variables that PLCs explained an additional 7% of the variance with a small effect size ($d = .24$). In a recent meta-analysis of five schools conducted by Lomos, Hofman, and Boskoer (2011a), it was found that PLCs accounted for a small but significant ($d = .25, p < .05$) relationship to student achievement. Arredondo Rucinski (2011), through a meta-analysis that included twelve studies that focused on the relationship of student achievement and PLCs, found a positive link between the two variables.

Characteristics of PLCs

While there is no formal universally accepted definition of a Professional Learning Community; there are, however, characteristics that researchers and educators have found in PLCs. Rosenholtz (1985) described several characteristics that exist in effective schools. She examined literature on schools and identified teacher collaboration, shared decision making, and shared practice as existing in schools that were successful. For those to exist she argued that schools that had principals who were results oriented could achieve the results through establishing a supportive environment that allowed for teacher interaction and encouraged growth. Four years later she published results of a study on elementary schools in Tennessee. Rosenholtz concluded that schools who had higher levels of collaboration, shared decision making, and shared practice improved their academic achievement.

Kruse and Louis published two papers in 1993 that proposed two conditions of professional communities, each with its own set of characteristics. They first described structural

conditions of professional communities or an environment that “fosters a communitarian approach to teaching” (Kruse & Louis, 1993b, p. 14). They described structural conditions of (1) time to meet and talk; (2) physical proximity; (3) interdependent teaching roles; (4) communication structures and networks, and (5) teacher empowerment and school autonomy (Kruse & Louis, 1993b, p. 14). They believed these structures enable teachers to work together in a professional community, but there should also be characteristics that relate to the social and human resources in developing a professional community. Kruse and Louis described these characteristics as (1) openness to improvement; (2) trust and respect; (3) shared expertise; and (4) a sense of efficacy, leadership, and socialization mechanisms. According to the two researchers, these nine elements are needed to create and sustain professional communities. The authors, however, through their examination of several schools stated that there are four conditions necessary for the development of a community; time, teacher empowerment, cognitive and skill bases, and supportive leadership (Kruse & Louis, 1993b, p. 23).

In 1994, Kruse, Louis, and Bryk reported preliminary results of a small study of 15 schools and suggested that in schools where professional community was strong, teachers would be willing to put more effort into improving student learning. They described professional communities as having these five elements: (1) reflective dialogue; (2) de-privatization of practice; (3) collective focus on student learning; (4) collaboration; and (5) shared norms and values. They also found that while structures involving time and place were important, that the focus for improvement should be placed on creating a professional community.

Hord (1997) described a similar set of characteristics of PLCs in a synthesis published by the Southwest Education Development Laboratory. In the synthesis Hord explored the concepts and operationalization of PLCs and defined five attributes of PLCs: (1) supportive and shared

leadership; (2) shared values and vision; (3) collective learning; (4) supportive conditions; and (5) shared personal practice. She argued that schools that have these items working within them are believed to be professional learning communities. Her review of the research showed that PLC implementation begins with administrators clearly defining the expectations and working with the teachers to develop the vision and path that the school may take towards improvement.

In 2005, Bolam, McMahon, Stoll, Thomas, and Wallace, completed a study that examined the creation and the sustention of PLCs. In this study, Bolam et al. concluded that effective learning communities exhibit eight key characteristics. They confirmed similar characteristics that earlier researchers (Stoll et al., 2003) had found; shared values and vision, responsibility for pupils' learning, reflective professional inquiry, and collaboration focused on learning and groups as well as individuals, professional learning. They found three additional characteristics that were important: inclusive membership, mutual trust, respect, and support; openness, networks and partnerships. While the last three characteristics were new to what was currently in the literature, they are items that have been reported by earlier researchers (Little, 2003).

Supportive and Shared Leadership

“Supportive leadership is necessary for a professional community to emerge” (Kruse & Louis, 1993a, p. 20). Leithwood, Louis, Anderson, and Wahlstrom (as cited in Supovitz, Sirinides, & May, 2010) concluded that school leadership is only second to teaching in the school-related factors on student achievement. Leaders within schools should be committed to student learning and the practices that foster improvement of instruction. With the administration guiding the improvement, it is important that their guidance focus on inquiry and growth creating a climate that supports instructional improvement. While leadership within a

school is often considered to be related with only the administration, in schools operating as professional learning communities, the leadership is shared among teachers and administrators. Huffman and Hipp (2000) asserted that leaders should be supportive of conditions and roles in which teachers make decisions that are best for their students within their classrooms. Kruse (2001) found in a three-school study that teachers sought shared leadership in pursuit of goals. According to her, the decisions that teachers make every day impact student achievement, and giving teachers the ability to make those decisions was an element of shared leadership.

Wahlstrom and Lewis (2008) conducted a study on teacher experience and principal leadership and concluded that “when teachers are involved in making decisions that affect them, they tend to strengthen or deepen their instructional practice” (p. 483). This is consistent with Marks and Louis’s (1997) conclusions about the impact of teacher empowerment on classrooms and with Marks and Printy’s (2003) conclusion that when instructional leadership is shared among the teachers *and* with the principal, the influence of the combined efforts on the quality of pedagogy is significant (Wahlstrom & Lewis, 2009, p. 483). Wahlstrom and Lewis (2008) also concluded that the effects of teachers’ trust in the principal was less significant when shared leadership and professional communities were present; however, they described the importance of trust among teachers and cited Tschannen-Moran who described how a leader creates the foundation for trust to exist among teachers.

Shared leadership is described by several researchers as an important characteristic in improving schools (Marks & Printy, 2003; Louis, Dretzke, & Wahlstrom, 2010; Hallinger & Heck, 2010). The importance of having administrators that are supportive of new ideas and one that works with it was one of the strongest characteristics for creating and sustaining a PLC (Bolam et al., 2005). According to Fullan (2007), a goal of shared leadership is to create a

culture that allows for sustainability and growth. Fullan suggested that changing the culture within a school is a difficult process that needs to be considered but needs to occur to allow for the existence of a PLC. Kruse and Louis (1993a) described the culture as a key characteristic of professional communities and argued that supportive leadership is one of the two most central ideals that assist in creating the instruction-focused culture of a learning community. The authors argued that building capacity among stakeholders through trust and guided by a shared vision can help in creating a supportive environment in which leadership is shared.

Shared Vision, Values, and Goals

According to Senge (1990), “shared vision is vital for the learning organization because it provides the focus and energy for learning” (p. 206). He argued that creating a vision and set of values help drive the development and sustainability of PLCs. Sharing the same vision enables schools to focus on the intrinsic values of the school and the people within it and thereby working towards a common goal that guides the decision making process when making decisions about teaching and learning. Senge claimed the vision of a school was the foundation of the community, and that the development of the vision be shared with both teachers and leaders, so it becomes intrinsic within the organizational community. Hallinger and Heck (2010) described the need for teachers and leaders to examine the school’s vision and purpose in improvement. They found that shared vision and goals, as part of collaborative leadership, can lead to academic growth. Hord (1997) described the shared vision of a professional learning community as one in which the individual is not only responsible for his or her actions, but that the common good is equal to their personal ambition. Focusing on the common good and that which is beyond personal needs, requires open communication and trust (Fawcett as cited in Hord, 1997, p. 20).

Creating a shared vision based on shared values and beliefs should help an organization to change (Hord, 1997).

According to DuFour et al. (2008), the vision tells us what we want to become; the values and beliefs tell us how to get there. The values and beliefs as collective commitments and promises state what they are going to do now to create the vision. Describing the values as collective commitments gives the idea that the value will be shared by all stakeholders and all need to contribute to the collective effort. Louis and Marks (1998) echoed the idea that a successful PLC has shared values and expectations that focused on unified goals and assumptions about students, learning, and teaching. A study conducted by Hipp and Huffman (2002) found evidence that shared values guided instructional practice and helped in creating a supportive climate for the staff.

Stoll and Fink (1994) described the need for a school's vision to be shared and based on the examination of teachers' values and beliefs. They asserted that once this vision was created, then a climate could be developed based on the establishment of trust. They hypothesized that trust may then lead towards open lines of communication, which, in turn, promotes staff collegiality. With the foundation of a shared vision, trusting climate, and staff collegiality, the researchers explained that the staff was ready to articulate the school's purpose or mission. Stoll and Fink (1994), through an examination of previous research on Effective Schools Project, found that through the process outlined above schools may change to become more student centered, focusing on student outcomes and address individual student needs.

In setting goals for an organization, Stoll and Fink (1994) found that many times schools focus on procedures and other external factors rather than instructional issues. According to Bolam et al. (2005), setting a goal in a PLC focused on continuous learning and examining

teacher practice and instructional change may lead to improved performance. Hord (1997, 2009) identified the need for goals to be set by the building staff and that the goal's progress be monitored for success. Focusing on specific goals defined by the vision of a school can lead to educational change. Hipp, Huffman, Pankake, and Oliver (2008) found in their study that schools that collaboratively developed the school improvement plan which focused on student learning and instruction had higher levels of academic progress (p. 181). Hord (2008) argued that schools with operational PLCs focus on goals that drive instructional improvement based on a shared vision.

Collective Learning

According to Louis and Kruse (1995) and Hord (2008), the foundation of a professional learning community is people working collaboratively, at all levels, to achieve higher student achievement. Collective learning is a result of collaboration as the individual teacher becomes part of a group. According to Vescio, Ross, and Adams (2008), collaboration amongst teachers can help drive higher student achievement by opening their practice through sharing, reflecting, and risk taking. In schools where collaboration was evident, teachers were able to share their results, discuss instruction, and assist failing students. Collaboration allowed for staff members to inquire and reflect as a group rather than individually which allowed them to produce discussion that led to shared decision-making. Once decisions were made as a group, the group moved in a direction of improvement and learned as a whole.

An important aspect of collaboration is the idea of what is labeled reflective dialogue in which staff members discuss students learning, teaching and learning, and related complications and issues (Hord, 1997). Reflective dialogue allows the staff to learn through inquiry: examining what is important and why it is important. Focusing on the needs of students through

collaborative efforts cannot only come from teachers but from a collaborative effort working together towards their shared values and vision (Sergiovanni, 2004). While exemplary schools with effective PLCs in place often utilize reflective inquiry and collective learning, it is important that the collaborative efforts of staff members focus on areas of professional practice that improve student achievement.

The results of a study completed by Wells and Feun (2007) showed that many teachers want to be involved with their colleagues in instruction-based decisions. Their study focused on six high schools who received nine days of training on PLCs during the 2002 - 2003 school years. Using a survey and six open-ended questions based on Hord's five dimensions, they found that four schools expressed the need to collaborate in examining the curriculum and the sequence to be taken in teaching. What the researchers did not find was collaboration on common assessments, student results, and what to do with failing students. They concluded that while teachers wanted to collaborate and did on more structurally-based themes, the teachers were not trained on how to collaborate on more in-depth ideas of common assessments, student results, and teaching methods.

According to Hord (2009) and Bolam et al. (2005), collaboration on instruction, results, and development is based on the individual student learners. When a community of trust is established through shared leadership and a clear vision, then teachers can work at improving their instruction. Creating a community of learners through collaboration and collective learning is an important job for leaders. McLaughlin and Talbert (2006) identified the leader as an important element in creating a learning community; they suggested that the leader can help create a learning community through shared accountability and improvement. The researchers further described the need for leaders to examine student assessment data to identify gaps in

achievement and address those gaps through discussion and re-examining the teaching and learning process.

According to Little (1993), while teachers collectively learn together, learning should look beyond their classroom doors into the intricacies of teaching and learning. She further explained that collaboration would be difficult without the supportive conditions of the school. She argued that collaboration exists when there is a sense of trust and understanding that focuses on ways to improve. With collaboration, teachers can deepen their subject knowledge and assume roles that assist in reforming curriculum, teaching strategies, and assessment (Little, 1993).

Supportive Conditions

Hord (1997) defined supportive conditions as the elements that determine “*when and where and how* staff regularly come together as a unit to do the learning, decision making, problem solving, and creative work that characterize a professional learning community” (p. 20). She said there are two types of conditions necessary for PLCs to function: structural and human. The structural conditions help foster an environment that is conducive to a learning community, setting the footing for the learning community to exist. The human conditions are those that relate to the development of community through trust, respect, leadership, and shared expertise. In a supportive environment, teachers can feel safe in making decisions and taking risks (Huffman & Hipp, 2000).

Structural conditions. Structural conditions focus on creating the environment in which a PLC operates. Kruse and Louis (1993) described these conditions as time, physical proximity, teaching roles, communication structures, and teacher empowerment. In establishing PLCs, it is important that teachers be given the time to work together; this can be done through common

planning time, department meetings, grade-level meetings, or any other planned meeting time that focuses on instruction. In a study by Lujan and Day (2010), researchers discovered that many times outsiders take advantage of a PLC unit working together, disrupting their goals. The researchers further stated that the times that PLC groups meet be protected and valued. Creating time is also important as it relates to professional development; schools and systems enable teachers and leaders to take time to establish and create new ideas related to student learning (Bolam et al., 2005).

According to Louis and Kruse (1993a), it is important that teachers are close to each other in proximity; those who teach certain subjects in grade levels should be able to meet and talk during the workday. Having close proximity allows for collaboration amongst teachers (Darling-Hammond & McLaughlin, 1995; Hord, 2009). Stoll and Fink (1996) described that the traditional compartmentalized school designs inhibit collaboration and that schools that are designed with areas for teachers to meet together during the day outside of the classroom will more likely support a collaborative culture (as cited in Bolam et al., 2005). Within the teacher's proximity, it is important that communication structures exist and that discussion on student work utilizes a set of established protocols, ones that do not diminish or hurt another (Little, Gearhart, Curry, & Kafka, 2003). Creating communication structures for collaboration are important; DuFour et al. (2008) described items that are related to "house-keeping" should be dealt with outside of discussions relating to planning, instruction, and assessment.

In PLCs, the structure of the classroom-school-system should be set up to be more flexible and more autonomous. The individual teacher needs to be able to control what he or she is doing within the classroom in response to the school's overall goals and values. The school's vision and values should be aligned to district policy, but the daily decisions that involve student

achievement should be kept within the school (Louis & Kruse, 1993). Hipp, Huffman, Pankake, and Oliver (2008) found in a small study that at two different schools district support was needed by each of the schools to facilitate community. According to these authors, empowering the schools and teachers to make decisions based on the local needs can create a sense of trust and community within a PLC.

Human conditions. Kruse and Louis (1993) described the human conditions as openness to improvement, trust and respect, shared expertise, efficacy, leadership, and socialization mechanisms. In 1995, the authors described that one of the first characteristics individuals discuss in an operational PLC is the willingness to accept feedback and work towards improvement (as found in Hord, 1997). Teachers willing to trust each other in their efforts will begin to work towards school improvement. Teachers should focus on student learning by examining results together and determining the best paths for the instruction to take; this rarely happens in most schools, but is evident in PLCs (Little, Gearhart, Curry, & Kafka, 2003; Hord, 1997).

Teachers in PLCs require the ability to try new ideas without the concern of failure, reflecting on their teaching and improving their practice (Kruse & Louis, 1993). Senge (1990) stated that “the most powerful learning comes from direct experience,” but that we often do not get a chance to see the consequence of our actions and improve upon them if we fail (p. 23). In a PLC, learning from experience is amplified as it comes from group experience. PLCs can use the experiences of everyone to move and create the best ideas that support learning and student achievement. Jacobs and Yendol-Hoppey (2010) found that through group open discussions teachers used the tools of a PLC to move into a more in-depth discussion about instruction.

Through these discussions, teachers constructed new information that will improve their classroom instruction (Kruse & Louis, 1993a).

Empowering teachers to collaborate and practice new methods is influenced by the leadership within a school, and according to Marks and Printy (2003); integrated leadership between teachers and leaders can lead to schools performing at higher levels than others. Vesico, Ross, and Adams (2008) asserted in their review of the literature that shared leadership between teachers and administrators was a key factor in teacher's ability to develop resources for their students and for their school (p. 85). Administrators working with teachers collaboratively to improve academic performance showed shared visions and goals are a foundation for a PLCs existence in the educational community. According to Boyd, as cited by Hord, the structural and human conditions were "highly interactive, many influencing the others" (Hord, 1997, p. 22).

Shared Personal Practice

Professional learning communities contain teachers, administrators, and staff who are working towards the goal of improving the learning environment for their students. Teachers should be willing to work collaboratively and review each other's work, critiquing and giving insight when help is needed. Kruse and Louis (1993b) found in a study on four schools that teacher expertise is one of two factors in the creation and growth of learning communities. A teacher's expertise should relate not only to content but on how to work within the community to facilitate the development of improved teaching through observation and feedback among all staff members (Hord, 1997). The National Education Association Keys to Excellence for Your School (KEYS) data indicated that high performing schools have staff members who collaborate using their own practice to discuss improvement structures within a group (NEA, 2010).

Hord (1997) cited Midgley and Wood (1993) who described the need for teachers to have an accepting environment that supports hard work and the growth of the individual teacher. A climate that promotes and supports hard work was critical when sharing personal failures and successes, as it was a time when teachers can be vulnerable to their peers. Hipp and Huffman (2005) stated that sharing personal practice through observations, feedback, and analysis of practice was an important component in PLCs (p. 7). They further described the importance of peer observation in providing feedback and encouragement on instructional practices. Through peer observations teachers have the ability to see best practices and evaluate potential instructional problems. A review of the research on peer coaching conducted by Kretlow and Bartholomew (2010) found that collegial support improved teachers' perceptions of each other. The researchers found several studies that showed improved academic success when teachers were using peer coaching that included sharing best practices and feedback on instruction within the classroom.

Marzano (2003) referred to shared personal practice as collegiality and professionalism. He cites several researchers (Fullan & Hargreaves, 1996; Villani, 1996) who described collegiality as how teachers work together authentically and professionally. Marzano (2003) further described research conducted by Friedkin and Slater who found that the schools that discussed professional issues and worked collaboratively to solve problems were more successful academically. Sergiovanni stated the need for collegiality, first in the form of leaders assisting, and then as a community where teachers share relevant academic information (2004). He argued that academic success was the goal of a learning community and focusing on continuous professional improvement would aid in teacher and student success.

Darling-Hammond (1996b) asserted that when sharing personal practice focusing on students' current progress and what is being done to address the needs was important. Sharing knowledge of personal practice allows for teachers to identify needs and solutions as a collective whole which will allow for more informed decision making (Darling-Hammond, 1996b). The sharing of data and strategies can lead to better group instruction. According to Blasé and Blasé (2004), utilizing data to drive development and using teachers to deliver professional learning were some of the strategies they found as themes in successful schools.

Examining Data

Several authors claim that an important aspect of PLCs is the gathering and analyzing of data. For example, Robinson, Lloyd, and Rowe (2008) found in a study examining leadership that analyzing test results and other weekly data, between teachers and teachers and leaders, could be linked to increased academic improvement. According to them in a PLC, schools should focus on creating common assessments that are standards-based checkpoints that allow teachers and leaders to analyze results and focus on strategies for improvement or re-teaching. Focusing on student results from common and state assessments, PLCs have the ability to collaboratively analyze data, develop strategies to address areas of improvement and strength, and implement a plan to solve and strengthen the problems (DuFour et al., 2008, p. 17). Sharing instructional practices based on data can lead towards improvement.

According to Chapman and Fullan (2007), the utilization of data to drive instructional-based practices are necessary to create positive instructional improvement. They argued that working together in a network and analyzing student data should increase student achievement. Kruse (2001) found that teachers in her study reported that they had a greater sense of purpose and drive for improvement when focusing on analyzing student achievement data. Little et al.

(2003) concluded from their research that examining and discussing student work enabled teachers to become a community of learners that focused on improving students' success through instruction.

Trust in PLC

Several educational researchers have stated that true PLCs are difficult to find but in successful ones there is a layer of trust among stakeholders (Kruse & Lewis, 1993b; Hord, 1997; Hipp & Huffman, 2003; Bolam et al., 2005; Forsyth, Adams, & Hoy, 2011). Trust was found to be essential for communities to exist and according to Hipp and Huffman (2003), "without a climate of trust and respect, and structures that promote continual learning, it is impossible to build a professional learning community" (p. 6). Trust is an important key in building relationships and establishing an environment that promotes community.

Tschannen-Moran and Hoy conducted a review of the literature and found many definitions; however, they found five elements of trust and used them in their definition of trust. They concluded their review with this definition: "trust is one party's willingness to be vulnerable to another party based on the confidence that the latter party is (a) benevolent, (b) reliable, (c) competent, (d) honest, and (e) open" (Hoy & Tschannen-Moran, 1999; Tschannen-Moran & Hoy, 1998; as cited in Tschannen-Moran & Hoy, 2000, p. 556). Each of the components is interdependent and works together to form a high level of trust.

A 1988 study conducted by Tarter and Hoy examined the relational trust between principals and teachers, and organizational health. They surveyed principals and teachers from 75 different schools using the Organizational Health Inventory (OHI) and two trust scales, previously developed by Hoy and Kupersmith (1985). They found a close relationship between organizational health and trust in the principal. In examining organizational health the

researchers described the importance of collegial relations among teachers and principals and the desire to change. They further argued that trust is a necessity in creating collegial relationships that promote academic achievement within healthy schools (Tarter & Hoy, 1988).

Supportive leadership was found to foster the professional culture in schools (Hoy, Tarter, & Witkoske, 1992). Hoy et al. examined faculty trust not just from the principal-teacher relationship but also from the teacher-teacher relationship. They found through their respondents that the principal's role is a supportive one, and that he or she creates an open environment in which teachers feel safe. The results of their research led them to conclude that in an open and supportive environment teachers were shown to develop professional collegial relationships and were open to discussing improved instruction (Hoy et al., 1992). In a similar study conducted by Hoy and Hannum (1997), the researchers found that among 86 middle schools surveyed, the principal set the foundation for professional relationships among staff. Principals, as leaders, are more supportive in their role of developing trust (Hoy et al., 1992). However, if principals create a positive climate and setup environments that are supportive, according to Tschannen-Moran and Hoy (2000) they can create higher levels of faculty trust.

In creating higher levels of trust among school professionals, research has shown that administrators should be willing to share decision making and create a supportive environment (Tschannen-Moran, 2009; Tschannen-Moran, 2000; Tarter & Hoy, 1998). Creating collegial trust through shared decision making within a supportive environment stems from leadership that is open and trustworthy. In an environment where the leaders were trusted it was shown that the teachers had collegial professional learning relationships (Hoy, Smith, & Sweetland, 2002). Collegial relationships enabled collaboration among teachers. According to Mitchell et al. (2011), high levels of trust led to collaboration between teachers and teachers and leaders.

Collaboration among teachers is different than collaboration between school administrators and teachers. While trust can be demanded by a principal, trust among teachers has been shown not to exist when openness between teachers and leaders was absent (Tschannen-Moran, 2000; Goddard, Salloum, & Berebitsky, 2009).

Trust can be seen as a component of the five attributes that make up a professional learning community. Trust is the foundation for collegial relationships (Tarter & Hoy, 1988), shared leadership (Hoy et al., 2003), and a supportive environment (Hoy et al., 1992); it also underpins a shared vision, mission, and goals. It could be asserted that without levels of trust between teachers, teachers and administration, and teachers and their clients, PLCs were not sustained nor developed (Byrk, Camburn, & Louis., 1999; Wahlstrom & Lewis, 2008; Hipp & Huffman, 2003).

Several studies (Goddard, Tschannen-Moran, & Hoy, 2001; Hoy et al., 1992, Goddard et al., 2009; Bryk & Schneider, 2002) indicated that trust was a strong indicator for increased academic achievement. Bryk and Schneider (2002) studied the importance of trust as it related to the school reform efforts of the Chicago Public Schools in the 1990s. Using both quantitative and qualitative data they followed students in schools and were able to track their progress. Tracking what the researchers defined as relational trust, trust between teachers, teachers and parents, teachers and students, and teachers and administrators, they were able to gather data that showed a relationship between trust and academic achievement (p. 20). They found that within the schools they tracked schools that grew as communities built on trust between faculty, administrators, and clients showed improved academic achievement (Bryk & Schneider, 2002, p. 121).

Goddard et al. (2001) examined survey and achievement results from 47 urban schools in one unified school district. The researchers found that “trust is a positive predictor of the variance in student achievement among schools” (Goddard et al., 2001, p. 14). Within their study they also examined levels of trust and relationships to race, gender, and socioeconomic status (SES). The Goddard et al. (2001) results showed that schools which included students with higher levels of advantaged socioeconomic status also had higher levels of faculty and client trust, and that minority status was relatively unrelated to teacher trust (p. 13).

A study of public elementary schools in Michigan found that trust was a positive predictor of student achievement (Goodard et al., 2009). As in earlier studies (Bryk & Schneider, 2002; Goddard et al., 2001), researchers maintained that while SES, race, and school size were influencers on trust, when accounting for these and other aspects of a schools makeup, trust was still a significant indicator of the levels of student achievement. The researchers concluded that their results were similar to other studies on trust and academic achievement and those schools that seek improvement focus on building and maintaining high levels of trust for academic growth and success (Goddard et al., 2009).

Academic Achievement

Academic student achievement has been one goal of public education. While public education has been criticized over time, the publication of the Equality of Educational Opportunity Study (EEOS or Coleman Report) was a significant criticism of public education and the failures within schools (Goodlad, 2004). The report stated that schools account for 10% of the variance in academic achievement while the other 90% stems from a student background (Marzano, 2003). This report impacted education and implied that schools did little to remove the barriers between students’ socioeconomic status and their ability, and therefore schools had

little chances of improving student achievement. While the nation struggled to improve schools during this time a second report surfaced in 1983 entitled *A Nation at Risk: The Imperative for Educational Reform* (Marzano, 2003).

In this report issued by the Commission on Excellence in Education, the researchers found evidence that schools were indeed failing students and the country (A Nation At Risk, 1983). They argued that the decline in performance was a result of the lowered and more general content, expectations, time, and level of teaching. These findings resulted in the commission recommending that improvement based on their recommendations be initiated immediately. While this report focused on the American education system another report Trends in International Mathematics and Science Study (TIMSS) indicated in 1995 and again in 1999 that as a country we were lagging in education and that we needed a reform for improvement (US Department of Education Institute of Education Sciences).

A reform for improvement entitled *The Goals 2000: Educate America Act* was signed into law in 1994. This act provided resources to states for the improvement of education. This act focused on improving teaching and curriculum as well as the implementation of a standards based education. The goal was to improve education through standards and lead the country into being the first, internationally, in math and science. These goals along with others were not reached by the year 2000, which brought in a new reform entitled No Child Left Behind (NCLB) (Public Law 107-110).

The implementation of NCLB in 2001 led to the development of Adequate Yearly Progress (AYP). AYP is the measure defined by the U.S. Department of Education to determine a school's and state's progress on meeting the goals of achievement through standardized testing (U.S. Dept. of Ed. Sec. 1111.). States were required to submit proposals of their standards and

benchmarks for having students meet the goal of 100 percent of all students meeting expectations by the year 2014, as required by the NCLB legislation signed by President George Bush.

Georgia's participation and the acceptance of their NCLB assessment plan occurred in 2004.

Georgia set up Annual Measurable Objective (AMO) goals in each subject area that increase from 50% meeting identified characteristics in 2004 to 100% in 2014. The AMO in each area increased every 1 - 3 years depending on the subject and in accordance with NCLB.

For accountability purposes Georgia developed the Georgia Performance Standards (GPS). Under the state superintendent of schools, the state set to achieve rigorous standards aligned with nationally accepted standards for learning. To monitor achievement, students were tested in grades 1-8, and in 11th grade. For the elementary and middle school levels students were tested with Georgia's Criterion Reference Competency Test, or CRCT, which was aligned with the state standards. Students in 11th grade are assessed with the Georgia High School Graduation Test (GHSGT). The CRCT and GHSGT are utilized not only for measuring progress for AYP, but in grades 3, 5, and 8, for promotion to the next grade level and the GHSGT for a diploma (Georgia Department of Education, 2010).

The CRCT contains an average of 70 questions aligned to the standards in each subject area; 60 questions are scored while the other 10 are typically test questions for future tests.

Students who typically answer 50% of the questions correctly will meet the standards and be given a score of 800 or above. Initially the scores were set in a different range with a passing score of 300, but that was re-evaluated and changed to 800 in 2006. Students who score below an 800 are considered not to have met expectations for the year, and in grades 3, 5, and 8 are retained unless approved for placement by a committee. In Georgia while the AMO has

increased, the state as a whole has fewer schools meeting AYP due to the increases in AMO criteria (GaDOE) (see Table 1).

Table 1

Percentage of Georgia Schools Meeting AYP

<i>Year</i>	<i>Percent Meeting</i>	<i>AMO MATH</i>	<i>AMO ELA</i>
2011	72.7	75.7	80.0
2010	77.2	67.6	73.3
2009	84.0	59.5	73.3
2008	79.4	59.5	73.3
2007	82.0	58.3	66.7

With AMO increasing by an average of 6 to 7% each year, if the current trend continues more schools will fail to make AYP and will be categorized as needs improvement or failing schools, however, recent political pressure in education has pushed for revised objectives and goals.

Theoretical Framework

Professional learning communities, as they exist in schools, are often fostered through collaboration among teachers, administrators, and other staff members. Their intended design is to help schools improve through collaboration, learning, and shared leadership (Hord, 1997). Advocates argue that learning community structures need to be in place to ensure collaboration and learning take place among staff members. The development of a learning community relies on teachers willing to learn through collaboration with other teachers and administrative personnel. While professional learning communities are not an instant fix, through planning and the building of a vision and mission and shared practice proponents argue that the community can begin to develop and educational change take place. This study was based on the theory that professional learning communities built on a foundation of trust will push the community

towards improvement. While teachers and administrators can create structures within schools that support collaboration, discussion, and learning, without a level of trust established between all that are working together, improvement could be difficult if not impossible. With trust established between teachers, teachers and leaders, and teachers and students, the staff can move in a direction of increased collaboration, learning, and leading towards improvement. Those discussions will then lead to higher levels of student academic achievement.

Trust (Tschannen-Moran, 2000; Hoy, Tarter, & Woolfolk Hoy, 2006) and professional learning communities (Vescio, Ross, & Adams, 2008; Lomos, Hofman, & Bosker, 2011a) have both been linked to student achievement; however they have not been linked together as a predictor of student achievement. This study focuses on the relationship between the perceived levels of professional learning communities, trust, and their relationships to student achievement.

Summary

This chapter explored the history of professional learning communities from their foundations to what educational researchers and scholars are describing today. The next section identified the specific characteristics of professional learning communities and detailed research on each area and the effects on professional learning communities. Trust was then explored as a foundation for collaboration and shared leadership within PLCs. The last section described the need for accountability due to the federal government's drive for higher achievement internationally. Finally student achievement in Georgia was explained.

CHAPTER III:
METHODOLOGY

Introduction

The purpose of this study was to determine the effects that professional learning communities and trust have on student academic achievement as measured by school scores on the Georgia Criterion Referenced Competency Tests (CRCT). Some evidence exists that supports the idea that professional learning communities have been shown to increase student academic achievement through the collaborative efforts of teachers (Berry, Johnson, & Montgomery, 2005; Bolam et al., 2005; Strahan, 2004). Professional learning communities focus on school improvement by providing a structure that enables teachers to collaborate in developing plans, assessments, and strategies for teaching and learning. Tschannen-Moran (2001) claimed that creating an environment that encourages collaboration can be founded on trust. She argued that trust sets the environment for collaboration through the sharing of ideas and feedback between teachers and between teachers and leaders.

This chapter details the research methodology used to examine trust, implementation level of PLCs, and student achievement. Included in this chapter are the purpose of the study, research questions, design, population and sample, instruments used, data collection methods, data analysis techniques, hypothesis, and study limitations. This study examined the impact of trust and implementation level of PLCs on student achievement and the relationships that may exist between the three variables. Five research questions were answered in this study:

1. To what extent is a school's level of trust related to the perceived implementation level of PLCs;

2. Is there a relationship between a school's level of trust and student achievement;
3. Does a PLCs perceived implementation level vary with student achievement;
4. Do schools with high levels of trust and high perceived implementation levels of PLCs have higher student achievement; and
5. What is the difference between middle and elementary schools when examining the perceived implementation of PLCs, trust, and student achievement?

Research Design

This study was a non-experimental study utilizing cross-sectional data with the school as the level of analysis. Survey methods were used to gather data on schools perceived levels of trust and the perceived implementation level of PLCs through a combined survey that incorporated SEDL's School Professional Staff as a Learning Community Questionnaire (Hord, 1997) and the Omnibus T-scale (Hoy & Tschannen-Moran, 2003) measuring trust. Surveys were distributed through the Qualtrics™ Research Suite and given to certified staff members at each school. Student achievement data for each school was obtained from the Georgia Department of Education Office of Accountability. Aggregated demographic data were collected from each respondent.

Population and Sample

The population for this study consisted of a convenience sample of middle and elementary schools included in six school systems located within the metro Atlanta area in Georgia. Middle schools were schools that included grades 5-8, 6-8, or 7-8 and elementary schools were defined as schools with at least two grades and containing a promotion year grade, either grade 3 or 5. Within the six school districts there were schools containing various demographics, locations from urban to rural and varying levels of socio-economic status. School

system superintendents were first asked for permission to conduct research within their schools and following their approval building level principals were contacted. Within the six school districts there were a total of 93 middle and elementary schools. Out of the 93 schools contacted through e-mail and phone calls, 61 agreed to participate in the study for a completion rate of 66%. Of the schools choosing not to participate in the study, principals noted timing, end of the year testing, change of position, survey questions on trust, and the voluntary nature of the survey. The final sample included 16 middle schools and 43 elementary schools as two elementary schools did not return any surveys after the initial contact was made. Schools that elected to participate were e-mailed surveys and instructions for distribution to all certified staff members including administrators, full-time teachers, counselors, and media specialists. The e-mails contained information about the study and guaranteed anonymity, confidentiality, and the option to exclude them from participation in the study. After surveys were e-mailed, approximately 1,037 surveys were completed out of 2,300 submitted to certified staff members; however, after removing uncompleted surveys, 830 were included in this study for a return rate of 36.1%.

Instruments

The study took place in six school districts located near a large metropolitan city in Georgia. Two instruments were combined into one survey that was then entered into the Qualtrics™ Research Suite software for electronic distribution. Certified staff members were e-mailed links to surveys created for each school system. Some principals elected to submit the survey link to their staff members while others requested the researcher send out the surveys through the Qualtrics™ Research Suite software.

Professional Learning Communities

The SEDLs Schools Professional Staff as Learning Community Questionnaire (SPSLCQ) developed by Shirley Hord (1996) was used to measure the schools implementation of professional learning communities. The questionnaire consists of 17 Likert-type items that teachers rated from 1 to 5. There are three sentences that define each item with the numbers 1-5 labeled above. The 17 items focus on the five dimensions of a PLC as defined by Hord (1997, 2004): shared leadership and decision making, shared vision and mission, collaborative learning to address student needs, peer to peer feedback, physical condition and human capacity. The SPSLCQ instrument was field tested by the Appalachia Educational Laboratory (AEL) and

confirms that it does differentiate professional staff by school at three levels, is very reliable internally, is marginally reliable in terms of its stability, possess satisfactory concurrent validity with a school climate instrument, and displays very satisfactory construct validity when compared to a “known group” school faculty. (Meehan, Orletskey, & Sattes, 1997)

The internal consistency reliability was determined for each dimension utilizing Cronbach’s alpha. Principals facilitative leadership had an alpha of .8703, shared visions for improvement .8304, collective creativity and learning .8601, classroom observations and feedback .8434, and school conditions and capacities .8489; the total instrument had a reliability of .9389 (Meehan et al., 1997).

Trust

The Omnibus-T scale initially developed by Hoy and Tschannen-Moran in 1999 was used to examine trust. Hoy and Tschannen-Moran’s trust scale was developed by creating a pool of questions, having a panel of experts from Ohio State University rate the items, a field test with teachers, a pilot study with a small group of schools to test structure, reliability and validity, and then finally two large scale studies were conducted (Hoy et al., 2003). The Omnibus T-Scale consists of 26 Likert-type items that are rated on a scale from strongly disagree (1) to strongly

agree (6) and measure the five components of trust “Benevolence, reliability, competency, honesty, and openness” (Hoy & Tschannen-Moran, 2003). Contained within the 26 items are three subscales, teacher trust in the principal, teacher collegial trust, and teacher trust in clients and parents (clients). In previous analysis of the Omnibus T-Scale the factor loadings for the items within the subscales ranged as follows: trust in principal, .84 to .94, trust in colleagues .71 to .93, trust in clients, .75 to .91 (Hoy & Tschannen-Moran, 2003). The alpha coefficients of reliability were .98 for trust in principal, .93 for trust in colleagues, and .94 for trust in clients (Hoy & Tschannen-Moran, 2003). Sample questions include “Students in this school care about each other,” “Teachers in this school trust each other,” and “The principal of this school is competent in doing his or her job” (Hoy & Tschannen-Moran, 2003) (see Appendix B).

Student Achievement

Student achievement data were examined and evaluated using the Criterion Reference Competency Test (CRCT) data retrieved from the Georgia Department of Education Accountability website. Data from the 2011-2012 school years was used for this study. The CRCT is an instrument used by the Georgia Department of Education to assess student mastery of state standards in math, language arts, science, and social studies (GaDOE). Students must pass the math and language arts test in grades 3, 5, and 8 to be promoted to the next grade level. For the purposes of this study, only achievement levels in the academic area of math and grades 8, 5, and 3 were examined depending on grade levels represented in each school. Schools must have their student population achieve at 72.7% in order to be considered passing for math in their meeting of NCLB requirements of Adequate Yearly Progress (AYP). Scores of schools are reported as a percentage of students who met or exceeded on the CRCT, therefore the adverse of the number is the percentage of students within the school who did not meet standards. The

average score for each school was examined as a secondary dependent variable. While the average score is not used for AYP purposes, the average score can help rank the score when compared to other schools. This ranking, along with the percentage of students who met or exceeded standards, can give schools more insight into how they relate to other schools within the state, and help set a base line for improvement.

Hypothesis

H₁: As the school's level of trust (teacher, principal, clients) increases the perceived implementation level of professional learning community increases.

H₂: As the school's level of perceived professional learning community increases, student achievement increases.

H₃: As the school's level of trust (teacher, principal, clients) increases student achievement increases.

H₄: As the school's level of perceived professional learning community and trust (teacher, principal, clients) increase, student achievement increases.

H₅: Elementary school respondents will demonstrate higher levels of perceived professional learning communities and trust than those of middle schools.

Data Collection Methods

Teachers completed online surveys using Qualtrics™ related to trust and implementation level of PLCs. Permission to participate was obtained from the central office and the principal before the surveys were e-mailed to certified staff members. School principals who elected to participate were given a choice to e-mail a generic e-mail with instructions on e-mailing an attached letter with link to all full-time teachers, counselors, and administrators or having the researcher make contact by e-mail to their staff members. Included in the attached letter were

instructions on completing the surveys, a description of the study, and the information guaranteeing their anonymity, confidentiality, and offering the option not to participate. Once the surveys were completed during a five-week period online, the researcher accessed the data to perform an analysis of the results.

Data Analysis

The research design was quantitative. The independent variables were perceived levels of professional learning communities, trust in staff, trust in principal, and trust in clients. The dependent variable of this study was student academic achievement based on standardized state test scores in Georgia. The unit of analysis for this study was the school and individual data were aggregated to the school level for the variables in this study. The Pearson correlation coefficient was used to measure the relationship between PLCs and trust, PLCs and student academic achievement, and trust and student achievement.

To measure the effect of perceived levels of PLCs and trust on student academic achievement a backward multiple regression analysis was used. According to Farrar and Glauber (1967), regression analyses are used to determine a relationship between variables. A backward multiple regression analysis was completed to examine each variables, or combination of variables, influence on student academic achievement score on the CRCT. Field (2009) suggested that the backward regression be used to determine significance “because of suppressor effects, which occur when a predictor has a significant effect but only when another variable is held constant” (p. 213). The backward regression model inputs all independent variables first and removes the variable, according to its significance value of the t-test, if it is not making a statistically significant contribution to the dependent variable (Field, 2009). Independent t-tests were also completed on the independent variables to determine the difference between the

means, if any in middle and elementary schools. Data were compiled and entered into the Statistical Package for Social Science (SPSS) for analysis. The results of these analyses are presented in Chapter IV.

Table 2

Research Design and Methods Matrix

Research Question	Items	Methods
To what extent is a school's level of trust related to the perceived implementation level of PLCs?	SPSLCQ and Omnibus T-Scale	Correlation
Is there a relationship between a school's level of trust and student achievement?	Omnibus T-Scale and CRCT data	Correlation
Does a PLCs perceived implementation level vary with student achievement?	SPSLCQ and CRCT data	Correlation
Do schools with high levels of trust and high perceived implementation levels of PLCs have higher student achievement?	SPSLCQ, Omnibus T-Scale, and CRCT data	Backward Multiple Regression
What is the difference between middle and elementary schools when examining the implementation of PLCs, trust, and student achievement?	SPSLCQ, Omnibus T-Scale, and CRCT data	Independent t-tests

CHAPTER IV:

RESULTS

Overview

This chapter presents the results of the study. This research was designed to determine the relationships among perceptions of professional learning communities (PLCs), levels of trust between respondents and teachers, students, and the principal, and their effects on student achievement in Georgia. The data in this study were gathered from the School Professional Staff as Learning Community Questionnaire (SPSLCQ) and the Omnibus T-Scale surveys. Student achievement data were obtained by examining standardized test scores in math; demographic data were obtained through several questions; and socioeconomic status were obtained by the percent of students on free or reduced lunch. The school was the unit of analysis for this study and survey data was averaged to determine the mean for each variable. Included in this analysis are descriptive statistics for all variables, results from Pearson correlations, multiple regression analysis, and independent t-tests.

Schools' perceived level of professional learning community was assessed with the SPSLCQ survey, which contained 17 Likert-type items scored from 1 (never utilizing shared activities) to 5 (highly functional). The 17 questions are grouped into five factors or dimensions, shared decision making, shared vision, collective learning, shared practice, and supportive conditions. Responses reflect the perceptions of certified staff members (teachers, administrators, counselors) at each school.

Trust was measured using the Omnibus T-Scale. The Omnibus T-Scale contains 26 Likert-type items scored from 1 (strongly disagree) to 6 (strongly agree). The 26 questions correspond to three dimensions, trust in colleagues, trust in the principal, and trust in the clients. Survey questions were then averaged according to the guide presented by the survey developers (Hoy & Tschannen-Moran, 2003). Responses from certified staff members represent their perceptions of the level of trust within their schools.

Student achievement data were obtained for each school from the Georgia Department of Education (2011-2012) online report from the office of accountability. Student achievement was determined by standardized test scores on the Criterion Reference Competency Test (CRCT). The CRCT is used by the Georgia Department of Education to assess student mastery of content in academic areas. Scores in math and reading are used as benchmarks for promotion in grade 3, 5, and 8. Socioeconomic status was also obtained from the Georgia Department of Education's online report card through examining the percent of students on free or reduced lunch.

Six school systems located within the metro Atlanta area agreed to participate in this study. All middle and elementary schools, 93 in total, in those six systems were asked and 61 responded with a yes for a willingness to participate rate of 66%. Principals were given the option to have the survey sent to the staff or to distribute the survey themselves. Most schools elected for the researcher to distribute the survey electronically. Surveys were sent out to 2,400 certified employees via a web link created through the Qualtrics Research Suite™. Eight hundred and thirty six respondents returned completed surveys for willingness to participate rate of 35%. There were a total of 16 middle schools with grades 5 - 8, 6 - 8, 7 - 8, and 43 elementary schools with grades K - 5, K - 6, K - 3 that responded to the survey for a total of 59

schools, two schools were excluded due to limited responses from the principals after initial contact.

Demographic Respondent Data

Aggregated demographic data were collected from many of the respondents. The demographic data collected were an optional part of the study and while not all of the 836 respondents answered the demographic questions all 836 responded to the professional learning communities and faculty trust surveys questions. Table 3 shows the breakdown of the demographic data collected. The grade level of the respondents was similar across respondents. The majority of the respondents were teachers (n = 703); however, 29 administrators also responded. The subjects taught were varied; however, because most of the elementary schools were not departmentalized the results show significantly higher numbers in the areas of math, science, language arts, and social studies that are arranged in departments. Thirteen percent of the respondents indicated they were not in some type of learning community, however only two administrators indicated that their schools were not implementing a PLC. Most of the teachers had been at their school between 1 and 20 years.

Table 3

Summary of Participant Demographic Data

Category	Level	Total	Percent of Total
Grade (N=642)	K	67	10
	1	68	10
	2	59	9
	3	95	15
	4	69	11
	5	89	14
	6	63	10
	7	58	9
	8	74	12
Years Teaching (N=772)	1 st Year	23	3
	2-3 Years	24	3
	4-5 Years	58	8
	6-10 Years	169	22
	11-20 Years	307	40
	21-30+ Years	191	24
Role (N=782)	Administrator	26	3
	Teacher	703	90
	Counselor	18	2
	Other	35	5
Subject Taught (N=1,695)*	Math	420	25
	Science	359	21
	Language Arts	438	26
	Social Studies	306	18
	Fine Arts	37	2
	Special Education	78	5
	Technology/Keyboarding	47	2
	PE	10	1
Years in A PLC (N=737)	We are not in a PLC	98	13
	First Year	32	5
	1-2 Years	69	9
	3-5 Years	193	26
	6-10 Years	345	47
Years at Current School (N=333)	1 st Year	21	6
	2-3 Years	56	17
	4-5 Years	51	15
	6-10 Years	129	39
	11-20 Years	67	20
	21-30+ Years	9	3

*Note. The total for each area changed as these responses were not required as requested by schools. *The subjects taught are higher because elementary schools in this study were not departmentalized*

Descriptive Statistics

Descriptive statistics for the independent and dependent variables were aggregated to the school level. The independent variables were the faculty’s perceptions of the perceived level of the school as a learning community, trust in clients, trust in principal, trust in colleagues, and the grade level of the school, either middle or elementary. The dependent variable in this study was student academic achievement that was based on CRCT scores. Two measures of academic achievement were examined: 1) the percent of students who met or exceeded standards on the CRCT, which applies towards adequate yearly progress (AYP); and 2) the average score for each school. The percent of students on free and reduced lunch was also recorded. Table 4 contains the descriptive statistics for all of the variables within this study.

Table 4

Descriptive Statistics for All Variables by School (N = 59)

	Minimum	Maximum	Mean	Std. Deviation
Professional Learning Community	3.21	4.53	3.83	.29
Trust in Colleagues	3.68	5.75	4.73	.46
Trust in Principal	3.29	5.70	4.71	.65
Trust in Clients	2.99	5.40	4.31	.52
% Free or Reduced Lunch	.05	.96	.52	.24
Average Achievement Score	805.15	906.18	842.04	19.39
Percent Meet and Exceeds	53.70	100.00	86.86	9.81
Grade	1	2	1.27	.45

Table 5 presents the descriptive statistics for the five dimensions of professional learning communities. Sixty-one schools submitted responses to the surveys, but two of the schools did not have more than five responses, so their data were removed before analysis.

Table 5

Descriptive Statistics for PLC dimensions by School (N = 59)

	Minimum	Maximum	Mean	Std. Deviation
Professional Learning Community	3.21	4.53	3.83	.29
Shared Leadership	2.85	4.50	3.61	.40
Shared Vision	3.24	5.00	4.28	3.44
Collective learning	3.20	4.73	4.03	.32
Peer Feedback	1.25	4.00	2.73	.56
School Capacities	3.21	4.67	3.88	.35

Reliability Coefficients

The major variables in this study were checked for internal reliability. Data from both the individual respondents and the schools were checked as the unit for analysis was the school. According to Kline (1999 as cited in Field, 2009), an alpha of .7 or higher is appropriate for reliability. All variables within this study had Cronbach alpha's of at least .921, as seen in table 6, when examined on an individual basis. When the scores from each respondent were averaged by school, the Cronbach alpha was slightly higher than the individual responses in all variables. The variables within the study were confirmed as reliable within this study.

Table 6

Reliability Correlations of Individual and School

Variable	Instrument	Number of Items	Individual Respondent as the unit of analysis		School as the unit of analysis	
			Cronbach's alpha	<i>N</i>	Cronbach's alpha	<i>N</i>
Professional Learning Communities	SPSLCQ	17	.925	796	.929	59
Trust in Principals	Omnibus T-Scale	8	.948	821	.978	59
Trust in Clients	Omnibus T-Scale	10	.921	819	.965	59
Trust in Colleagues	Omnibus T-Scale	8	.923	830	.968	59

Correlation Analysis

Correlation analyses were conducted on the independent and dependent variables using Pearson correlation coefficients. The independent variables of perceived levels of professional learning communities, trust in colleagues, trust in principal, and trust in clients and the dependent variable of student academic achievement were analyzed. Control variables for this study are the level, elementary or middle, and the percentage of students who received a free or reduced lunch (%F/RL). The correlation coefficient helps interpret the relationship between the variables and as a general rule these guidelines are accepted: 0.8-1.0= very strong correlation, 0.6-0.8 = strong, 0.4-0.6 =moderate, 0.2-0.4 = weak, and 0.0-0.2 = very weak, if the coefficient is negative it would fall within those ranges as well (Gall, Gall, & Borg, 2008). The correlations will be used to test hypothesis 1, 2, and 3.

Table 7

Pearson Correlation Coefficients of All Variables (N=59)

	Trust in Colleagues	Trust in Principal	Trust in Clients	Achievement % Meets and Exceeds	Achievement Average Score per School	%F/RL
Professional Learning Community	.731**	.666**	.701**	.181	.166	-.215
Trust in Colleagues		.605**	.827**	.306*	.376**	-.359**
Trust in Principal			.468**	.047	.066	-.146
Trust in Clients				.513**	.570**	-.584**
Academic Achievement % Meets and Exceeds					.836**	-.560**
Achievement Average Score per School						-.666**
%F/RL						--

** Correlation is significant at the .01 level (2-tailed).

* Correlation is significant at the .05 level (2-tailed).

There were 59 cases for the correlations in Table 7. All correlations that were significant were at the .01 level (two-tailed), except for the relationship between academic achievements as the percent that meet and exceed the standards and trust in colleagues which was significant at the .05 level (two-tailed). Socioeconomic status and academic achievement, as percent of meet and exceeds as well as the average score in each school, did not have a significant relationship with perceived level of professional learning community and trust in the principal.

RQ 1: To what extent is a school's level of trust related to the perceived implementation level of PLCs?

There was a strong and positive correlation between the perceived level of professional learning community and trust in colleagues ($r = .731, p < .01$). Schools that have higher levels of perceived levels of PLCs also had higher levels of trust between colleagues. The correlation between the perceived level of professional learning community and trust in principal was also strong and in a positive direction ($r = .666, p < .01$). Schools that had higher levels of faculty trust in the principal also had higher perceived levels of PLCs. The perceived level of professional community and trust in clients has a strong and positive correlation ($r = .701, p < .01$); the more the school's faculty trust the clients the higher the level of perceived level of PLCs. In schools that have higher levels of trust then there are higher levels of perceived learning communities.

RQ 2: Is there a relationship between a school's level of trust and student achievement?

There was a very weak, non-significant, positive correlation between the perceived levels of professional learning community and student achievement as the percent of students who met or exceeded standards ($r = .181$). The correlation between the perceived levels of professional learning community and student achievement as the average score per school was also resulted in a very weak, non-significant positive correlation ($r = .166$) (see Table 7).

RQ 3: Does a PLCs perceived implementation level vary with student achievement?

In examining Table 7, there was a strong and positive correlation between trust in colleagues and trust in the principal ($r = .605, p < .01$). The higher the level of trust in colleagues resulted in higher trust in the principal. There was a very strong positive correlation between trust in colleagues and trust in clients ($r = .827, p < .01$), so the higher the level of trust

between colleagues, the higher the trust in students and parents. The correlation between trust in the principal and trust in clients was positive and moderate ($r = .468, p < .01$); the more trust that a school has in the principal then the higher the trust in clients. The $r = .306 (p < .05)$ correlation between trust in colleagues and student achievement as the percentage of students who met and exceeded ($r = .306, p < .05$) as well as the average score in each school ($r = .376, p < .01$) was positive but had a weak correlation. The more trust a school had between colleagues the higher the student achievement. There was a positive and moderate correlation between trust in clients and academic achievement as percentage of students who met and exceeded ($r = .513, p < .01$) and average score in each school ($r = .570, p < .01$). Schools that had higher levels of trust in clients had higher levels of student achievement. The correlation between trust in principal and student achievement was not significant, which is expected based on previous research of school effectiveness (Forsyth et al., 2011).

There was a very strong significant correlation between the percent of students who met and exceeded expectations and the average score in each school ($r = .836, p < .001$). Schools that have higher levels of students who met and exceeded expectations also have higher average schools.

The percent of students on free and reduced lunch had a strong negative correlation with academic achievement as the average score in each school ($r = -.666, p < .01$) and percent of students who met and exceeded expectations ($r = -.560 p < .01$). This finding shows that the higher percent of students on free or reduced lunch in each school, the lower the academic achievement. There was a moderate negative correlation between the percent of students on free and reduced lunch and trust in clients ($r = -.584, p < .01$), the higher the levels of students on free or reduced lunch the lower the trust in clients. There was also a weak negative correlation

between the percent of students on free and reduced lunch and trust in colleagues ($r = -.359$, $p < .01$); schools that have higher levels of students on free or reduced lunch have less trust in colleagues. The percent of students on free and reduced lunch did not have a significant correlation with professional learning community or trust in principal. The percent of students on free and reduced lunch was negatively correlated with all variables, so as the percent of students on free and reduced lunch increases the other independent variables decrease.

Although not a hypothesis for this study, a separate correlation analysis was conducted on the five dimensions of professional learning communities and both areas of academic achievement. From this analysis it was determined that dimension number two, shared vision, had a significant but weak relationship to the percent of students who met and exceeded expectations ($r = .273$, $p < .05$). Schools that had higher levels of shared vision had higher student achievement as the percentage of students who met or exceeded expectations.

Regression Analysis

A stepwise backward multiple regression was run on both variables of meets and exceeds expectations and on the average score per school. A stepwise backward regression was done as the model removes any predictors, after they are tested and found not to be significant. Once removed the remaining predictors are placed back into the regression to be calculated again. Only the variable of percent of students who meet and exceed is reported to the state for Adequate Yearly Progress; however the variable of the average score for each school was regressed as it helps to more adequately rank schools within the state.

RQ 4: Do schools with high levels of trust and high perceived implementation levels of PLCs have higher student achievement?

Results of the stepwise backward regression resulted in the 4th model as the best choice containing the variables of percent of student on free or reduced lunch and trust in clients in predicting student achievement scores for the students who meet and exceed. The model had an r-square value of .34, which means that 34% of the variability in the percent of students who meet and exceed could be attributed to socioeconomic status and trust in clients.

The results indicated that all models performed well in predicting the percent of students who meet or exceed, however the fourth model represented the best prediction out of the four which contained the variables of socioeconomic status and trust in clients.

Table 8 represents the coefficients for the regression model. Standardized beta coefficients are used to indicate the impact that the independent variables have on the variance in the dependent variable. The standardized beta coefficients of model four for the percent of student on free or reduced lunch was $-.39$ ($p < .01$) and $.28$ ($p < .05$) for trust in clients. According to the beta coefficients of model 4, both variables were significant in predicting the percent of students who meet or exceed expectations; however, the percent of student on free or reduced lunch, although negative, contributed to more of the variance in the scores than trust in clients. For every drop in the percent of students on free or reduced lunch by 16.28 units the percent of students who meet or exceeds standards goes up by one. The percent of students who meet or exceed standards also is increased by one for every increase of 5.34 units of trust in clients. The F change for the regression indicates that taking out the other variables, trust in colleagues, PLC level, and trust in principal, does not significantly affect the fit of the model.

Tests for multicollinearity indicated that a low level was present (tolerance = .66 for %F/RL and trust in clients).

Table 8

Coefficients for the Stepwise Backward Regression for Variables Predicting Percent Meets and Exceeds (N=59)

Variable	Model 1			Model 2			Model 3			Model 4		
	<i>B</i>	<i>SE B</i>	β									
% F/RL	-13.01	5.80	-.32*	-13.55	5.67	-.33*	-14.78	5.41	-.36**	-16.28	5.39	-.39**
Trust in Clients	10.66	4.63	.56*	9.09	3.56	.48*	7.42	2.78	.39*	5.34	2.47	.28*
Trust in Principal	-1.67	2.26	-.11	-2.04	2.13	-.14	-2.86	1.82	-.19			
PLC Total	-4.13	6.20	-.12	-4.58	6.12	-.14						
Trust in colleagues	-2.48	4.63	-.12									
R ²		.40			.40			.39			.38	
Adjusted R ²		.35			.36			.36			.34	
F for change in R ²		7.17***			.29			.56			2.47	

*p < .05 **p < .01 ***p < .001

A second stepwise backward regression was run on the average score for each school by the independent variables. Results of the stepwise backward regression resulted in the 3rd model as the best fit containing the independent variables of the percent of students on free or reduced lunch (%F/RL), professional learning communities (PLC), and trust in clients. Model 3 had an r^2 value of .54, which means that %F/RL, trust in clients, and PLCs explained 54% of the variability in the average achievement score in each school (see Table 9).

The results of the analysis indicated that all models performed well in predicting the percent of students who meet or exceed, however the third model represented the best prediction out of the three which contained the percent of students on free or reduced lunch, trust in clients, and the perceived level of PLCs. The standardized beta coefficients of model three for percent of students on free or reduced lunch was $-.42$ ($p < .01$), $.54$ ($p < .01$) for trust in clients, and $-.30$ ($p < .05$) for the perceived level of PLCs. According to the beta coefficients of model 3, all three variables were significant in predicting the average score for each school. In this model for every drop in the percentage of student on free or reduced lunch the average score per school increased by one. For every drop in PLC total by 19.79 the average score in each school increased by one. The average score in each school would increase by one for every increase of 20.09 of trust in clients. In this model trust in clients contributed more to the variance on scores than the percent of students on free or reduced lunch and perceived levels of PLCs. The F change for the regression indicates that taking out the other variables did not significantly affect the significance of the regression model. Tests for multicollinearity indicated that a low level was present (tolerance = .585 for %F/RL, .451 for PLC, and .312 for trust in clients).

Table 9

Coefficients for the Stepwise Backward Regression for Variables Predicting Average Scores (N = 59)

Variable	Model 1			Model 2			Model 3		
	<i>B</i>	<i>SE B</i>	β	<i>B</i>	<i>SE B</i>	β	<i>B</i>	<i>SE B</i>	β
%F/RL	-34.32	10.08	-.42**	-33.90	9.84	-.42**	-33.88	9.79	-.42**
PLC Total	-16.47	10.79	-.25	-16.13	10.60	-.25	-19.79	9.04	-.30*
Trust in Clients	18.88	8.05	.51*	20.08	6.18	.54*	20.09	6.15	.54**
Trust in Principal	-2.77	3.92	-.09	-2.48	3.70	-.083			
Trust in colleagues	1.90	8.05	.05						
R ²		.54			.54			.54	
Adjusted R ²		.50			.50			.51	
F for change in R ²		12.36***			.06			.45	

*p < .05 **p < .01 ***p < .001

Independent T-Test

RQ 5: What is the difference between middle and elementary schools when examining the perceived implementation of PLCs, trust, and student achievement?

Independent t-tests were conducted for the independent variables of perceived levels of professional learning communities (PLCs) and each dimension of trust, student, teacher, and principal, for the grade level of the schools, elementary or middle. The independent t-test was used to determine if there was a difference between the variables at the two grade levels. For the variable of PLCs, Table 10 shows the group statistics for the t-test analysis of PLC and grade level, while table 11 shows the t-test analysis of the variables. Teachers in elementary schools (M = 3.89, SE = .05) had higher perceived levels of PLCs than teachers in the middle school (M = 3.66, SE = .05). This difference was significant $t(57) = 2.791, p < .01$; and represented a medium effect size $r = .35$.

Table 10

Group Statistics for T-Test Analysis of PLC and Grade Level

	Grade Level	N	Mean	SD	Std. Error Mean
PLC	1 (elementary)	43	3.89	.30	.05
	2 (Middle)	16	3.66	.19	.05

Table 11

T-Test Analysis of PLC and Grade Level

	Levene's Test for Equality of Variances		t-test for Equality of Means		
	F	Sig.	t	Df	Sig (2-tailed)
PLC	3.693	.060	2.791	57	.007

A separate t-test analysis was run for the dimensions of trust and the difference in grade levels. Table 12 represents the group statistics for the variables and table 13 represents the t-test analysis for the variables. Elementary schools ($M = 4.801$, $SE = .066$) generally had higher levels of trust in colleagues than those in middle schools ($M = 4.544$, $SE = .124$). The difference between the two grade levels was not significant $t(57) = 1.951$, $p > .05$, and the effect size $r = .25$ was small. Elementary schools ($M = 4.747$, $SE = .104$) had higher levels of trust in principal than the staff members in middle schools ($M = 4.598$, $SE = .139$), and the difference between the two levels was not significant $t(57) = .782$, $p > .05$ with a small ($r = .10$) effect size. The variable of trust in clients was higher in elementary schools ($M = 4.479$, $SE = .068$) than in middle schools ($M = 3.871$, $SE = .112$). The difference between the two grade levels was statistically significant ($t(57) = 4.659$, $p < .001$) with a high effect size $r = .53$.

Table 12

Group Statistics for T-Test Analysis of Trust and Grade Level

	Grade Level	N	Mean	SD	Std. Error Mean
Trust in Colleagues	1 (elementary)	43	4.801	.431	.066
	2 (Middle)	16	4.544	.497	.124
Trust in Principal	1 (elementary)	43	4.747	.684	.104
	2 (Middle)	16	4.598	.556	.139
Trust in Clients	1 (elementary)	43	4.479	.446	.068
	2 (Middle)	16	3.871	.446	.112

Table 13

T-test Analysis of Trust and Grade Level

	Levene's Test for Equality of Variances		t-test for Equality of Means		
	F	Sig.	t	Df	Sig (2-tailed)
Trust in colleagues	.532	.469	1.951	57	.056
Trust in Principal	.524	.472	.782	57	.437
Trust in Clients	.050	.824	4.659	57	.000

Summary

Chapter IV presented a recapitulation of the research study, descriptive statistics, bivariate correlations, stepwise backward regressions, and independent t-tests, for analysis. This study focused on five hypotheses:

H₁: As the school's level of trust (teacher, principal, and clients) increases the perceived implementation level of professional learning community increases.

H₂: As the school's level of perceived professional learning community increases, student achievement increases.

H₃: As the school's level of trust (teacher, principal, and clients) increases student achievement increases.

H₄: As the school's level of perceived professional learning community and trust (teacher, principal, and clients) increase, student achievement increases.

H₅: Elementary school respondents will demonstrate higher levels of perceived professional learning communities and trust than those of middle schools.

The first hypothesis states that as the perceived level of professional learning community increases then the schools level of trust (teacher, principal, and clients) increases, and was confirmed through the correlation analysis. Data indicate that there is a large effect of perceived level of PLCs and that of trust in colleagues ($r=.731, p < .01$), trust in principal ($r = .666, p < .01$), and trust in clients ($r = .701, p < .01$). All three of the correlations are in a positive direction and indicated that trust in colleagues, principal, and clients and perceived levels of professional communities are strongly correlated.

The second hypothesis was not supported and states that as the perceived level of professional learning community increases then student achievement will also increase. This hypothesis was examined by a correlation analysis and was found to be not significant to the average score in each school ($r = .166$) or to the percent of students who meet and exceeds the standard ($r = .181$).

The third hypothesis was partially supported. The level of trust in colleagues and its relationship to both the average score in each school ($r = .376, p < .01$) and percent meets and exceeds the standard ($r = .306, p < .05$) was weak but existed. There was a moderate relationship between trust in clients and the average score in each school ($r = .570, p < .01$) and the percent of students who met and exceeded expectations ($r = .513, p < .01$). The relationship between trust in the principal and the average score in each school ($r = .06$) and the percent meets and exceeds the standard ($r = .047$) was not statistically significant.

The fourth hypothesis was tested by a stepwise backward multiple regression and was partially supported. There were five variables tested and of those five only socioeconomic status ($t(55) = -3.46, \beta = -.42, p < .01$), perceived levels of PLCs ($t(55) = -2.19, \beta = -.30, p < .05$), and trust in clients ($t(55) = 3.27, \beta = .54, p < .05$) were significant predictors of the average score in

each school. They explained 51% of the variance in the average score in each school ($R^2 = .51$). There were two predictors for the percent of students who met or exceeded expectations on the achievement test; socioeconomic status ($t(56) = -3.02, \beta = -.39, p < .01$) and trust in clients ($t(56) = 2.16, \beta = .28, p < .05$). Trust in clients and the percent of students on free and reduced lunch explained 34% of the variance in the percent of students who met and exceeded the standards ($R^2 = .34$).

The fifth hypothesis states that elementary schools will show higher levels of perceived levels of PLCs and higher levels of the three dimensions of trust. An independent t-test partially confirmed this hypothesis. Teachers in elementary schools had a significant difference in the perceived levels of PLCs when compared to middle school ($t(57) = 2.791, p < .01$). The variables of trust in principal and trust in colleagues were not statistically significant, however trust in clients was statistically significant ($t(57) = 4.659, p < .001$) with an effect size of $r = .53$ ($p < .001$).

Out of the five hypotheses one was fully supported. Three hypotheses were partially supported based on the variables involved. The hypothesis that student achievement would increase based on higher levels of perceived learning communities was not supported. The findings do however support that there is a relationship between professional learning communities and the three dimensions of trust.

Non-hypothesized Findings

There were some interesting findings that were not related to the hypotheses examined in this study. In examining respondents' answers to the SPSLCQ survey to the five dimensions of a PLCs, shared vision was the only item that had a significant relationship with student achievement. All of the other dimensions had significant relationships with each other except for

dimension four, shared personal practice, which only had a relationship with the total PLC measure. In the stepwise backward multiple regression analysis professional learning communities, trust in colleagues, the percent of students on free or reduced lunch, and trust in principal shared a negative relationship with both the average score in each school and the percent of students who met and exceeded the standard. While the significance was not high in most cases, only trust in clients shared a positive relationship with both variables.

CHAPTER V:

DISCUSSION AND CONCLUSIONS

Accountability has been a driving force in education for the past 15 years. With the implementation of GOALS 2000, No Child Left Behind, and now newly adopted state and national standards, schools have been forced to examine ways to improve achievement while also working with a decreased budget. Since the Coleman report in 1966, researchers have been focused on ways to improve education and increase achievement through examining teacher instruction and education. Several researchers (Rivkin et al., 2005; Aaronson et al., 2007; Huggins et al., 2011) have suggested that improving teacher quality through professional learning and development led to higher academic achievement. Several advocate that one way to improve teacher quality is through professional learning communities (Borko, 2004).

A portion of this study focused on the construct of professional learning communities (PLCs) developed by Hord (1997). Hord (1997) described five dimensions of PLCs: shared leadership, shared vision, collaboration, supportive conditions, and shared personal practice and their impact on school improvement. While school organizations could put the structures of PLCs in place and discuss ways for improvement and teaching, these structures alone may not provide the in-depth discussions and collaboration that are needed for improvement. Professional learning communities that are successful have the thread of collaboration and trust throughout. According to several researchers (Hord, 1997; Hipp & Huffman, 2003; Bolam et al., 2005), trust was found to be essential for establishing an environment that promotes learning collaboration. The second portion of this study focused on trust within schools and PLCs.

Trust has been linked to student achievement in some research studies (Goddard et al., 2001; Hoy et al., 1992; Byrk & Schnieder, 2002, Goddard et al., 2009). The impact of trust on student achievement stems from teachers and administrators working collaboratively and building relationships through supportive environments that foster shared leadership. All of these are found within the dimensions of a professional learning community as described by Hord (1997).

Through the past 20 years, researchers have focused on ways to improve education and raise student achievement. This research examined the three levels of trust described by Tschannen-Moran and Hoy (2000) with professional learning communities and their relationship to academic achievement. While each construct has previously been studied separately, this study suggested that schools with high levels of trust among staff, students, and leaders would also have higher levels of perceived learning communities and that those schools would have higher levels of student achievement.

Purpose

The purpose of this study was to determine if there were relationships between the perceived implementation level of professional learning communities (PLCs), trust in clients, trust in colleagues, trust in the principal, and student achievement scores in Georgia. This chapter includes a summary of the research, conclusions made, a discussion of the findings, implications for practice, recommendations for further research and a concluding statement.

Summary of Methods

Surveys were used to gather data about the perceived level of implementation of PLCs, trust, and student achievement. Five research questions guided this study:

1. To what extent is a school's level of trust related to the perceived implementation level of PLCs;
2. Is there a relationship between a school's level of trust and student achievement;
3. Does a PLCs perceived implementation level vary with student achievement;
4. Do schools with high levels of trust and high perceived implementation levels of PLCs have higher student achievement; and
5. What is the difference between middle and elementary schools when examining the perceived implementation of PLCs, trust, and student achievement?

Survey data were collected from a convenience sample of 59 elementary and middle schools incorporated within three Georgia Regional Educational Service Areas (RESA) districts. Two questionnaires, the School Professional Staff as Learning Community Questionnaire (SPSLCQ) and the Omnibus T-scale, with aggregated demographic data were distributed through a link provided by the Qualtrics™ Research Suite to faculty members. All responses were kept confidential from the 836 respondents who participated in the study. Student achievement data, CRCT scores, and socioeconomic status information, as a percentage of students on free or reduced lunch were obtained from the Georgia Department of Education web site for each school participating in the study.

After surveys were completed, data were aggregated to the school level, descriptive analyses were run along with reliability coefficients. Bivariate correlations were run to test three of the research hypotheses. A stepwise backward regression was used to determine the impact that the independent variables had on the dependent variables for one hypothesis. The last hypothesis was tested using an independent t-test of the means to determine a difference, if any, between the grade-levels of schools.

Discussion of the Findings

The first research question examined in this study was related to professional learning communities and trust. Trust is one of the conditions found in successful PLCs and described by researchers who have investigated professional learning communities (Hord, 1997; Bolam et al., 2005; Vesico, Ross, & Adams, 2008; Hipp & Huffman, 2003). This research question suggests that for PLCs to exist, the relationship must be strong between the two and that the higher the level of trust the higher the level of perceived professional learning communities.

Through a correlational analysis, it was determined that certified staff members perceived the implementation level of professional learning communities and trust in colleagues ($r=.731, p < .01$), trust in principal ($r = .666, p < .01$), and trust in clients (students and parents) ($r = .701, p < .01$) were highly correlated. This result was expected as recent dissertations on academic optimism (Bevel, 2010; Cassity, 2012), enabling school structures and trust (Gray, 2011), as well as earlier research on academic optimism (Goddard et al., 2000; Hoy, Tarter, & Woolfolk, Hoy, 2006) had also found relationships between trust, trust as a subcategory of academic optimism, and student achievement. This result confirms earlier research that trust is a condition of a supportive environment, shared leadership, collaboration, and shared decision making.

Several recent reviews of literature and meta-analyses found significant relationships between professional learning communities and student academic achievement (Vesico, Ross, & Adams, 2008; Lomos et al. 2011a; Lomos et al., 2011b; Arredondo-Rucinski, 2012). Following these recent studies the second research question focused on finding a relationship between professional learning communities and student achievement. Student achievement was measured by the percent of students who met and exceeded standards and by the average score per school.

The average school score is not used for Adequate Yearly Progress, a determining factor in a school's success, but was used because it allows for a better picture of where that school falls within the context of the other schools.

The second research question asked as the school's level of perceived professional learning community (PLCs) increased whether student achievement scores would increase as well. Through a correlational analysis, PLCs showed a very weak and non-significant relationship with both the average score in each school ($r = .166$) and the amount of students who met or exceeded expectations ($r = .181$); however, in the stepwise backward multiple regression analysis between the independent variables and the average test score in each school, PLCs remained in the final model. Professional learning communities in the regression though were negatively associated with the average test score in each school. This finding suggests that PLCs are not significant in improving student achievement, and suggests what Miskel, McDonald, and Bloom (1983) confirmed in their study of school effectiveness, and that teachers may do better in isolation.

This study found, as earlier literature has suggested (Goddard et al., 2001; Forsyth et al., 2011) that trust between certified staff members and colleagues as well as students and parents, was significantly correlated to student achievement. Trust in colleagues resulted in a weak effect to both aspects of measured student achievement (average score in each school, $r = .376$, $p < .05$; percent meets and exceeds the standards, $r = .306$, $p < .05$). Trust between certified staff and clients indicated a moderate relationship between both aspects of student achievement (average score in each school, $r = .570$, $p < .05$; percent meets and exceeds the standards, $r = .513$, $p < .05$). The relationship between trust in the principal and both aspects of student achievement were almost non-existent (average score in each school $r = .066$; percent meets and exceeds, $r =$

.047). This finding was not completely unexpected as this non-relationship was consistent with the research, for example the research of Forsyth, Adams, and Hoy (2011).

The fourth research question posed that student achievement would be higher in schools that had higher levels of trust and perceived implementation levels of PLCs. In measuring student achievement as a percent of students who met and exceeded the standards, only the independent variables of SES, as a percentage of students on free and reduced lunch, and trust in clients remained in model 4 and contributed to a 34% difference in the variance of scores. In measuring student achievement as the average score in each school, SES and trust in clients remained in model 4, however, perceived levels of PLCs also remained. That model accounted for 51% of the variance in average scores in each school.

In both models SES, as a percentage of students who are on free or reduced lunch, was negatively associated with student achievement as found by Coleman (1966); however, trust in clients was positively associated to student achievement in both models. As the percent of students on free or reduced lunch increased the percent of students who meet and exceeded expectations, as well as the average score per school decreased. In both regression models, trust in clients was shown as a positive indicator of student achievement. This suggests that if teachers believe and trust in their students and parents then their scores should increase. This confirms earlier research conducted by Goddard et al. (2001) that faculty trust in clients has a positive impact on student achievement, even when controlling for SES.

The fifth research question asked if there would be a difference between middle schools and elementary schools in levels of trust and the perceived level of implementation of PLCs. According to the independent t-tests, there was a difference between elementary and middle schools in their level of implementation of PLCs ($t(57) = 2.791, p < .01$). The difference when

comparing the means (elementary $M = 3.89$, middle $M = 3.66$), was $.23$, however, it represented a medium effect size $r = .35$. There was also a difference between the two grade levels in the level of trust in the clients (students and parents) ($t(57) = 4.659$, $p < .001$). The difference between the two means ($.608$) was significant with an effect size of $.53$. This was expected as elementary schools are more centralized and work towards the same goals as a staff, while middle schools are more departmentalized (Herriott & Firestone, 1984). There was no difference between middle and elementary schools when examining trust in the principal and trust in colleagues.

Implications for Practice

As a result of public policies for increased accountability and high stakes testing education has become more of a target and schools continue to search for reform models that promote school improvement and greater student achievement. Professional learning communities are one vehicle for school improvement that has shown an impact on school improvement and achievement. In addition they are being advocated by state and national education agencies as vehicles for reform. The structures of shared leadership, shared vision, collaboration, shared practice, and supportive conditions, defined by Hord (1997) appear to lend themselves individually towards school improvement. Some recent studies on the relationships between PLCs and student achievement have shown that there is a positive correlation between the two variables.

Bolam et al. (2005) conducted a study on professional communities and their impact on school outcomes. They found that schools in which the faculty actively participated in the aspects of professional learning communities, higher levels of student performance were. Lomos et al. (2011) concluded from a study of secondary schools that student achievement was higher

when the levels of professional learning communities were in place. Arredondo-Rucinski (2012) also found through her preliminary results of a meta-analysis that PLCs have small significant effects on student performance. These studies represent a small part of the literature that supports forming professional learning communities to promote improvement and gains in academic student achievement.

From my research it appears that the aspects that make up a learning community need to be built on a foundation that supports faculty efforts. This support starts with the leadership in the schools. While this study did not find a significant relationship between trust in the principal and student achievement, trust in the principal was highly correlated to trust in colleagues and trust in clients. The principal sets the foundation of trust within the school by being open and collaborative with staff members. Supportive and shared leadership is one of characteristics of professional learning communities, and according to several researchers (Kruse & Louis, 1993; Leithwood et al. as cited in Supovitz et al., 2010; Wahlstrom & Lewis, 2009) appears to be a necessity in improving instruction. Trust's impact on the schools has been significant in its relationship to student achievement. Recent studies relate its importance of trust to developing school structures that support improvement (Hoy et al., 2006; Byrk & Schneider, 2002; Goddard et al., 2000; Forsyth et al., 2011).

Trust is an important factor in building relationships and in developing bonds that can strengthen the community. Tschannen-Moran and Hoy's (2000) definition of trust emphasizes the idea that without trust, honest conversations about improvement would not occur. Trust's impact on the climate of the school could determine whether or not the structures put in place by professional learning communities could become successful, and therefore needs to be considered by leadership when developing PLCs. Tarter and Hoy (1988) suggested that

principals could establish trust with teachers through holding high expectations and being supportive leaders. Hoy et al. (1992) found that supportive leadership fostered collegial relationships between staff members which allowed for discussion of improved instruction. School leaders that support teachers and create positive climates could develop PLCs. Price (2012) found that schools with positive climates and better relationships had principals who worked with school staff through professional learning to define expectations.

While trust between leaders and teachers is important in creating a climate of openness and collegiality, trust between teachers is also important in producing student outcomes of increased achievement. This study found there to be a weak but significant correlation between achievement and faculty trust in colleagues. Collaboration between faculty members has been identified as a central focus of professional learning communities. Louis and Kruse (1995) and Hord (2008) both argued that collaboration is the foundation of a professional learning community. Kruse and Louis (1993b) suggest that in order for collaboration to exist, school structures must be in place. They described the need for schools to have “(1) time to meet and talk, (2) physical proximity, (3) interdependent teaching roles, (4) communication structures and networks, and (5) teacher empowerment and school autonomy,” to form the foundation for a professional community (Kruse & Louis, 1993a).

From my study along with the structures of the learning community faculty should reflect on their practices. This process can be difficult without the foundation of trust between faculty members (Kruse & Louis, 1993b; Hord, 2008). Through collaboration and shared personal practice schools can however, begin to improve. Hord (2008) asserts that faculty must be cautious when they meet and that there needs to be a direction. She suggests that answering the following three questions can help drive professional learning and growth: “What are you

learning? Why are you learning that? How are you learning it?”(Hord, 2008, p. 13). Focusing on those questions should help teachers and schools direct instruction towards meeting the goals of the school.

Darling-Hammond (1996a) described the need for shared personal practice and shared decision making. She recommended that shared assessments and curriculum be used to guide conversations about improvement and learning. She suggested that shared decision making involves all of the stakeholders when working towards improvement. According to her, school leaders and faculty members should participate in school-based and classroom-based decisions. It may be helpful for faculty to move towards discussing trends in the classroom that impact learning and begin developing assessments that guide instruction. Hipp and Huffman (2005) have suggested that teachers be given the opportunity for peer observation, and time to discuss what was observed for improved practice. Perhaps principals could benefit by setting aside time for teachers to view others teaching and by providing protocols for teachers to follow after their observations, discussing items for improvement.

This study has shown me that building professional learning communities requires leaders being open and willing to collaborate with teachers, and to provide opportunities for all stakeholders to help in guiding improvement. Being open can lead to increased trust. Creating and sustaining trust must include examining all of the relationships that exist not only within the school but externally (Forsyth et al., 2011). Once the beginning levels of trust are created, my study would support that leaders can begin creating a professional learning community through collaboration, shared practice, and shared beliefs.

Recommendations for Further Research

Professional learning communities appear to be a viable vehicle for school improvement. While the hypotheses tested in this study in relation to student achievement were not confirmed, further research is needed to test the implementation of the professional learning community model and its relationship to student achievement. Recent reviews of literature suggest their positive impact on student achievement; however, more studies on the long-term effects of PLCs on achievement are needed.

Researchers may want to focus on schools that have established PLCs and schools that are establishing PLCs and to track the schools efforts over a 3 - 5 year time span to determine if a link between PLCs and achievement exists. A district-wide approach to the research would be beneficial to see whether growth in a variety of schools with different backgrounds of students exists. A district approach may allow districts to guide and facilitate professional learning in a similar manner at each school. While schools are different, and the structures vary widely, a district approach for researchers presents opportunities to gather information on what works, and what problems schools may encounter along the way.

Research is needed on the professional learning community's involvement in other aspects of a school's success. School data on behavior, graduation rate, and nationally normalized tests should also be considered when examining improvement efforts. While many studies focus on achievement data for a single school year, examining long-term data and tracking classes of students should be examined for the long-term effects of PLCs on overall school improvement.

Research could also add to the literature on what builds and sustains trust within schools. While there have been studies dedicated to trust's role in organizational improvement, more

research needs to be done on what types of roles leaders should take in developing the levels of trust within each school and what needs to be done to rebuild cultures and climates in schools that lack trust. Trust serves as a foundation for improvement. This research found significance in the relationships between PLCs and faculty trust in colleagues, clients, and the principal, as well as a relationship between faculty trust in colleagues, faculty trust in clients, and student achievement. Faculty trust in the principal and student achievement did not show a direct significant relationship in this study; however, this has been found in other research on trust.

The research on PLCs, academic optimism, and enabling school structures are just some of the topics that examine trust's role in student achievement and school improvement; and while the relationships have been shown to exist, more research needs to be performed on building and sustaining those relationships.

Summary

This chapter provided an overview of this research on professional learning communities and trust, a summary of the methods, discussion of the findings, answers to the research questions, implications for practice, and recommendations for further research. This study focused on determining if there was a relationship between professional learning communities and trust and if their existence at higher levels in schools would result in improving student learning. The researcher found that trust among colleagues, in clients, and in leadership were related to higher perceived levels of PLCs. Trust is a foundational aspect for schools to improve and professional communities can be a vehicle for driving that improvement. While this study did not find a significant relationship between all of the variables and their relationship to student achievement, some have an impact on improvement. Schools that wish to improve student achievement may benefit from first looking within and build trust among all stakeholders. Once

trust is established leaders may decide to construct professional learning communities through collaboration, supportive structures and environment, and shared values and goals, leading the way towards academic improvement.

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APPENDIX A

SCHOOL PROFESSIONAL STAFF AS
LEARNING COMMUNITY QUESTIONNAIRE (SPSLCQ)

School Professional Staff as Learning Community Questionnaire

Directions: This questionnaire concerns your perceptions about your school staff as a learning organization. There are no right or wrong responses. Please consider where you believe your school is in its development of each of the five numbered descriptors shown in bold-faced type on the left. Each sub-item has a five-point scale. On each scale, circle the number that best represents the degree to which you feel your school has developed.

Date: _____

Name: _____

School: _____

1. School administrators participate democratically with teachers sharing power, authority, and decision making.

- | | | | | | |
|------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|---|-----------------------------------------------------------------------------------------|--------------------------------------------------------------------------------------------------------------------|---|
| | 5 | 4 | 3 | 2 | 1 |
| 1a. | Although there are some legal and fiscal decisions required of the principal, school administrators consistently involve the staff in discussing and making decisions about school issues. | | Administrators invite advice and counsel from staff and then make decisions themselves. | Administrators never share information with the staff nor provide opportunities to be involved in decision making. | |
| 1b. | Administrators involve the entire staff. | | Administrators involve a small committee, council, or team of staff. | Administrators do not involve any staff. | |

2. The staff shares visions for school improvement that have an undeviating focus on student learning, and these visions are consistently referenced in the staff's work.

- | | | | | | |
|------------|-----------------------------------------------------------------------------------------------------------|---|--------------------------------------------------------------------------------------------------|--------------------------------------------------------------------------------------------|---|
| | 5 | 4 | 3 | 2 | 1 |
| 2a. | Visions for improvement are discussed by the entire staff such that consensus and a shared vision result. | | Visions for improvement are not thoroughly explored; some staff members agree and others do not. | Visions for improvement held by the staff members are widely divergent. | |
| 2b. | Visions for improvement are always focused on students, teaching, and learning. | | Visions for improvement are sometimes focused on students, teaching, and learning. | Visions for improvement do not target students, teaching, and learning. | |
| 2c. | Visions for improvement target high-quality learning experiences for all students. | | Visions for improvement address quality learning experiences in terms of students' abilities. | Visions for improvement do not include concerns about the quality of learning experiences. | |

3. The staff's collective learning and application of the learnings (taking action) create high intellectual learning tasks and solutions to address student needs.	3a.	5 _____ 4 _____ 3 _____ 2 _____ 1	The entire staff meet to discuss issues, share information, and learn with and from one another.	Subgroups of the staff meet to discuss issues, share information, and learn with and from one another.	Individuals randomly discuss issues, share information, and learn with and from one another.
	3b.	5 _____ 4 _____ 3 _____ 2 _____ 1	The staff meet regularly and frequently on substantive student-centered educational issues.	The staff meet occasionally on substantive student-centered educational issues.	The staff never meet to consider substantive educational issues.
	3c.	5 _____ 4 _____ 3 _____ 2 _____ 1	The staff discuss the quality of their teaching and students' learning.	The staff does not often discuss their instructional practices nor its influence on student learning.	The staff basically discuss non-teaching and non-learning issues.
	3d.	5 _____ 4 _____ 3 _____ 2 _____ 1	The staff, based on their learnings, make and implement plans that address students' needs, more effective teaching, and more successful student learning.	The staff occasionally act on their learnings and make and implement plans to improve teaching and learning.	The staff do not act on their learnings.
	3e.	5 _____ 4 _____ 3 _____ 2 _____ 1	The staff debrief and assess the impact of their actions and make revisions.	The staff infrequently assess their actions and seldom make revisions based on the results.	The staff do not assess their work.
	<hr style="border-top: 1px dashed #000;"/>				
4. Peers review and give feedback based on observing one another's classroom behaviors in order to increase individual and organizational capacity.	4a.	5 _____ 4 _____ 3 _____ 2 _____ 1	Staff members regularly and frequently visit and observe one another's classroom teaching.	Staff members occasionally visit and observe one another's teaching.	Staff members never visit their peers' classrooms.
	4b.	5 _____ 4 _____ 3 _____ 2 _____ 1	Staff members provide feedback to one another about teaching and learning based on their classroom observations.	Staff members discuss non-teaching issues after classroom observations.	Staff members do not interact after classroom observations.

5. School conditions and capacities support the staff's arrangement as a professional learning organization.

5a.	5	4	3	2	1
	Time is arranged and committed for whole staff interactions.		Time is arranged but frequently the staff fail to meet.		Staff cannot arrange time for interacting.
5b.	5	4	3	2	1
	The size, structure, and arrangements of the school facilitate staff proximity and interaction.		Considering the size, structure, and arrangements of the school, the staff are working to maximize interaction.		The staff take no action to manage the facility and personnel for interaction.
5c.	5	4	3	2	1
	A variety of processes and procedures are used to encourage staff communication.		A single communication method exists and is sometimes used to share information.		Communication devices are not given attention.
5d.	5	4	3	2	1
	Trust and openness characterize all of the staff members.		Some of the staff members are trusting and open.		Trust and openness do not exist among the staff members.
5e.	5	4	3	2	1
	Caring, collaborative, and productive relationships exist among all staff members.		Caring and collaboration are inconsistently demonstrated among the staff members.		Staff members are isolated and work alone at their task.

Hord, S. M. (1996). *School professional staff as learning community questionnaire*. Austin, TX: Southwest Educational Development Laboratory.

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APPENDIX B
OMNIBUS T-SCALE

Omnibus T-Scale

Directions: Please indicate your level of agreement with each of the following statements about your school from **strongly disagree** to **strongly agree**. Your answers are confidential.

	Strongly Disagree	Disagree	Somewhat Disagree	Somewhat Agree	Agree	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 principal in this school typically acts in the best interests of teachers.	1	2	3	4	5	6
10. Students in this school care about each other.	1	2	3	4	5	6
11. The principal of this school does not show concern for the teachers.	1	2	3	4	5	6
12. Even in difficult situations, teachers in this school can depend on each other.	1	2	3	4	5	6
13. Teachers in this school do their jobs well.	1	2	3	4	5	6
14. Parents in this school are reliable in their commitments.	1	2	3	4	5	6
15. Teachers in this school can rely on the principal.	1	2	3	4	5	6
16. Teachers in this school have faith in the integrity of their colleagues.	1	2	3	4	5	6
17. Students in this school can be counted on to do their work.	1	2	3	4	5	6
18. The principal in this school is competent in doing his or her job.	1	2	3	4	5	6
19. The teachers in this school are open with each other.	1	2	3	4	5	6
20. Teachers can count on parental support.	1	2	3	4	5	6
21. When teachers in this school tell you something, you can believe it.	1	2	3	4	5	6
22. Teachers here believe students are competent learners.	1	2	3	4	5	6
23. The principal doesn't tell teachers what is really going on.	1	2	3	4	5	6
24. Teachers think that most of the parents do a good job.	1	2	3	4	5	6
25. Teachers can believe what parents tell them.	1	2	3	4	5	6
26. Students here are secretive.	1	2	3	4	5	6

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APPENDIX C

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Thank you, again, for your interest in SEDL's **School Professional Staff as Learning Community Questionnaire**. If you have questions about SEDL's License Agreement, please contact me at 800-476-6861, ext. 6548 or 512-391-6548, or by e-mail at nancy.reynolds@sedl.org.

Sincerely,

Nancy Reynolds

November 17, 2011
Date signed

Agreed and accepted:

Signature

Printed Name

M

11-16-11
Date signed

APPENDIX D
DEMOGRAPHIC DATA

Thank you for taking time to complete these surveys. Please provide some demographic information about yourself. Please select your responses for each question.

In what school do you currently teach?

What grade(s) do you currently teach?

How many years have you been at your current school?

How many years have you been in education?

What subjects do you teach?

What is your current position (Administrator, Counselor, Teacher)?

APPENDIX E
LETTER TO SYSTEMS

Date:
[Recipient Name]
[Title]
[X County Schools]
[Street Address]
[City, ST Zip Code]

Dear, [Recipient Name (Superintendent)]

As a follow up to our previous communication, I am writing to ask for your permission to include the schools in your county in a study of Professional Learning Communities and Trust. This study is part of my Ed.D. dissertation which is being supervised by Dr. Daisy Arredondo-Rucinski at the University of Alabama. The purpose of this study is to determine the relationship between professional learning community (PLC) characteristics and trust and the impact that each has on student academic achievement in 5th and 8th grade mathematics.

The survey will be given to all certified staff. Each staff member will receive an e-mail with a link the survey. Teachers can choose to decline to participate at any time. I anticipate the survey taking 15-20 minutes. I will be using CRCT data to examine the impact that PLC's and trust have on student academic achievement.

All responses will be kept confidential and school leaders will be given the results from each school, if requested, for their continued professional learning.

Thank you for your time and consideration.

Sincerely

Herbert A Betts, III.
cc. Superintendent

APPENDIX F
LETTER TO TEACHERS

Dear Study Participant (Administrator, Certified Staff),

My name is Herbert Betts and I am currently an assistant principal at Madras Middle School. I am completing my Ed.D. in Instructional Leadership from the University of Alabama. I need your assistance in completing the survey, linked below, for my research. I have given a brief description of my research below. The survey results will be kept in confidence at all times. I know that your time is very important and I appreciate your effort.

Please complete the survey by clicking the link below. The survey should take about 15 minutes of your time. By completing the survey online you are consenting to participate in this study, you may withdraw your consent at any time. There is little risk in taking this survey as it is anonymous. If you have any questions or concerns, please feel free to call or email me at any time. Thank you again for participating in this study, your expertise and time will provide valuable insight on this subject matter.

Sincerely,

Herbert A. Betts III

APPENDIX G
INSTITUTIONAL REVIEW BOARD APPROVAL

March 1, 2012

Office for Research
Institutional Review Board for the
Protection of Human Subjects

THE UNIVERSITY OF
ALABAMA
R E S E A R C H

Herbert Betts
College of Education
The University of Alabama
Box 870302

Re: IRB # 12-OR-083, "Relationships among Professional Learning
Communities, Trust, and their Perceived Effects on Student Achievement
in Georgia"

Dear Mr. Betts:

The University of Alabama Institutional Review Board has granted
approval for your proposed research.

Your application has been given expedited approval according to 45 CFR
part 46. You have also been granted the requested waiver of written
documentation of informed consent. Approval has been given under
expedited review category 7 as outlined below:

*(7) Research on individual or group characteristics or behavior
(including, but not limited to, research on perception, cognition,
motivation, identity, language, communication, cultural beliefs or
practices, and social behavior) or research employing survey, interview,
oral history, focus group, program evaluation, human factors evaluation,
or quality assurance methodologies.*

Your application will expire on February 28, 2013. If the study continues
beyond that date, you must complete the IRB Renewal Application. If you
modify the application, please complete the Modification of an Approved
Protocol form. Changes in this study cannot be initiated without IRB
approval, except when necessary to eliminate apparent immediate hazards
to participants. When the study closes, please complete the Request for
Study Closure form.

Should you need to submit any further correspondence regarding this
application, please include the assigned IRB application number.

Good luck with your research.

Sincerely,



358 Rose Administration Building
Box 870127
Tuscaloosa, Alabama 35487-0127
(205) 348-8461
FAX (205) 348-7189
TOLL FREE (877) 820-3066

Carpentato T. Myles, MSM, CIM
Director & Research Compliance Officer
Office for Research Compliance
The University of Alabama

APPENDIX H
INFORMED CONSENT

THE UNIVERSITY OF ALABAMA
HUMAN RESEARCH PROTECTIONS PROGRAM

Herbert A. Betts III, Principal Investigator from the University of Alabama, is conducting a study called Relationships among Professional Learning Communities, Trust, and their perceived effects on student achievement in Georgia. He wishes to find out if there is a link between professional learning communities and trust, and if they impact student academic achievement.

Taking part in this study involves completing a web survey, via an e-mail link, that will take about 15 minutes to complete. This survey contains questions about Professional Learning Communities, Trust, and basic demographic data.

We will protect your confidentiality by not asking for or recording any personal identification or recording of your IP address. Only the principal investigator, Herbert Betts have access to the data. The data are password protected. Only summarized data will be presented at meetings or in publications.

There will be no direct benefits to you. The findings will be useful to academic researchers and school system personnel for improving academic achievement.

The chief risk is that some of the questions may make you uncomfortable. You may skip any questions you do not want to answer.

If you have questions about this study, please contact Herbert A. Betts III at 770-309-6466 or by email. If you have questions about your rights as a research participant please contact Ms. Tanta Myles (the University Compliance Officer) at (205) 348-8461 or toll-free at 1877-820-3066. If you have complaints or concerns about this study, file them through the UA IRB outreach website at http://osp.ua.edu/site/PRCO_Welcome.html. Also, if you participate, you are encouraged to complete the short Survey for Research Participants online at this website. This helps UA improve its protection of human research participants.

YOUR PARTICIPATION IS COMPLETELY VOLUNTARY. You are free not to participate or stop participating any time before you submit your answers.

If you understand the statements above, are at least 19 years old, and freely consent to be in this study, click on the I AGREE button to begin.