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The Correlation Between Professional Learning Communities & Collective Efficacy & the Resulting Impact on Student Growth Data

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THE CORRELATION BETWEEN PROFESSIONAL LEARNING COMMUNITIES
& COLLECTIVE EFFICACY & THE RESULTING IMPACT
ON STUDENT GROWTH DATA

A Dissertation
Presented to
the Faculty of the Morgridge College of Education
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Doctor of Philosophy

by
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Abstract

The Trends in International Mathematics and Science Study in 2007 conducted by the National Center of Education Statistics revealed that the students in United States are scoring lower than several other countries in the areas of science and mathematics. Students in other countries are able to compete globally for employment in professional occupations that were previously occupied by graduates from the United States. Therefore, there is a sense of urgency to increase student achievement throughout the United States. No Child Left Behind (2001) mandates that public schools develop accountability systems to ensure that all students achieve at the proficient or advance levels. It goes further to mandate that school systems address achievement gaps between sub-groups. Researchers have investigated the characteristics of effective schools in search of the solutions to address our student achievement gaps and achievement for all students. Collective efficacy, the perception that a school has the capability to attain their goals, has been found to increase student achievement. Likewise, research on effective learning organizations has also been found to increase student achievement. There has been much research on each construct individually, however research on the relationships between these two constructs and the related impact on student achievement is beginning to emerge.
This study investigates the correlation between teachers’ perception of collective efficacy and their school as an effective professional learning community and delving deeper to find a resulting relationship to student growth data. Fourth and fifth grade teachers from a large suburban school district of 50,000 students in the Denver Metro area participated in this study to assess whether there was a correlation between their level of perceived collective efficacy and their perception of their school as a professional learning community. Roger Goddard’s Collective Efficacy: Short Form questionnaire was used to assess collective efficacy. Shirley Hord’s School Professional Staff as Learning Community questionnaire was used to assess perceptions of learning communities. Data from the Colorado Student Assessment Program of Spring 2009, student growth data specifically, was used to investigate correlations between student achievement to teachers’ perceptions of collective efficacy and learning communities.

Analysis revealed that there is a positive correlation between collective efficacy and schools as professional learning communities. The correlation was statistically significant at $r=476\ p=.000$. Hord’s questionnaire contains five dimensions of learning communities and four out of the five were found to be positively correlated to collective efficacy and were statistically significant. However, the findings indicated that there was not a relationship between student growth data and collective efficacy or professional learning communities which was inconsistent with other studies.
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Chapter 1: Introduction

*Our progress as a nation can be no swifter than our progress in education. The human mind is our fundamental resource.* —John F. Kennedy

Public education has a long history in the United States, beginning with legislation passed in 1837 (Sadovnik, Cookson, & Semel, 2006) that provided funds to open "common schools" with a standardized curriculum. It was a time when teachers were said to be the heart of the American educational system (Kliebard, 1987). Since that time, public education has received mixed reviews regarding its effectiveness to meet the demands of our society and to keep our country competitive in global markets. Perspectives on the effectiveness of public education may vary, but a common understanding among all is that education continues to be a crucial element in the success and progress of our nation.

Attempts to create a sense of urgency about the state of our educational systems and its impact on the well being of the United States are demonstrated by volumes of legislation written to ignite educational reform. Often these attempts are in response to perceived societal needs. For example, the launching of Sputnik by the Soviet Union stimulated the National Defense Education Act (U.S. Department of Education, 1958) that focused on increasing achievement in the areas of mathematics, science, and foreign language in hopes of keeping the United States globally competitive. The Civil Rights movement in the 1960s spurred the Elementary and Secondary Education Act of
1965 (U.S. Department of Education) that focused on equal access to educational opportunities for the disadvantaged. Through the years, this act has been renewed to reflect society and its perceived needs.

The Elementary and Secondary Education Act was renewed with the passing of the No Child Left Behind Act of 2001 (NCLB; U.S. Department of Education, 2002) with the purpose of “closing the achievement gap between high- and low-performing children, especially the achievement gaps between minority and nonminority students, and between disadvantaged children and their more advantaged peers” (p. 2). Closing the achievement gap between sub-groups is a primary focus of most district and school improvement plans. State standards and performance-based accountability systems have been developed as accountability measures to address the mandates of NCLB. Educators are charged with the responsibility of ensuring that all students are achieving at high levels. NCLB attempts to move us forward as we address the needs of society during the current era of the Information Age, which has awakened us to the reality that the United States no longer dominates global markets and may lag behind other countries in the area of mathematics and science.

In 2002, the National Center of Education Statistics (NCES) was mandated to collect data and report on the student achievement in the areas of mathematics, science, and reading as compared to other countries. NCES works with international organizations to plan, develop, and implement reliable and meaningful measures across countries (NCES, 2010). The Trends in International Mathematics and Science Study (TIMSS; U.S. Department of Education, 2007) is an assessment conducted every four years to assess fourth and eighth graders in mathematics and science.
Results of the 2007 TIMSS (U.S. Department of Education) showed that U.S. fourth graders’ average scores were 65% (23 out of 35) higher than the average mathematics scores of other countries who participated. Countries outperforming the United States were in Asia and Europe. U.S. eighth graders’ average mathematics scores were 78% (37 out of 47) higher than other countries who participated. Countries outperforming the United States were in Asia (NCES, 2010).

The 2007 TIMSS (U.S. Department of Education) also showed that U.S. fourth graders’ average scores were 71% (25 out of 35) higher than the average science scores of other countries who participated. Countries outperforming the U.S. were in Asia. U.S. eighth graders’ average science scores were 74% (35 out of 47) higher than other countries who participated. Countries outperforming the United States were in Asia and Europe (NCES, 2010).

Although the TIMSS (U.S. Department of Education) is only one assessment used to assess and compare educational performance internationally, it reveals that students in the United States appear to lag behind their peers on international assessments of mathematics and science.

Economically speaking, lagging behind other countries is not something that the United States can afford to do. As Benjamin Franklin once said, “The only thing more expensive than education is ignorance.” Our current era of globalization reflects a society that has the ability to communicate, exchange information, and work from any location in the world. According to Thomas Friedman (2005), our society has changed “while we were sleeping” (p. 8). Outsourcing work to other countries that produce the same products or services for less has become a common business practice.
Technological advances have provided companies the opportunity to hire engineers, accountants, and computing services across the world for a much lower cost than in the United States. Third World countries now successfully compete for employment that was formerly not available to them, thus limiting these opportunities to workers within the United States.

Students today need an education that will prepare them for occupations requiring higher level thinking, creativity, collaboration, and mastery of the basics: reading, writing, and mathematics (Freidman, 2005; Wagner, 2008).

The premise of the information era: Knowledge is the oil of the information economy. Tacit knowledge is the oil of the information economy. Those who know how to surface or create tacit knowledge will possess inexhaustible supplies of intellectual fuel for the information economy. (Kikowski & Kikowski, 2004)

Creativity and higher level thinking are the needed capital of the current generation. Intellectual fuel is a necessary survival skill that public education is now called upon to develop in all students. No longer will a high school diploma be sufficient for productive participation in our society. Succeeding competitively in today’s global economy has created a sense of urgency as society turns toward our public educational system for answers.

Public education in the United States is in search of reform measures to ensure that all students achieve at high levels and prepare them for future opportunities. Research is quite dense on the topic of student achievement. Studies that focus on effective schools, professional learning communities, and efficacy have seen promising results.
A mature body of research exists on the topic of effective schools. For decades, researchers have explored and developed a set of characteristics common among schools that are effective with all students. Educators around the world have used them as a catalyst for school improvement. Common characteristics that surfaced through numerous studies include

- Strong instructional leadership from the principal
- Pervasive and broadly understood instructional focus
- Safe and orderly school learning environment
- High expectations for all students
- Use of student achievement test data for evaluating program and school success. (Teddle & Reynolds, 2000, p. 10)

Each of these characteristic has been researched in depth as a construct in and of themselves. The principles of effective schools research (ESR; Teddle & Reynolds, 2000) have been applied with success throughout the United States for a number of years in some schools and districts but not in others.

DuFour and Eaker (1998) suggest the School as a Professional Learning Community Model as an answer to successful school reform measures and continued, significant school improvement. Studies have linked enhanced student achievement to the concept of professional learning communities (PLC) within the public schools (DuFour & Eaker, 1998; Hord & Sommers, 2008.). Covey (1996) stated that “only the organizations that have a passion for learning will have an enduring influence” (p. 149). Schools that implement the model learn together and share a common mission, vision, and values; have shared and supportive leadership; develop supportive structures; share
personal practice; and have a persistent day-to-day approach for continuous improvement (DuFour & Eaker, 1998; Hord & Sommers, 2008.) The PLC model has also been implemented in schools throughout the United States with varying degrees of success.

Another field of research proving to impact student achievement comes from Bandura (1986) and his social cognitive theory. The belief that all teachers have the conjoint capacity to accomplish their goals is called collective efficacy. Research has shown that schools that have a high level of collective efficacy also have higher levels of student achievement (Goddard, Hoy, & Hoy, 2000).

Collective efficacy and the professional learning community model positively impact student achievement; elements of both can be found in the characteristics of effective schools as shown through ESR. If a school implements the concept of a PLC, will it also have high levels of collective efficacy? Will this in turn increase student achievement for all students?

**Problem Statement**

The purpose of this study was to investigate the correlation between teachers’ perceived collective efficacy and teachers’ perception of the effectiveness of professional learning organizations within their school. Furthermore, this study investigated whether there was a correlation of these with student achievement.

NCLB-mandated, state standardized tests are a means of accountability. Schools that implement PLCs have improved student achievement (DuFour & Eaker, 1998; Hord & Sommers, 2008). The best practices within schools include the following characteristics that are positively linked to higher levels of student achievement:

- shared beliefs, values and vision
• shared and supportive leadership
• collective learning and its application
• supportive conditions
• shared personal practice (Hord & Sommers, 2008).

Likewise, higher levels of collective efficacy of faculty who can accomplish their collective goals have been positively associated with increased student achievement (Bandura, 1997; Goddard, Hoy, & Woolfolk-Hoy, 2004).

Research Questions

Examining the connection between collective efficacy and effective learning organizations provided an insight into leadership practices that support increased student achievement for all students. Two questions guided the researcher in the process of conducting this study.

1. Does the presence of characteristics of an effective learning organization increase the level of collective efficacy within a school?

2. Is there a relationship between effective learning organization characteristics, collective efficacy and student achievement?

Significance of Study

Accountability measures mandated by NCLB as well as the current global economic climate have increased pressure on public schools to reform and refine practices. Characteristics of effective schools include properties of collective efficacy and organizational learning structures. Research has linked collective efficacy to increased student achievement (Bandura, 1997; Goddard, 2001; Hoy, Sweetland, & Smith, 2002). Effective learning organizations have also been shown to improve student
learning. Understanding how these two constructs were correlated and how this impacted student achievement contributed to the knowledge base for both constructs.

Colorado state assessments mandated by NCLB include the Colorado Student Assessment Program (CSAP). Results using levels of unsatisfactory through advanced are reported to stakeholders (students, parents, teachers, administrators, and policy makers) by level of academic achievement for individual students as well as for specific schools and school districts. HB 04-1433 directed the Colorado Department of Education (CDE; 2008) to develop and disseminate longitudinal growth data at the individual student level. Dr. Daminan Betebenner (2007) from the National Center for the Improvement of Educational Assessment worked with the CDE to refine the Colorado growth model. This study investigated the correlation between collective efficacy and learning organizations and the resulting impact the correlation had on student achievement measured by CSAP using the Colorado growth model. Other than research conducted by Betebenner, little research has been conducted on the Colorado growth model. This study contributed to that knowledge base.
Chapter 2: Literature Review

Introduction

What impact does the relationship between collective efficacy beliefs and learning organizations have on teacher effectiveness and student achievement? This section reviews the literature for the following constructs--social cognitive theory, collective efficacy, learning organizations, and effective schools research--as a means of exploring and building background knowledge for this study.

Social Cognitive Theory

The construct of collective efficacy was developed by Albert Bandura (1986) through his development of social cognitive theory (SCT) in the early 1970s. Since that time, decades of research has explored the construct of efficacy with regard to educational impact. An understanding of SCT is critical to grasping and understanding of the concept of collective efficacy and is described in this section. Learning occurs due to the interrelatedness of an individual’s experiences, cognition, and environment. Bandura stated, “Human functioning is explained in terms of a model of triadic reciprocality in which behavior, cognitive and other personal factors, and environmental events all operate as interacting determinants of each other” (p. 18.) SCT supports the idea that human functioning is not “inner forces or shaped and controlled by external stimuli” but is defined in terms of basic capabilities and along with triadic reciprocity (Bandura, 1986, p. 18).
Bandura (1986) explains that causes of human behavior include individual experiences, cognition, personal factors, and the environment. He further explains that these three causes “operate interactively as determinants of each other” (p. 23) by creating triadic reciprocity. Each determinant interacts mutually with the other, resulting in human actions. The directionality of determinants is dependent upon various situations, individuals, and activities as indicated in Figure 1. Neither factor predominates over the other nor do they progress in a specific order.

Figure 1. Triadic reciprocity.

According to social cognitive theory, the basic capabilities that characterize human nature are symbolizing capability, forethought capability, vicarious capability, self-regulatory capability, and self-reflecting capability. Each of the capabilities is explained here.

Symbolizing capability is the ability to interpret and transform experiences and use them as internal models for future courses of action. Symbols empower people “to give meaning, form, and continuance to experiences they have lived through” (Bandura, 1986, p. 18). Retrieving these experiences and symbols can allow individuals to build on current knowledge and create a new course of action.

Forethought capability involves anticipating future consequences based on possible outcomes, which in turn guide a person’s intentional and purposive actions.
Forethought is rooted in symbolic activity (Bandura, 1986). Images of a desirable future serve as a catalyst for present behaviors needed for the future outcome to become a realization. Goal setting is an example of forethought. A person evaluates possible outcomes, sets goals, and then plans a course of action for a desired outcome. Likewise, a person may predict an undesirable outcome and then set a new path to avoid a negative result. “Cognized futures thus become temporally antecedents to actions” (Bandura, 1986, p. 19).

Vicarious capability refers to the human ability to learn through observation and model from the experiences of those who came before us; it empowers individuals to move forward without the need of trial and error. For example, learning to drive a car is done first through observation and instruction based on prior experiences of others. Through vicarious learning, drivers learn to avoid traffic accidents without having to directly experience the event themselves. Speech is another example of observational learning. It is acquired by children as they observe and then mimic linguistic models in their environment. Observational learning is a key component of SCT where individual’s knowledge is acquired through observing others in social contexts. As humans observe patterns of behavior within cultures and social contexts, it allows for generalization of social norms of behavior. These observations shape our decisions and behaviors based on perceived outcomes (Bandura, 1986).

Another element of social cognitive theory that describes human nature is the self-regulatory capability. Self-regulatory capability explains a person’s ability to regulate their actions based on an internal set of standards. Bandura (1986) stated, “After personal
standards have been adopted, discrepancies between a performance and the standard against which it is measured activate evaluative self-reactions that serve to influence subsequent behaviors” (p. 20). Self-regulatory capability serves as a means of internal motivation for behavior; hence, humans influence their own actions. Discrepancy between current states and desired states has also been termed generative learning (Argyris & Schon, 1974; Senge, 1990) at the individual and organizational levels.

Finally, self-reflective capability describes a person’s capacity to reflect on their behaviors, experiences, and thought processes, and then take action. The process of reflection and analysis of one’s thinking can either confirm action and/or thoughts or be the catalyst for change. “Among the types of thoughts that affect action, none is more central or pervasive than people’s judgments of their capabilities” (Bandura, 1986, p. 21). These self judgments impact how much effort one puts toward activities or the level of perseverance when faced with new or difficult challenges. These judgments are based on an individual’s perception of efficacy for the given situation or action.

**Personal agency and self-efficacy.** There are three kinds of human agency: personal, proxy, and collective (Bandura, 1995). Here, the term agency means “to act.” In the realm of education, personal agency and collective agency have been researched to determine applicability to student achievement. Individuals act independently (personal agency) and interdependently (collective agency). Proxy agency refers to individuals who do not have direct control over institutions or social conditions that affect their lives; however, it has not been researched for applicability in an educational setting. Humans eagerly seek avenues to gain control over their lives. The perceived outcome serves as an
enticement to act. Thus, they take action to gain that control. Personal agency influences how a person thinks, acts, feels, and their level of motivation (Bandura, 1995).

Personal efficacy is defined as the “beliefs in one’s capabilities to organize and execute courses of action required to produce given attainments” (Goddard & Goddard, 2001, p. 1). Personal efficacy determines how an individual responds to situations based on his or her perception of their own capability to act and achieve expected outcomes. Bandura (1995, cited by Artino, 2006) explains personal efficacy as follows:

People make casual contributions to their own psychosocial functioning through mechanisms of personal agency. Among the mechanisms of agency, none is more central or pervasive than beliefs of personal efficacy. Unless people believe they can produce desired effects by their actions, they have little incentive to act. Efficacy belief, therefore, is a major basis of action. People guide their lives by their beliefs of personal efficacy. (p. 2)

Personal efficacy, also known as self-efficacy, has been studied for three decades. Studies have linked self-efficacy to success in sports, coaching, health industries, and business (Bandura, 1995; Tschannen-Moran, Woolfolk-Hoy, & Hoy, 1998). Educational researchers have studied the construct of self-efficacy to determine if teachers’ perceptions of their capability to impact student learning is related to student achievement. Teachers’ perceptions of their capabilities may not match the needed skills or cognitive abilities to attain their goals. Yet, teachers’ efficacy will contribute to the actions taken, effort, perseverance, and resilience to adversity, stress, and level of accomplishment realized (Bandura, 1997).

**Teacher self-efficacy and student achievement.** Teacher efficacy is defined by Tschannen-Moran and Woolfolk-Hoy (2001, cited by Henson, 2001) as a teacher’s “judgment of his or her capability to bring about desired outcomes of student engagement
and learning, even among those students who may be difficult or unmotivated” (p. 4). Educational researchers (Ashton & Webb, 1986; Caprarra, Babaranelli, Steca, & Malone, 2006; Dellenger, Bobbett, Olivier, & Ellett, 2008; Tschannen-Moran & McMaster, 2009; Tschannen-Moran & Woolfolk-Hoy, 2001, 2007) have shown that teachers with high levels of teacher efficacy—the belief about their own capability to perform teaching tasks within their classroom—have positive impacts on student achievement.

In examining the cumulative impact, Ashton and Webb (1986) report teachers’ beliefs concerning their instructional efficacy predict students’ levels of academic achievement over the course of the academic year regardless of their entering ability. Teachers with high teacher-efficacy support students with intrinsic interests, student-centered classrooms, and learning environments that are conducive to learning (Bandura, 1995; Tschannen-Moran & McMaster, 2009; Woolfolk & Hoy, 1990). Teachers with strong perception of efficacy (a) spend more time planning and organizing their rooms for learning, (b) are open to new ideas and willing to experiment with new methods to meet the needs of their students, (c) invest in teaching, and (d) set goals with high aspirations (Tschannen-Moran & Woolfolk-Hoy, 2001). “Teachers with a strong sense of efficacy tend to have classroom climates that are warm and supportive to student needs” (Ashton & Webb, 1986, p. 144). These teachers are less critical of students when they make errors (Ashton & Webb, 1986). They operate on the belief that students are teachable when they exert extra effort and provide appropriate techniques. They devote more class time to instructional activities and provide guidance and praise to students who need it (Bandura, 1997). Conversely, teachers who have low levels of teaching
efficacy may put for less effort toward students who they consider difficult to teach (Bandura, 1997; Tschannen-Moran & Woolfolk-Hoy, 2007). Teachers with low efficacy spend more time on non-academic pastimes, give up on students and criticize them for failure (Bandura, 1997).

According to social cognitive theory, teachers who do not expect to be successful with certain students are likely to put forth less effort in preparation and delivery of instruction, and give up easily at the first sign of difficulty, even if they actually know of strategies that could assist these students if applied. Self-efficacy beliefs can therefore become self-fulfilling prophecies. (Tschannen-Moran & Woolfolk-Hoy, 2007, p. 945)

Studies have also shown that teacher self-efficacy is task or domain specific. For example, a teacher’s level of efficacy teaching mathematics may be different than his or her level of efficacy teaching writing (Ashton & Webb, 1986; Bandura, 1997; Caprarra et al., 2006; Deemer & Minke, 1999; Tschannen-Moran & Woolfolk-Hoy, 2001, 2007). Efficacy levels have been found to impact teachers’ satisfaction with the teaching profession where teachers with higher levels of efficacy find more satisfaction in their jobs (Ashton & Webb, 1986; Bandura, 1997; Caprarra et al., 2006; Coladarci, 1992; Tschannen-Moran & Woolfolk-Hoy, 2001, 2007). “If teachers doubt their competence as teachers, it is unlikely that they will be satisfied with their chosen profession” (Ashton & Webb, 1986, p. 95)

As discussed above, levels of teacher-efficacy impact a teacher’s behavior both in- and outside the classroom (Bandura, 1997; Tschannen-Moran & Woolfolk-Hoy, 2001). Teachers work within social structures of schools; systems in place can have a positive or negative impact on teachers’ beliefs and will impact student achievement accordingly.
Collective efficacy. Marzano, Waters, and McNulty (2005) state, “In simple terms, collective efficacy is the shared belief that we can make a difference” (p. 99). Collective efficacy is defined as the “belief that a group has the capabilities to attain their goals” (Goddard & Goddard, 2001, p. 467); with regard to schools, that attainment is synonymous with student achievement on state mandated assessments. As members of social systems in schools, teachers do not work as “social isolates immune to the influence of those around them” (Bandura, 1997; Goddard, 2001). Teachers’ perceptions of collective efficacy—the belief that their faculty has the capability to attain shared goals--have been studied as a variable relating to student achievement for over a decade (Bandura, 1997; Goddard, 2001).

Goddard et al.’s (2004) study found collective efficacy to be a potentially powerful school organizational characteristic. Findings from a variety of studies have found positive relationships between collective efficacy and urban schools (Goddard & Goddard, 2001; Henderson, Jones, & Self, 1998), teacher and collective efficacy as predictors of professional commitment (Ware & Kitsantas, 2007), high school content areas and collective efficacy (Goddard, LoGerfo, & Hoy, 2004), teachers’ social compositions (race, gender, age), and teachers’ collective efficacy beliefs (Goddard & Skrla, 2006). Collective efficacy has been found to have a stronger effect on student achievement than the direct link between socioeconomic status and student achievement (Goddard et al., 2004) which indicates that students of lower socioeconomic status perform better in schools that have a higher sense of collective efficacy. These studies were founded on Bandura’s (1986) social cognitive theory concept of the mastery
experience that considers the prior achievement of students and how the perception of prior achievement impact the level of collective efficacy in relation to the variables in their studies (Goddard, 2001). Ashton and Webb (1986) state, “If aspects of the organization (for example, team teaching or multi-age grouping) sustain teachers’ sense of efficacy, then teachers may be more motivated to teach and their students more motivated to learn” (p. 95.)

Bandura (1997) posits that there are four sources for efficacy-shaping information: mastery experience, vicarious experience, social persuasion, and affective state. Most of the research has focused on mastery experience, prior experience, or performance. Vicarious experience entails learning by observation and groups learn vicariously by observing successful organizations: “Perceived collective efficacy may also be enhanced by observing successful organizations, especially those that attain similar goals in face of familiar opportunities and constraints” (Goddard et al., 2004, p. 1). Social persuasion can be seen at the organizational level as normative expectations for goal attainment or norms in daily practice that affect goal attainment.

Affective states refer to the capability of groups to meet challenges that arise from stress, anxiety, and excitement. Groups with high levels of efficacy handle these situations well; however, the reverse has also been found to be true (Goddard et al., 2004).

Effective schools have been characterized by collaborative environments where the adults in the building work toward common goals and have the belief that they can attain those goals. Marzano et al. (2005) define an effective school community as
follows: “A purposeful community is one with the collective efficacy and capability to develop and use assets to accomplish goals that matter to all community members through agreed-upon processes” (p. 99).

Learning Organizations Research

The concept of learning organizations originated within the business field during the 1970s and has become a common if not often overused term within the educational community. Research surrounding learning organizations as it relates to school communities has focused on student achievement. This section provides primary research on the concept of learning organizations as well as research as it pertains to organizational learning within school structures.

“What is an organization that it may learn” (Argyris & Schon, 1978, p. 1)? According to Argyris and Schon, a group becomes an organization when it learns, organizes, makes rules, makes decisions, delegates authority, and sets boundaries. An organization then is one that can learn and comes together for a specific purpose. It is not a large group of individuals such as a crowd but one that has goals and organizes itself to accomplish those goals. The idea of organizational learning is more complex than it may sound. “Organizations are not merely collections of individuals, yet there is no organization without such collections. Similarly, organizational learning is not merely individuals learning, yet organizations learn only through the experience and actions of individuals” (Argyris & Schon, 1978, p 4.) According to Senge (1990),

At the heart of every learning organization is a shift of mind – from seeing ourselves as separate from the world to connected to the world, from seeing problems as caused by someone or something “out there” to seeing how our own actions create the problems we experience. A learning organization is a place
where people are continually discovering how they create their reality. And how they can change it. (p. 13)

Organizational learning is stimulated when a disequilibrium or an error detection exists in what an organization aspires to accomplish compared to what it is actually being accomplished (Argyris & Schon, 1978; Leithwood, 2000; Senge, 1990). This disequilibrium could be stimulated by internal or external forces. Internal forces could be a culture of continuous improvement and examples; external forces could be test scores and/or political and economical events.

Organizational learning occurs when the organization makes an adjustment to their shared understanding or shared meaning, which Senge (1990) refers to as a mental map. Individuals as well as groups have mental maps that serve as a lens from which they view how the world around them operates. In the case of schools, a mental map is how a school and faculty operate to help students achieve their learning goals. These maps can be adjusted by new experiences and shared knowledge creation within organizational learning. “Learning must be stimulated in individuals, small teams, and whole groups and does not occur naturally” (Leithwood, 2000, p. 5). Organizational learning occurs when the individuals within the organization make changes to their mental map through collaborative inquiry. The concept of creating new knowledge through the process of tapping the tacit knowledge of the group and restructuring the mental map is the sole purpose of collaborative inquiry (Kikoski & Kikoski, 2004). Collaborative inquiry is a characteristic of effective schools and effective learning organizations. “Organizational transformation must aim at increasing the organization’s problem solving capability by building organizational resilience and expanding its
capacity to create, thereby widening the range of possible situations the organization will be able to cope with” (Leithwood, 2000, p. 2).

School systems embraced the concept of learning organizations and much research has been conducted within the last two decades that delves into how schools effectively utilize what is commonly known as professional learning communities. “Where strong school performance distinguishes schools, we have found teachers involved in mid-level decisions that affect the technical core of teaching and learning” (Mark & Louis, 1999, p. 721). DuFour and Eaker’s (1998) book, *Professional Learning Communities at Work: Best Practices for Enhancing Student Achievement*, has been utilized as a guide for developing learning communities within public school systems throughout the United States as well as internationally. Professional learning communities or PLC has become an overused term and “…many claim to have a PLC in place at their schools but cannot give a precise explanation of what it is” (Hord & Sommers, 2008, p. 7). However, specific criteria make up an authentic PLC within the school setting. Characteristics DuFour and Eaker attribute to a PLC include shared mission, vision, and values; collective inquiry; collaborative teams; action orientation and experimentation; continuous improvement; and results orientation. Hord and Sommers (2008) posit that the literature regarding PLC support the following dimensions: shared beliefs, values, and vision; shared supportive leadership; collective learning and its application; supportive conditions; and shared personal practice. Their studies show that these practices have positively impacted student achievement.
Effective Schools Research

In response to the 1964 Civil Rights Movement, the Coleman Report was the catalyst for effective schools research (Teddlie & Reynolds, 2000). Beginning in the mid to late 1960s, researchers began investigating processes within urban schools that were experiencing success in hopes to bring about equity in educational opportunities.

Effective schools researchers and practitioners were firm in their conviction that the primary mission of the public schools should be "learning for all." This conviction was predicated on three beliefs. First, all students can learn. Second, the individual school has control of enough of the critical variables to ensure such learning. Third, schools should be accountable to do so. (Lezotte, 1992, p. 34)

Weber (1971) conducted a study in four inner-city schools experiencing success with third grade and found the following ongoing processes to be crucial in their success: leadership, high expectations, good atmosphere, and careful evaluation of pupil progress.

Likewise, Edmonds (1981) conducted research within urban settings in hopes of answering the following question: How do we create effective urban schools? Over a period of years, his research resulted in the correlates of effective schools that included strong instructional leadership, pervasive and broadly understood instructional focus, safe and orderly school learning environments, high expectations for all students, and use of student achievement data (Teddlie & Reynolds, 2000). Effective school researchers were dedicated in providing a means for equity in education. The correlates of effective schools were utilized in many schools and districts throughout the United States as well as in many countries around the world.
Brock and Groth (2003) conducted a longitudinal case study with 50 low-income, racial, ethnic or language minority schools and found that schools:

in which adults in the buildings perceived a real opportunity to improve the academic circumstances of their students were able to transform their schools in more substantial ways than those schools in which adults perceived little hope for increasing student learning. (p. 164)

They posited that six key factors fostered perceptions in these effective schools:

- Ongoing professional development
- High degree of staff involvement
- Strong focus or vision of school based on improving student learning
- Continuous monitoring and evaluation of both program and student achievement
- Reallocation of resources to support the school wide plan
- Strong principal leadership

These factors are similar to the correlates of effective schools as well as the attributes for effective learning organizations. Collective efficacy, the belief that a faculty can accomplish their learning goals or increase student achievement, has been strongly linked to increased student achievement. Investigating the correlation between collective efficacy and effective learning organizations could shed light on the connection between these constructs.
Chapter 3: Methodology

Introduction

Efficacy beliefs have an effect on the way individuals perform. Henry Ford is known for saying, “Whether you think you can or can’t, you’re right.” How do teachers’ beliefs about their learning communities and collective efficacy impact their success with students? The purpose of this study was to examine the relationship between teachers’ perceptions of collective efficacy (CE) and teachers’ perceptions of the effectiveness of professional learning communities (PLC) in elementary schools within a large suburban school district located near Denver, Colorado. Furthermore, it investigated the impact this correlation had on student achievement and growth as measured by Colorado’s standardized assessment—the Colorado Student Assessment Program (CSAP).

In February 2010, the school district granted the researcher permission to conduct research in elementary schools within the district. The researcher contacted the principals at these schools and invited them to participate in the study. Surveys were administered at participating schools in March 2010-April 2010; extant data for each school were provided by the school district.

Research Design

A correlational research design was chosen for this study to determine whether a relationship existed between teachers’ perceptions of collective efficacy (CE) and perceptions of professional learning communities (PLC). Correlational research designs
allow for investigation of relationships between one or more independent quantitative variables and one or more dependent variables (Johnson & Christensen, 2004). This study was a non-experimental study; the independent variables were collective efficacy and professional learning communities and the dependent variable was student growth data.

Goddard’s (2002) Collective Efficacy Scale, Short Form (CE; to determine the level of CE) and Hord, Meehan, Orletsky, & Sattes’ (1999) School Professional Staff as Learning Community survey (PLC; to determine the perceived effectiveness of PLC at each school) were combined into one survey. All fourth and fifth grade teachers at schools of interest were asked to complete the survey. Extant achievement data from the CSAP assessment administered in the Spring of 2009 were provided by the school district to examine the impact this correlation had on student achievement, specifically student growth as determined by the Colorado growth model.

Growth data were analyzed at the teacher level. Only growth data from classroom teachers who had taught in their school buildings and grade level for two consecutive years were utilized for analysis. The correlation between CE and PLC was analyzed to determine whether the correlation had an impact on student growth within the teachers’ classroom.

**Setting**

The Collective Efficacy and the School Staff as Professional Learning Community surveys were combined into one survey so that responses to both surveys were collected from each teacher simultaneously. The survey was electronic and
administered via email during a regularly scheduled staff meeting. The researcher explained the survey directions to each building principal. Building principals provided time for fourth and fifth grade teachers to complete the survey. To ensure confidentiality, each school and teacher was coded for identification so that the researcher could conduct further analysis. An informed consent form was included at the beginning of the electronic survey that provided participants with information about the purpose and use of data collected. Survey results and data were accessible by the researcher and used for this study exclusively. All data were disposed of at the conclusion of the study.

**Population and Sample**

The school district that participated in study has a student enrollment of 50,000 students and 40 elementary schools. Initially, 28 elementary schools were invited to participate in this study based on whether the current principal had been in charge of the building for two or more years. Since new leadership brings with it a range of emotions and opinions associated with a group moving through the change process, the selection process controlled for the possibility of bias that can be attributed to lack of trust and/or relationships that take time to build when a new principal joins a staff. Twelve elementary schools had new leadership, thus narrowing the participation to 28 schools. Two additional schools were not eligible to participate due to new configurations of their fourth and fifth grade teams making it impossible to match CSAP data to specific teachers currently at those schools. Seventeen of the 26 eligible schools participated in the study, a participation rate of 65%.
The Colorado growth model measures the median growth students achieve on the CSAP by comparing growth for two consecutive years. At the elementary level, student growth is measured for students at the end of fourth grade who took the CSAP in both third and fourth grades. Growth is measured at the end of fifth grade for students who took CSAP in the third, fourth and fifth grades, again for a minimum of two consecutive years. Therefore, fourth and fifth grade teachers at each of the schools of interest were invited to complete the survey, assessing their perception of collective efficacy and effectiveness of their learning community.

The sample consisted of 202 fourth and fifth grade teachers from the 26 schools. Seventeen schools chose to participate, bringing the total number of teachers invited to participate to 140. Only data from those teachers who had been in their current grade level and school for two consecutive years were included in the growth data analysis. This selection process ensured that teachers’ student growth data from the Spring of 2009 could be matched with their perceptions of CE and PLC of their school as assessed by the survey instrument within this study. Teacher response rate was 37%. Out of 140 teachers, 53 responded to the survey. The low response rate could be reflective of the time when the survey was administered. Fourth and fifth grade teachers were in the midst of Spring CSAP testing, a high stress period for these teachers.

**Instrumentation**

Two survey instruments were combined into one survey for this study: the Collective Efficacy Scale developed by Goddard (2002) and the School Professional Staff as Learning Community survey developed by Hord et al. (1999). This allowed for
simultaneous collection of data from each teacher regarding their perceptions of both constructs. The surveys were administered electronically and included an informed consent statement at the beginning of the survey.

**Collective Efficacy Scale.** Goddard’s (2002) short form of the Collective Efficacy Scale is designed to “assess the extent to which a faculty believes in its conjoint capability to positively influence student learning” (p. 97). Goddard and his team of researchers originally developed the Collective Efficacy Scale in 2000. The scale consisted of 21 items and was designed to focus the unit of analysis at the group level. Goddard stated, “When researchers are interested in the differential performances of groups, the unit of analysis is the group” (p. 98). Therefore, items in the survey began with “We or Teachers” and either referred to group competence (GC) or to task analysis (TA). Group competence refers to the judgment of the faculties’ skills regarding teaching situations and task analysis refers to the opportunities or barriers that accompany the task at hand (Goddard, 2002). Items were written positively (“Teachers in this school are able to get through to difficult students”) or negatively (“Teachers in this school do not have the skills to deal with student disciplinary problems).

In 2002, Goddard improved the Collective Efficacy Scale so that it would be a more parsimonious tool. The short form survey included 12-items from the original 21-item scale. The correlation between the original and short collective efficacy scale was $r= .983$, which suggested that they were strongly related (Goddard, 2002). The short form had a high internal consistency of Cronbach’s alpha=.94.
Another benefit of the short form was a balance of GC and TA items (Goddard, 2002). There were three positive and three negative items for both GC and TA for a total of 12 items. Participant response choices included a 6-point Likert scale from 1=strongly disagree to 6=strongly agree. All 12 items were included in the combined survey. Table 1 presents a complete list of items.

Table 1

*Collective Efficacy Scale*

<table>
<thead>
<tr>
<th>Question</th>
<th>Item</th>
</tr>
</thead>
<tbody>
<tr>
<td>Q1</td>
<td>Teachers in this school are able to get through to the most difficult students.</td>
</tr>
<tr>
<td>Q2</td>
<td>Teachers here are confident they will be able to motivate their students.</td>
</tr>
<tr>
<td>Q3</td>
<td>If a child doesn’t want to learn teachers here give up.</td>
</tr>
<tr>
<td>Q4</td>
<td>Teachers here don’t have the skills needed to produce meaningful learning.</td>
</tr>
<tr>
<td>Q5</td>
<td>Teachers in this school believe that every child can learn</td>
</tr>
<tr>
<td>Q6</td>
<td>These students come to school ready to learn.</td>
</tr>
<tr>
<td>Q7</td>
<td>Home life provides so many advantages that students here are bound to learn.</td>
</tr>
<tr>
<td>Q8</td>
<td>Students here just aren’t motivated to learn</td>
</tr>
<tr>
<td>Q9</td>
<td>Teachers in this school do not have the skills to deal with student disciplinary problems.</td>
</tr>
<tr>
<td>Q10</td>
<td>The opportunities in this community help ensure that these students will learn.</td>
</tr>
<tr>
<td>Q11</td>
<td>Learning is more difficult at this school because students are worried about their safety</td>
</tr>
<tr>
<td>Q12</td>
<td>Drug and alcohol abuse in the community make learning difficult for students here.</td>
</tr>
</tbody>
</table>
Professional Learning Community Survey. In 1996, Hord developed the School Professional Staff as Learning Community survey that measures “the extent to which teachers believe their school is a positive learning environment and is supportive as a learning community” (Cowley, 1999, p. 5). This survey investigated the maturity of a school as a learning community. Five major attributes of PLC were assessed: shared leadership, shared vision, collective creativity, peer review, and supportive conditions/capacities. It was field tested by Meehan, Orletsky, and Sattes in 1997 who found that each of the five descriptors had an internal consistency ranging from the mid to upper .80s with an overall internal consistency reliability of .9389. Their results also revealed that the instrument differentiated between schools according to the maturity of their learning communities. They concluded that it was a useful tool in measuring the maturity of a staff as a PLC (Hord et al., 1999; Meehan et al., 1997).

Cowley and Meehan (2001) used Hord et al.’s (1999) instrument to explore the relationships of teacher efficacy and PLC. The Cronbach Alpha internal consistency reliability for PLC in this study was .95, which is consistent with the results of Meehan et al. (1997). While their study yielded low correlations between teacher efficacy and PLC, the researchers suggested, “It would be useful to measure the overall organizational or collective efficacy construct (and PLC)” (p. 18). This study investigated the relationship between collective efficacy and professional learning communities.

The PLC survey included 17 items that assessed each of the five dimensions: shared leadership, shared vision, collective creativity, peer review, and supportive conditions/capacities (see Table 2). The items used a Likert scale with answers from 5
(high) to 1 (low). Anchor statements were used for ratings of 5, 3, and 1. Response choices for 2 and 4 were blank, indicating that the response was between the anchor statements. The higher the total scale score, the more positively the school was viewed as a learning community (Cowley, 1999).

Table 2

School Professional Staff as Learning Community Survey Items

<table>
<thead>
<tr>
<th>Attribute</th>
<th>5 Highest</th>
<th>3</th>
<th>1 Lowest</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>School administrators participate democratically with teachers sharing power, authority and decision making.</td>
<td>1a Although there are some legal and fiscal decisions required of the principal, school administrators consistently involve staff in discussing and making decisions about most school issues.</td>
<td>1a Administrators invite advice and counsel from the staff and then make decisions themselves.</td>
<td>1a Administrators never share information with the staff nor provide opportunities to be involved in decision making.</td>
</tr>
<tr>
<td>1b Administrators involve the entire staff.</td>
<td></td>
<td></td>
<td>1b Administrators do not involve any staff.</td>
</tr>
<tr>
<td>2</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Shared visions for school improvement have an undeviating focus on student learning and are consistently referenced for the staff’s work.</td>
<td>2a Visions for improvement are discussed by the entire staff such that consensus and a shared vision results.</td>
<td>2a Visions for improvement are not thoroughly explored; some staff agree and others do not.</td>
<td>2a Visions for improvement do not involve any staff.</td>
</tr>
<tr>
<td>2b Visions for improvement are always focused on students and teaching and learning.</td>
<td>2b Visions for improvement are sometimes focused on students and teaching and learning.</td>
<td></td>
<td>2b Visions for improvement do not target students and teaching and learning.</td>
</tr>
<tr>
<td>2c Visions for improvement target high quality learning for all</td>
<td>2c Visions for improvement address quality learning</td>
<td></td>
<td>2c Visions for improvement do not include concerns about the quality of learning experiences.</td>
</tr>
<tr>
<td>Attribute</td>
<td>5 Highest</td>
<td>3</td>
<td>1 Lowest</td>
</tr>
<tr>
<td>-----------</td>
<td>-----------</td>
<td>---</td>
<td>---------</td>
</tr>
<tr>
<td>3 Staff’s collective learning and application of the learning (taking action) create high intellectual learning tasks and solutions to address student needs.</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>3a The entire staff meets to discuss issues, share information, and learn with and from each other.</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>3b The staff meets regularly and frequently on substantive student-centered educational issues.</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>3c The staff discusses the quality of their teaching and students’ learning.</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>3d The staff, based on their learning, makes and implements plans that address students’ needs, more effective teaching and more successful student learning.</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>3e The staff debriefs and assesses the impact of their actions and makes revisions.</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>4 Peers review and give feedback based on observing each others’ classroom behaviors in order to increase individual and organizational capacity.</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>4a Staff regularly and frequently visit and observe each other’s classroom teaching.</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>4b Staff provide feedback to each other about teaching and learning based on their classroom observations.</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>4c Staff does not often discuss their instructional practices nor its influence on student learning.</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>4d The staff occasionally acts on their learning and makes and implements plans to improve teaching and learning.</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>4e The staff infrequently assesses the impact of their actions and seldom makes revisions based on the results.</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>3a Subgroups meet to discuss issues, share information, and learn with and from each other.</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>3b The staff meets occasionally on substantive student-centered educational issues.</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>3c The staff does not often discuss their instructional practices nor its influence on student learning.</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>3d The staff occasionally acts on their learning and makes and implements plans to improve teaching and learning.</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>3e The staff infrequently assesses the impact of their actions and seldom makes revisions based on the results.</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>3a Individuals discuss issues, share information, and learn with and from each other.</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>3b The staff never meets to consider substantive educational issues.</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>3c The staff basically discusses non-teaching and non-learning issues.</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>3d The staff does not act on their learning.</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>3e The staff does not assess their work.</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Attribute</td>
<td>5 Highest</td>
<td>3</td>
<td>1 Lowest</td>
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<tr>
<td>-----------</td>
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<td>---</td>
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</tr>
<tr>
<td>5</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Conditions and capacities support the school’s arrangement as a professional learning organization.</td>
<td>5a Time is arranged and committed for whole staff interactions.</td>
<td>5a Time is arranged but frequently the staff fails to meet.</td>
<td>5a Staff cannot arrange time for interacting.</td>
</tr>
<tr>
<td></td>
<td>5b The size, structure, and arrangements of the school facilitate staff proximity and interaction.</td>
<td>5b While the facility and school membership are large, the staff are working to maximize existing arrangements for interaction.</td>
<td>5b The staff takes no action to manage the facility and personnel for interaction.</td>
</tr>
<tr>
<td></td>
<td>5c A variety of processes and procedures are used to encourage staff communication.</td>
<td>5c A single communication exists and is sometimes used to share information.</td>
<td>5c Communication devices are not given attention.</td>
</tr>
<tr>
<td></td>
<td>5d Trust and openness characterize all the staff.</td>
<td>5d Some of the staff are trusting and open.</td>
<td>5d Trust and openness do not exist among the staff.</td>
</tr>
<tr>
<td></td>
<td>5e Caring, collaborative and productive relationships exist among all the staff.</td>
<td>5e Caring and collaboration are inconsistently demonstrated among the staff.</td>
<td>5e Staff are isolated and work alone at their task.</td>
</tr>
</tbody>
</table>

**Data Collection**

Upon approval of University of Denver’s Internal Review Board (IRB), permission to conduct research was granted in February 2010. Principals at eligible schools were contacted directly by the researcher. The researcher explained the purpose of the research as well as the survey administration process. Surveys were administered at each school during March 2010 and April 2010 via email at a regularly scheduled staff meeting. An information statement was provided on the initial email that provided respondents with a description of the survey, contact information for the researcher, and an informed consent statement. Respondents were assured that neither their personal
identity nor the identity of their school would be released in the dissertation. Follow-up emails were sent to school principals to forward to their fourth and fifth grade teachers. The 37% response rate may have been higher had the researcher been able to contact them directly.

Extant data were provided to the researcher in June 2010, which included CSAP growth data for participating teachers and demographic information at the school level including free/reduced lunch and ethnicity.

Data Analysis

Quantitative data were collected through the online survey described above. Responses were exported into an Excel spreadsheet and then imported into the Statistical Package for Social Studies (SPSS) for analysis. Correlational analysis included Pearson’s bivariate correlation—a correlation between two variables. This calculation determined whether a correlation existed between collective efficacy and PLC (Field, 2009). Other statistical tests such as descriptive analysis were conducted to look for existing patterns among the data.

Further analysis utilized the Colorado growth model that measured individual student growth rates for reading, writing, and math. “The analyses allow the State to determine an annual, individual specific, rate of growth and to use that quantity to predict future achievement” (Betebenner, 2007, p. 1) This growth model provided an estimate of student growth percentiles (SGP) for CSAP. Pearson’s correlation analysis was calculated to determine if there was a correlation between CE, PLC, and student growth percentile data.
The Collective Efficacy Scale (Goddard, 2002) and the School Professional Staff as Learning Community survey (Hord et al., 1999) both had satisfactory levels of internal consistency at .94. By combining these two constructs, the researcher was able to collect data that assessed the teachers’ perceptions of both constructs simultaneously, allowing the correlation to be further analyzed in comparison to student achievement growth data as measured by the Spring 2009 CSAP data. This analysis enabled the researcher to determine if a high correlation had a positive impact on student growth and if a low correlation had a negative impact on student growth within the teacher’s classroom.

The major limitation of this study was the low response rate. Mailed survey response rates are usually between 20%-40% (Roberts, 2004). The response rate for this study was 37%, i.e., 52 out of 140 teachers who received the online invitation to participate responded. The survey was administered during the CSAP administration window of February thru March, which is a busy and often stressful time for teachers in fourth and fifth grades. The online survey was administered during a regular faculty meeting and emailed by their building principal. Although the informed consent form explained that the teacher’s identity would be protected, this could have affected the responses. This situation, along with timing, might possibly explain the low response rate.

**Limitations**

A possible limitation of this study is that the researcher works as a school principal within the same district. This could have impacted which principals and teachers chose to participate in the study. However, the response rate fell within
acceptable limits. To explore this concern, the researcher looked at skewness and kurtosis to see if there were any deviations from the normal curve distribution. The findings from these tests did not find any response sets too far from the normal distribution indicating a lack of response bias.

**Summary**

The purpose of this study was to explore the relationship between collective efficacy and professional learning communities through the lens of a correlational research design and to delve deeper at the teacher level to determine if this correlation had an influence on student’s growth in reading, writing, and math.

Data were collected from fourth and fifth grade teachers at 17 elementary schools within the participating school district. These data included responses from a combined survey designed to measure a teacher’s perception of collective efficacy and their perception of their school as an effective learning community. Extant student growth data were provided by the district including growth data from the CSAP administered in the Spring of 2009 and demographic data from the schools of interest.

Previous studies have shown that collective efficacy impacts achievement in a number of fields as does the presence of effective normative structures found in learning communities. Statistical analyses using SPSS were performed to ascertain whether a correlation existed between these two constructs and whether there was a resulting impact on student growth. These correlational analyses along with descriptive analysis are explained in chapter 4.
Chapter 4: Results

Introduction

The purpose of this study was to determine if there was a correlation between teachers’ perceptions of their school as an effective learning community (PLC) and teachers’ perceptions of their faculty’s level of collective efficacy (CE). A statistical analysis investigated the relationship between PLC and CE. Further analysis was conducted to explore whether there was any correlation between PLC and CE and student achievement as measured by the Colorado Student Assessment Program (CSAP) and represented in this study by the Colorado Growth Model.

Chapter 4 is organized by presenting descriptive information about the sample and then presenting analysis results for the following research questions:

1. Does the presence of characteristics of an effective learning organization correlate with the level of collective efficacy within a school?

2. Is there a correlation between effective learning organization characteristics, collective efficacy and student achievement?

Sample Descriptive Statistics

One hundred forty fourth and fifth grade teachers from 17 elementary schools within a large suburban school district located near Denver, Colorado were invited to participate in the study. Fifty-three teachers (37%) completed a combined survey that assessed teacher perception of collective efficacy (CE) and the effectiveness of their schools as professional learning communities (PLC). The survey response rate of 37%
fell within acceptable limits for mailed surveys. The total number of fourth and fifth grade teachers at each school varied based upon the enrollment size of the school. The number of teachers per school ranged between 5 and 10 teachers in fourth and fifth grades. Respondents ranged from two to six teachers per school.

Demographic information collected at the beginning of the survey included teacher names, years of experience teaching in fourth or fifth grade, and the name of the school where they taught. This information enabled the researcher to match the aggregate student growth percentiles (SPG) for each teacher’s group of students to his/her perception of CE and PLC. Each teacher and school was coded for analysis so their identification could be protected. Schools were coded 1 through 17; each teacher received a number for his or her school along with a letter of the alphabet. For example, a teacher coded as “1a” meant that the teacher was from school “1” and the teacher designation was “a.”

Table 3 provides the frequency of respondents who taught fourth or fifth grade: 31 respondents (58.5%) taught fourth grade and 22 respondents (41.5%) taught fifth grade.

Table 3

<table>
<thead>
<tr>
<th>Teachers</th>
<th>Frequency</th>
<th>Percent</th>
<th>Valid Percent</th>
<th>Cumulative Percent</th>
</tr>
</thead>
<tbody>
<tr>
<td>Fourth</td>
<td>31</td>
<td>58.5</td>
<td>58.5</td>
<td>58.5</td>
</tr>
<tr>
<td>Fifth</td>
<td>22</td>
<td>41.5</td>
<td>41.5</td>
<td>100.0</td>
</tr>
<tr>
<td>Total</td>
<td>53</td>
<td>100.0</td>
<td>100.0</td>
<td></td>
</tr>
</tbody>
</table>
Table 4 contains frequency data describing the number of years of experience each teacher taught either fourth or fifth grade. Most respondents (79.2%) taught fewer than eight years in fourth or fifth grade while only 20.8% of the respondents taught fourth or fifth grade for more than 10 years.

Table 4

*Number of Years Teaching*

<table>
<thead>
<tr>
<th>Frequency</th>
<th>01</th>
<th>02</th>
<th>03</th>
<th>04</th>
<th>05</th>
<th>06</th>
<th>07</th>
<th>08</th>
<th>10</th>
<th>11</th>
<th>12</th>
<th>13</th>
<th>14</th>
<th>18</th>
<th>21</th>
<th>22</th>
</tr>
</thead>
<tbody>
<tr>
<td>Frequency</td>
<td>5</td>
<td>7</td>
<td>8</td>
<td>6</td>
<td>6</td>
<td>2</td>
<td>4</td>
<td>4</td>
<td>2</td>
<td>1</td>
<td>1</td>
<td>2</td>
<td>2</td>
<td>1</td>
<td>1</td>
<td>1</td>
</tr>
<tr>
<td>Percent</td>
<td>9.4</td>
<td>13.2</td>
<td>15.1</td>
<td>11.3</td>
<td>11.3</td>
<td>3.8</td>
<td>7.5</td>
<td>7.5</td>
<td>3.8</td>
<td>1.9</td>
<td>1.9</td>
<td>3.8</td>
<td>3.8</td>
<td>1.9</td>
<td>1.9</td>
<td>1.9</td>
</tr>
<tr>
<td>Valid Percent</td>
<td>9.4</td>
<td>13.2</td>
<td>15.1</td>
<td>11.3</td>
<td>11.3</td>
<td>3.8</td>
<td>7.5</td>
<td>7.5</td>
<td>3.8</td>
<td>1.9</td>
<td>1.9</td>
<td>3.8</td>
<td>3.8</td>
<td>1.9</td>
<td>1.9</td>
<td>1.9</td>
</tr>
<tr>
<td>Cumulative Percent</td>
<td>9.4</td>
<td>22.6</td>
<td>37.7</td>
<td>49.1</td>
<td>60.4</td>
<td>64.2</td>
<td>71.7</td>
<td>79.2</td>
<td>83.0</td>
<td>84.9</td>
<td>86.8</td>
<td>90.6</td>
<td>94.3</td>
<td>96.2</td>
<td>98.1</td>
<td>100.0</td>
</tr>
<tr>
<td>Total</td>
<td>53</td>
<td>100.0</td>
<td>100.0</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
Collective Efficacy Scale--Descriptive Statistics

The Collective Efficacy (CE—12 items) and the School Staff as Professional Learning Community (PLC—17 items) surveys were combined for a total of 29 items. The combined survey was completed by 53 elementary school teachers in grades four and five. Most completed the survey entirely and some respondents chose not to answer selected items. There was no observable pattern to the missing responses. Descriptive analysis was conducted to find the mean, minimum, maximum, and standard deviation for each item.

Goddard’s (2002) Collective Efficacy Short Form contained 12 items to “assess the extent to which a faculty believed in its conjoint capability to positively influence student learning” (p. 97). Although there were 53 total observations, 3 observations were excluded due to missing values because participants did not respond to all items on the scale. SPSS was used to analyze the remaining 50 valid observations. Six items on the scale were worded in a negative direction and six items were worded in a positive direction. Items were answered using a 6 point Likert scale beginning with 1--strongly agree to 6--strongly disagree. Therefore, items 3, 4, 8, 9, 11, and 12 were reverse coded for the purpose of analysis (see Table 5)--a response of 1 was changed to 6, 2 to 5, 3 to 4, 4 to 3, 2 to 1, and 1 to 6.
Table 5

Collective Efficacy Scale—Reversal of Items

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

Table 6 describes the minimum, maximum, mean, and standard deviation for each Collective Efficacy item. Items CE1, CE2, CE5, and CE6 were positively worded; all
had a mean between 1.53 and 2.38 (agreement), which indicated that teachers had a positive perception of their school’s ability to reach school goals. Items CE3, CE4, CE8, CE9, CE11, and CE12 were negatively worded; all responses had a mean between 4.94 and 5.78 (disagreement), which indicated that teachers had a positive perception of their school’s ability to reach school goals. Both CE7 and CE10 were positively worded with a mean of 3.37 and 2.61 respectively, indicating a neutral response. These two items asked teachers to make judgments about students’ home life or opportunities the community offered students. Both items were out of the teachers’ control but could often influence teachers’ perceptions of their own ability or their school’s ability to accomplish goals with students. The neutral responses indicated that home life and opportunities offered by the community neither positively nor negatively influenced the teachers’ perception of CE at participating schools.

Table 6

*Collective Efficacy Item—Descriptive Statistics*

<table>
<thead>
<tr>
<th>Item</th>
<th>N</th>
<th>Min.</th>
<th>Max.</th>
<th>Mean</th>
<th>SD</th>
</tr>
</thead>
<tbody>
<tr>
<td>CE1-Teachers in this school are able to get through to most students.</td>
<td>51</td>
<td>1</td>
<td>5</td>
<td>2.29</td>
<td>1.137</td>
</tr>
<tr>
<td>CE2-Teachers here are confident they will be able to motivate their students.</td>
<td>51</td>
<td>1</td>
<td>6</td>
<td>1.84</td>
<td>1.007</td>
</tr>
<tr>
<td>CE3-If a child doesn't want to learn teachers here give up.</td>
<td>51</td>
<td>3</td>
<td>6</td>
<td>5.51</td>
<td>.784</td>
</tr>
<tr>
<td>CE4-Teachers here don’t have the skills needed to produce meaningful learning.</td>
<td>51</td>
<td>2</td>
<td>6</td>
<td>5.39</td>
<td>1.021</td>
</tr>
<tr>
<td>CE5-Teachers in this school believe that every child can learn.</td>
<td>51</td>
<td>1</td>
<td>4</td>
<td>1.53</td>
<td>.857</td>
</tr>
</tbody>
</table>
The School Professional Staff as a Learning Community survey instrument was designed to identify schools as effective learning communities (LC). SPSS was used for analysis; the results that follow describe each item by providing the number of valid observations along with the range, mean, and standard deviation. The instrument contains five dimensions of learning communities; two to five items describe each dimension. For purpose of analysis, each dimension was labeled LC1 through LC5 and the descriptors were labeled LC1a, LC2b, etc. Responses were arranged using a Likert

<table>
<thead>
<tr>
<th>Item</th>
<th>N</th>
<th>Min.</th>
<th>Max.</th>
<th>Mean</th>
<th>SD</th>
</tr>
</thead>
<tbody>
<tr>
<td>CE6-These students come to school ready to learn.</td>
<td>50</td>
<td>1</td>
<td>5</td>
<td>2.38</td>
<td>1.141</td>
</tr>
<tr>
<td>CE7-Homelife provides so many advantages that students here a bound to learn.</td>
<td>51</td>
<td>1</td>
<td>6</td>
<td>3.37</td>
<td>1.562</td>
</tr>
<tr>
<td>CE8-Students here just aren't motivated to learn.</td>
<td>51</td>
<td>2</td>
<td>6</td>
<td>4.98</td>
<td>1.140</td>
</tr>
<tr>
<td>CE9-Teachers in this school do not have the skills to deal with student disciplinary problems.</td>
<td>51</td>
<td>2</td>
<td>6</td>
<td>4.94</td>
<td>1.190</td>
</tr>
<tr>
<td>CE10-The opportunities in this community help ensure that these students learn.</td>
<td>51</td>
<td>1</td>
<td>6</td>
<td>2.61</td>
<td>1.457</td>
</tr>
<tr>
<td>CE11-Learning is more difficult at this school because students are worried about safety.</td>
<td>51</td>
<td>3</td>
<td>6</td>
<td>5.78</td>
<td>.642</td>
</tr>
<tr>
<td>CE12-Drug and alcohol abuse in the community make learning difficult for students here.</td>
<td>51</td>
<td>3</td>
<td>6</td>
<td>5.65</td>
<td>.627</td>
</tr>
</tbody>
</table>

Valid N (listwise) 50
scale of 1-5; three statements reflected the level of development of the learning community along a continuum of low, middle, or high (Hord et al., 1999).

Table 7 provides a summary of descriptive data for the first dimension LC 1: School administrators participate democratically with teachers sharing power, authority, and decision making. There were 53 valid scores for items LC1a and LC1b. LC1a had a mean score of 4.13, indicating that school administrators involved staff in discussing and making decisions about most school issues. LC1b had a mean score of 3.91, indicating administrators at participating schools involved staff in the decision making process by using committees or leadership teams. However, the entire staff may not have been involved in the process.

Table 7

School Professional Staff as a Learning Community: LC1—Descriptive Statistics

<table>
<thead>
<tr>
<th>LC 1—School administrators participate democratically with teachers sharing power, authority, and decision making.</th>
<th>N</th>
<th>Min.</th>
<th>Max.</th>
<th>Mean</th>
<th>SD</th>
</tr>
</thead>
<tbody>
<tr>
<td>LC1a</td>
<td>53</td>
<td>2</td>
<td>5</td>
<td>4.13</td>
<td>.941</td>
</tr>
<tr>
<td>1 = Administrators never share information with the staff nor provide opportunities to be involved in decision making.</td>
<td>3 = Administrators invite advice and counsel from the staff and then make decisions themselves.</td>
<td>5 = Although there are some legal and fiscal decisions required of the principal, school administrators consistently involve staff in discussing and making decisions about most school issues.</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>LC1b</td>
<td>53</td>
<td>1</td>
<td>5</td>
<td>3.91</td>
<td>.986</td>
</tr>
<tr>
<td>1 = Administrators do not involve any staff.</td>
<td>3 = Administrators involve a small committee, council or team of staff.</td>
<td>5 = Administrators involve the entire staff.</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Valid N (listwise)</td>
<td>53</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
Table 8 provides a summary of the descriptive data for dimension two: LC 2--
Shared visions for school improvement have an undeviating focus on student learning and are consistently referenced for the staff’s work. There were a total of 52 valid observations for LC2. Item LC2a received 52 responses; whereas, LC2b and LC2C received 53 valid observations. Item LC2a described a staff’s level of involvement in creating a shared vision. The mean was 4.04, indicating that staff members at most of the schools surveyed were involved in creating a vision for improvement at some level. LC2b described the level at which the shared vision focused on students’ learning and teaching and was infused in their work with students. The mean of 4.57 indicated that at most schools the shared vision was indeed focused on student learning. LC2c described whether the vision for improvement included quality of learning experiences for all students. The mean of 4.38 indicated that most schools addressed the quality of learning in terms of student ability rather than targeting high quality learning for all students.

Table 8

School Professional Staff as a Learning Community: LC2--Descriptive Statistics

<table>
<thead>
<tr>
<th>#</th>
<th>Variable Description</th>
<th>N</th>
<th>Min</th>
<th>Max</th>
<th>Mean</th>
<th>SD</th>
</tr>
</thead>
<tbody>
<tr>
<td>LC2a</td>
<td>Shared visions for school improvement have an undeviating focus on student learning and are consistently referenced for the staff’s work.</td>
<td>52</td>
<td>1</td>
<td>5</td>
<td>4.04</td>
<td>1.084</td>
</tr>
<tr>
<td></td>
<td>1 = Visions for improvement do not involve any staff.</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>3 = Visions for improvement are not thoroughly explored; some staff agree and others do not</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>5 = Visions for improvement are discussed by the entire staff such that consensus and a shared vision results.</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>LC2b</td>
<td>Visions for improvement do not target students and teaching and learning.</td>
<td>53</td>
<td>2</td>
<td>5</td>
<td>4.57</td>
<td>.721</td>
</tr>
<tr>
<td></td>
<td>1 = Visions for improvement do not target students and teaching and learning.</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
Visions for improvement are sometimes focused on students and teaching and learning.
Visions for improvement are always focused on students and teaching and learning.
Visions for improvement do not include concerns about the quality of learning experiences.
Visions for improvement address quality learning experiences in terms of students’ abilities.
Visions for improvement target high quality learning for all students.

Table 9 provides a summary of the descriptive data for dimension three: LC3--Staff's collective learning and application of the learning (taken action) create high intellectual learning tasks and solutions to address student needs. LC3 contained five descriptors that sought to understand the level at which a staff met to learn together, discussed the educational issues and practice, applied the learning, and assessed their actions. LC3 received a total of 50 valid responses. LC3a and LC3b received 53 responses, LC3c received 52 responses, and LC3d and LC3e both received 51 responses. The mean score for LC3a was 3.81, showing that at most schools subgroups met to discuss issues, share information, and learn with and from each other. LC3b had a mean score of 4.06, revealing that staff met to discuss substantive student-centered educational issues more than just occasionally. The mean score was 4.15 for LC3c, reflecting that staffs discussed their instructional practices and its influence on student learning but might not have always focused on the quality of teaching and learning. LC3d had a mean score of 4.33, showing that at most schools the staff made revisions, implemented, and took action on their collective learning to improve teaching and learning. LC3e had a
mean score of 4.12, indicating that the staff frequently assessed their actions but seldom made revisions to improve student learning.

Table 9

**School Professional Staff as a Learning Community: LC3--Descriptive Statistics**

<table>
<thead>
<tr>
<th>LC3a</th>
<th>Staff's collective learning and application of the learning (taken action) create high intellectual learning tasks and solutions to address student needs.</th>
<th>N</th>
<th>Min.</th>
<th>Max.</th>
<th>Mean</th>
<th>SD</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Individuals discuss issues, share information, and learn with and from each other.</td>
<td>53</td>
<td>1</td>
<td>5</td>
<td>3.81</td>
<td>1.057</td>
</tr>
<tr>
<td>3</td>
<td>Subgroups meet to discuss issues, share information, and learn with and from each other.</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>5</td>
<td>The entire staff meets to discuss issues, share information, and learn with and from each other.</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>LC3b</th>
<th>The staff never meets to consider substantive educational issues.</th>
<th>N</th>
<th>Min.</th>
<th>Max.</th>
<th>Mean</th>
<th>SD</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>The staff never meets to consider substantive educational issues.</td>
<td>53</td>
<td>2</td>
<td>5</td>
<td>4.06</td>
<td>.929</td>
</tr>
<tr>
<td>3</td>
<td>The staff meets occasionally on substantive student-centered educational issues.</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>5</td>
<td>The staff meets regularly and frequently on substantive student-centered educational issues.</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>LC3c</th>
<th>The staff basically discusses non-teaching and non-learning issues.</th>
<th>N</th>
<th>Min.</th>
<th>Max.</th>
<th>Mean</th>
<th>SD</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>The staff basically discusses non-teaching and non-learning issues.</td>
<td>52</td>
<td>2</td>
<td>5</td>
<td>4.15</td>
<td>.849</td>
</tr>
<tr>
<td>3</td>
<td>The staff does not often discuss their instructional practices nor its influence on student learning.</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>5</td>
<td>The staff discusses the quality of their teaching and students’ learning.</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>LC3d</th>
<th>The staff does not act on their learning.</th>
<th>N</th>
<th>Min.</th>
<th>Max.</th>
<th>Mean</th>
<th>SD</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>The staff does not act on their learning.</td>
<td>51</td>
<td>2</td>
<td>5</td>
<td>4.33</td>
<td>.909</td>
</tr>
<tr>
<td>3</td>
<td>The staff occasionally acts on their learnings and makes and implements plans to improve teaching and learning.</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>5</td>
<td>The staff, based on their learnings, makes and implements plans that address students’ needs, more effective teaching and more successful student learning.</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
LC3e
1 = The staff does not assess their work.
3 = The staff infrequently assesses the impact of their actions and seldom makes revisions based on the results.
5 = The staff, based on their learning, makes and implements plans that address students’ needs, more effective teaching and more successful student learning.

<table>
<thead>
<tr>
<th>Valid N (listwise)</th>
<th>52</th>
</tr>
</thead>
</table>

Valid N (listwise) 52

Table 10 provides a summary of the descriptive data for dimension four: LC4--Peers review and give feedback based on observing each other's classroom behaviors in order to increase individual and organizational capacity. LC4 investigated whether teachers observed each other while teaching and then provided each other with feedback based on their observations. LC4 had 48 valid observations. LC4a received 51 valid observations with a mean score of 2.75. This low score indicated that in most schools, teachers rarely visited their peer’s classroom. LC4b received 48 responses with a mean score of 2.92, indicating that in most schools when teachers observed in their peer’s classroom, there was little interaction following the observation and/or the discussion was not related to teaching.
Table 10

School Professional Staff as a Learning Community: LC4--Descriptive Statistics

<table>
<thead>
<tr>
<th>LC4a</th>
<th>Peers review and give feedback based on observing each other’s classroom behaviors in order to increase individual and organizational capacity.</th>
<th>N</th>
<th>Min.</th>
<th>Max.</th>
<th>Mean</th>
<th>SD</th>
</tr>
</thead>
<tbody>
<tr>
<td>LC4a</td>
<td></td>
<td>51</td>
<td>1</td>
<td>5</td>
<td>2.75</td>
<td>1.354</td>
</tr>
<tr>
<td>1 = Staff never visit their peers’ classrooms.</td>
<td>3 = Staff occasionally visit and observe each other’s teaching.</td>
<td>5 = Staff regularly and frequently visit and observe each other’s classroom teaching.</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>LC4b</td>
<td></td>
<td>48</td>
<td>1</td>
<td>5</td>
<td>2.92</td>
<td>1.397</td>
</tr>
<tr>
<td>1 = Staff do not interact after classroom observations.</td>
<td>3 = Staff discuss non-teaching issues after classroom observation.</td>
<td>5 = Staff provide feedback to each other about teaching and learning based on their classroom observations.</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Valid N (listwise) 48

Table 11 provides a summary of the descriptive data for dimension five: LC5--Conditions and capacities support the school's arrangement as a professional learning organization. LC5 sought to gain an understanding of systems and structures within a school that support a professional learning community. There were a total of 50 valid observations for LC5. LC5a received 51 responses with a mean of 4.43, which indicated that time was arranged for frequent staff interactions. LC5b received 50 responses with a mean score of 4.10, indicating that at most schools the staff worked to maximize staff interaction. LC5c received 51 responses with a mean score of 4.31, revealing that at most schools, there were processes and procedures encouraging communication. LC5d received 51 responses with a mean score of 3.73, indicating that
at most schools, there was a moderate level of trust and openness among staff. LC5e received 51 responses with a mean score of 4.06, reflecting that caring and collaborative relationships existed but were inconsistently demonstrated among all staff.

Table 11

**School Professional Staff as a Learning Community: LC5--Descriptive Statistics**

<table>
<thead>
<tr>
<th>LC5--Conditions and capacities support the school's arrangement as a professional learning organization.</th>
<th>N</th>
<th>Min.</th>
<th>Max.</th>
<th>Mean</th>
<th>SD</th>
</tr>
</thead>
<tbody>
<tr>
<td>LC5a</td>
<td>51</td>
<td>1</td>
<td>5</td>
<td>4.43</td>
<td>.964</td>
</tr>
<tr>
<td>1 = Staff cannot arrange time for interacting.</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>3 = Time is arranged but frequently the staff fails to meet.</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>5 = Time is arranged and committed for whole staff interactions.</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>LC5b</td>
<td>50</td>
<td>2</td>
<td>5</td>
<td>4.10</td>
<td>1.035</td>
</tr>
<tr>
<td>1 = The staff takes no action to manage the facility and personnel for interaction.</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>3 = While the facility and school membership are large, the staff are working to maximize existing arrangements for interaction.</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>5 = The size, structure, and arrangements of the school facilitate staff proximity and interaction.</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>LC5c</td>
<td>51</td>
<td>2</td>
<td>5</td>
<td>4.31</td>
<td>.860</td>
</tr>
<tr>
<td>1 = Communication devices are not given attention.</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>3 = A single communication exists and is sometimes used to share information.</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>5 = A variety of processes and procedures are used to encourage staff communication.</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>LC5d</td>
<td>51</td>
<td>1</td>
<td>5</td>
<td>3.73</td>
<td>1.041</td>
</tr>
<tr>
<td>1 = Trust and openness do not exist among the staff.</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>3 = Some of the staff are trusting and open</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>5 = Trust and openness characterize all the staff.</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>LC5e</td>
<td>51</td>
<td>1</td>
<td>5</td>
<td>4.06</td>
<td>.904</td>
</tr>
<tr>
<td>1 = Staff are isolated and work alone at their task.</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>3 = Caring and collaboration are inconsistently demonstrated among the staff.</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>5 = Caring, collaborative and productive relationships exist among all the staff.</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Valid N (listwise)</td>
<td>50</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
Reliability Statistics

Reliability statistics for both surveys were run using Cronbach’s Alpha. Reliability was at acceptable levels and the results were comparable to the original statistics for each survey. Reliability statistics for the Collective Efficacy Short Form survey for the sample data using Cronbach’s Alpha 2 was 0.87 on all 12 items compared to 0.94 for the original 21-item Goddard (2002) scale.

Reliability statistics for the School Professional Staff as Learning Community Survey using Cronbach’s Alpha was 0.95 for the sample data on all 17 items of the survey as compared to 0.94 on the Hord et al. (1999) scale.

Research Questions

1. Does the presence of characteristics of an effective learning organization correlate with the level of collective efficacy within a school?

Pearson’s correlation coefficient tests were used to explore the relationship between effective learning communities and collective efficacy. Statistically significant correlations were found between the Collective Efficacy Scale (CES--the mean of items 1-12 with negative items reversed) and the School Professional Staff as Learning Community Survey (LCS) at the .01 level (r=.476, p=0.000). Table 12 presents a summary of the correlation data for the CES total and LCS total and subscales. The CES total and LCS subscales 2, 3, and 4 were significant at the 0.05 level (r=0.293, p=0.037; r=0.341, p=0.014; r=0.296, p=0.035, respectively). The CES total, LCS subscale 5, and LCS total were statistically significant less than the 0.01 level (r=0.580, p<0.01).
Table 12

**Collective Efficacy Scale Total and LCS Subscale Correlations**

<table>
<thead>
<tr>
<th>LCS Subscale</th>
<th>Pearson Correlation</th>
<th>Sig. (2-tailed)</th>
</tr>
</thead>
<tbody>
<tr>
<td>LC1 (average LC1a, LC1b)</td>
<td>.138</td>
<td>.334</td>
</tr>
<tr>
<td>LC2 (average LC2a, LC2b, LC2c)</td>
<td>.293*</td>
<td>.037</td>
</tr>
<tr>
<td>LC3 (average LC3a, LC3b, LC3c, LC3d, LC3e)</td>
<td>.341*</td>
<td>.014</td>
</tr>
<tr>
<td>LC4 (average LC4a, LC4b)</td>
<td>.296*</td>
<td>.035</td>
</tr>
<tr>
<td>LC5 (average LC5a, LC5b, LC5c, LC5d, LC5e)</td>
<td>.580**</td>
<td>.000</td>
</tr>
<tr>
<td>LC_total (average LC1a-LC5e)</td>
<td>.476**</td>
<td>.000</td>
</tr>
</tbody>
</table>

Listwise N=51

*Note.* *. Correlation is significant at the 0.05 level (2-tailed).
** Correlation is significant at the 0.01 level (2-tailed).

2. Is there a relationship between effective learning organization characteristics, collective efficacy, and student achievement?

Pearson’s correlation coefficient tests were used to analyze the relationship among collective efficacy, professional learning communities, and student achievement.

For the purpose of this study, the Colorado Student Assessment Program (CSAP) was
used to measure student achievement by specifically examining the Colorado Growth Model. Averages for student growth percentiles for reading, writing, and math were used to compare the CES Total and the LC Total (see Table 13). Correlation findings were not statistically significant.

Table 13

**Collective Efficiency Scale, Professional Learning Community, and Colorado Student Assessment Program Correlations**

<table>
<thead>
<tr>
<th></th>
<th>Math</th>
<th>Reading</th>
<th>Writing</th>
<th>CE Total</th>
<th>LC Total</th>
</tr>
</thead>
<tbody>
<tr>
<td>Math</td>
<td>Pearson Correlation</td>
<td>1</td>
<td>.662**</td>
<td>.536**</td>
<td>-.175</td>
</tr>
<tr>
<td></td>
<td>Sig. (2-tailed)</td>
<td>.000</td>
<td>.001</td>
<td>.316</td>
<td>.334</td>
</tr>
<tr>
<td>Reading</td>
<td>Pearson Correlation</td>
<td>.662**</td>
<td>1</td>
<td>.647**</td>
<td>-.273</td>
</tr>
<tr>
<td></td>
<td>Sig. (2-tailed)</td>
<td>.000</td>
<td>.000</td>
<td>.112</td>
<td>.589</td>
</tr>
<tr>
<td>Writing</td>
<td>Pearson Correlation</td>
<td>.536**</td>
<td>.647**</td>
<td>1</td>
<td>-.098</td>
</tr>
<tr>
<td></td>
<td>Sig. (2-tailed)</td>
<td>.001</td>
<td>.000</td>
<td>.577</td>
<td>.767</td>
</tr>
</tbody>
</table>

*Note. * Correlation is significant at the 0.05 level (2-tailed).

** Correlation is significant at the 0.01 level (2-tailed).

To further explore the relationship among student achievement and both CE Total and LC Total, scatter plots and bar graphs were generated using the data collected. Both graphs were generated to explore patterns at the teacher level; neither graph revealed discernable patterns.

**Summary**

This study investigated data gathered by administering a survey assessing teachers’ perceptions of their schools as effective learning communities and the level of
collective efficacy-- the perception that their school faculty could accomplish school goals. There were a total of 53 participants from 17 schools.

The first research question examined the correlation between teachers’ perceptions of their school as professional learning communities and their perceptions of the level of collective efficacy within their school faculty. Results revealed a statistically significant, positive correlation between these two constructs.

The second research question investigated the impact of teachers’ perceptions of collective efficacy and their perceptions of their school faculty as effective professional learning communities on student achievement as measured by the Colorado Student Assessment Program (CSAP) by specifically examining the Colorado Growth Model. Pearson’s correlation tests were used to analyze the relationship between math, reading, and writing CSAP student median growth percentiles, the CE Total and the LC Total. No statistically significant correlations between student achievement and CE or LC were found.

Chapter 5 concludes this research study with a summary of the findings, discussion, and conclusion. It includes limitations of the study, considerations for school administrators, and recommendations for further research.
Chapter 5: Summary, Discussion and Conclusions

Introduction

Chapter 5 presents a summary of the study, conclusions from data analysis presented in Chapter 4, a discussion of implications for action, and recommendations for further research.

Summary of the Study

Overview of the study. The current economic climate has stimulated a resurgence of school reform measures within the United States. During the Bush administration, legislation such as No Child Left Behind 2001 (U.S. Department of Education, 2002) generated a mandate for performance-based accountability systems to provide our children with the skills they would need to be globally competitive.

Friedman (2005) explained that the world has changed in important ways. Globalization equalized the playing field; many countries now compete with the United States for what Friedman termed knowledge work—intellectual work that is being outsourced to third world countries at a much reduced cost.

According to the National Center of Education Statistics (U.S. Department of Education, 2007), students within the United States are lagging behind other countries in mathematics and science, another factor stimulating a resurgence of school reform. School reform mandates set forth in the No Child Left Behind (U.S. Department of Education, 2002) legislation call for performance-based accountability systems through
high-stakes testing that increase pressure on public schools to guarantee increased student achievement for all students. Elmore (2005) says, “To succeed, school reform must happen from the inside out” (p. 3). He further noted that the smallest unit in the educational system should be the focus--the classroom or school level. Educational researchers have studied characteristics of effective schools in an effort to address school improvement. In copious studies of effective schools, collective efficacy and learning communities were found to increase student achievement (Bandura, 1997; Goddard, 2001; Hoy et al., 2002). Professional learning organizations research has also shown to improve student learning (DuFour & Eakers, 1998; Hord & Sommers, 2008; Roy, 2010).

**Purpose statement and research questions.** The purpose of this research was to examine the relationship between collective efficacy (CE) and schools as effective professional learning communities (PLC) as perceived by fourth and fifth grade teachers within a large suburban school district located near Denver, Colorado. This relationship was further explored to determine if there was a related impact on student achievement as measured by the Colorado Student Assessment Program (CSAP), specifically the Student Growth Model, in reading, writing, and math. A survey assessing teacher perceptions of both CE and PLC was administered during January to April of 2010; the CSAP data analyzed were administered in the spring of 2009.

A review of the literature was conducted to gain a thorough understanding of collective efficacy, professional learning communities, effective schools research, and the Colorado Student Assessment Program’s Student Growth Model to build a foundational basis for this study. “Collective efficacy is defined as a group’s shared belief in its
conjoint capabilities to organize and execute the courses of action required to produce
given levels of attainments” (Bandura, 1997, p. 477). Characteristics of effective
professional learning communities include shared beliefs, values, and vision; shared
supportive leadership; collective learning and its application; supportive conditions; and
shared personal practice (Hord & Sommers, 2008). It is important to note that the terms
learning community (LC) and professional learning community (PLC) are used
interchangeably throughout this discussion. The review of the literature provided
background knowledge in the development of the following two research questions.

1. Does the presence of characteristics of an effective learning organization correlate with the level of collective efficacy within a school?

2. Is there a correlation between effective learning organization characteristics, collective efficacy and student achievement?

**Methodology.** A correlational research design was chosen to investigate the
correlation between collective efficacy (CE) and professional learning communities
(PLC) and the impact the correlation had on student growth. Two questionnaires were
combined to collect data: (a) the Collective Efficacy Short Form (Goddard, 2002) was
used to collect data on teachers’ perceptions of their school’s ability to accomplish school
goals and (b) the School Professional Staff as Learning Community (Hord et al., 1999)
was used to collect data on teachers’ perceptions of their school as an effective learning
community.

The school district where this study took place had 40 elementary schools at the
time the questionnaire was administered. Elementary schools with an administrator who
had been the principal for a minimum of two years were eligible to participate in the
study. This criterion helped mitigate possible confounding variables that could occur due to an initial disequilibrium in school culture with a new administration. This resulted in 26 eligible schools, 17 of which chose to participate in the study.

Fourth and fifth grade teachers who had taught two consecutive years in their current grade and school from each of the 17 schools were invited to participate in the study. Fifty-three teachers completed the online questionnaire. CSAP growth data for each fourth and fifth grade teacher were provided by the school district.

Analysis using the quantitative data collected from the questionnaire and student growth data was conducted using Statistical Package for the Social Sciences (SPSS). Correlational and descriptive analyses were completed and described in Chapter 4.

Summary of Findings

This summary of findings includes a discussion of the results and how the findings are related to the literature for each research question.

1. Does the presence of characteristics of an effective learning organization correlate with the level of collective efficacy within a school?

An important finding of this study was that the Pearson’s correlation tests revealed a correlation between collective efficacy (CE) and learning communities (LC) at 0.476 with a significance level of .000. This significance level indicated that the correlation did not occur by chance. Figure 2 shows the correlation for CE and each of the five dimensions of LC as well as the Total LC. As the average correlation between CE and LC increased, so did the significance level.
Figure 2. Collective efficacy and learning community total R correlations.

The results show that teachers in this study had positive perceptions of their school faculties’ capability to attain goals, i.e., most teachers had a positive sense of collective efficacy. Figure 3 shows the mean for each of the 12 items on the Collective Efficacy Scale Short Form (Goddard, 2002). Items were either positively or negatively worded with responses ranging from 1=Strongly Agree to 6=Strongly Disagree. An example of a positively worded item was “Teachers here are confident they will be able to motivate their students.” An example of a negatively worded item was “If a child doesn’t want to learn, teachers here give up.” A low average for a positively worded statement indicated agreement; whereas, a high average for a negatively worded item was disagreement but reflected a positive belief in the capabilities of their colleagues. Item 7, “Home life provides so many advantages that students here are bound to learn,” was neutral, possibly because it was a variable over which teachers had no control (see the combined questionnaire in Appendix 1 for a listing of all items).
Figure 3. Collective efficacy mean.

The School Professional Staff as a Learning Community questionnaire contained 17 items with a response scale from 1-5 where 1 was low, 3 was medium, and 5 was high. It included five dimensions of learning communities (see Appendix 1 for a listing of all 17 items). Figure 4 displays the mean for teacher perceptions of all 17 items. The mean score for 11 items in dimensions LC1, LC2, LC3, and LC5 were all at or above 4, reflecting a higher average. The mean for three of the items scored at above 3 but not quite 4, reflecting a medium or average score. Dimension LC4 was the only area to receive scores below 3, which was considered low.

Figure 4. Learning community means.
Both the CE and LC means were above average and the correlation between CE and LC was found to be significant, which satisfies Question 1.

**Question 1: Discussion.** Research supported the findings for Question 1. The Southwest Educational Development Lab (SEDL) took part in a three year longitudinal study, Creating Communities of Continuous Inquiry and Improvement (CCCII; Hord, 2004). This study investigated five schools that were reported to have characteristics of effective professional learning communities. Hord and the researchers at SEDL used the five dimensions of learning communities (Hord, 1997) to guide the selection of those five schools. The CCCII study supported findings of the correlation between LC and CE found in this study. A common trend in the literature was that principal leadership practices played an integral part within each dimension of effective learning communities. Fleming (1999) concurred, “One of the keys to the existence of PLCs is the administrator” (p. 1). Leadership actions by the principal contributed to shaping culture within the school that was conducive to developing a learning community. Each dimension of learning communities and how it contributed to enhancing efficacy is discussed in the next section.

Two items--LC1a and LC2b--assessed the first dimension: LC1--School administrators participate democratically with teachers sharing power, authority, and decision making. Hord (2004) described this dimension as “supportive and shared leadership” as it assessed the level to which an administrator included their staff in the decision making process. The responses asked participants to rate their perceptions for these items using the following ranges: 1--administrators never involve staff in decision
making, 3--administrators invite advice from the staff and then make their own decisions as a midpoint, and a rating of 5--the administrator consistently involves staff in discussing and making decision about most school issues (Hord, 2004; Hord et al., 1999; Hord & Somers 2008). The correlation between collective efficacy and dimension LC1 was not significant in this study. This finding was inconsistent with the literature on shared leadership via decision making and collective efficacy, indicating a connection between these two constructs (Bandura, 1993; Goddard, 2002; Wahlstrom & Louis, 2008). The mean score for teacher responses LC1a was 4.13 and LC1b was 3.91, indicating that principals sought input on the decision making process but made the final call. Given the history of site-based decision making within the school district where the study took place, there could be a misunderstanding of the teacher’s role in shared decision making. The responses indicated that at most schools, teachers were involved in the decision making process by representation but the final decision was made by the principal. This level of input might be the teachers’ understanding of site-based decision making because it had been their only experience where there was still a dependency on the principal to be the expert and make the final call. Teachers might be dependent on the principal telling teachers what to do. Moving a school toward a shared decision making model is a paradigm shift and can be misunderstood as indecisiveness on the part of the principal unless the staff explores the value of shared leadership. A school cannot become a true learning organization without the presence of shared decision making. This was a limiting factor within this study, resulting in inconsistent results compared to the literature. In education, we define collective efficacy as a teacher’s perception that the
school faculty can accomplish their goals. Principals play a critical role in increasing teachers’ sense of collective efficacy through psychological empowerment by involving teachers in the decision making process.

The second dimension of learning communities was LC2--Shared visions for school improvement have an undeviating focus on student learning and are consistently referenced for the staff’s work. There was a significant correlation between LC2 and collective efficacy at $r=.293$ with $p > .037$. Numerous educational researchers have documented the importance of creating a shared vision involving all stakeholders within the school community (Bolman & Deal, 2002, 2003; Covey, 1989; DuFour & Eaker, 1998; Hord, 1997; Kotter, 1996; Kouzes & Posner, 2002; Marzano, 2003; Schmoker, 1999; Senge, 1990; Senge et al., 2000; Sergiovanni, 2000; Tedlile & Reynolds, 2000). As DuFour and Eaker (1998) stressed, the foundation of a professional learning community is the creation of a meaningful and achievable shared vision. It provides individuals with direction. Covey (1989) said it allowed individuals to “begin with the end in mind” (p. 97). A vision provides individuals with a purpose to strive toward on a daily basis. In a learning community, this vision provides the basis upon which all educational decisions are made. It is the principal’s role to generate a process for the development of a shared vision and keep that vision in the forefront of all decisions made (Hord, 2000). A clear purposeful vision may create the moral imperative to take actions to realize that vision by first examining and articulating the shared values and then defining specific goals crafted to actualize the vision. In a learning community, the vision should be focused on students and teaching and learning. It should also focus on
high expectations and quality learning for all students (Hord, 2000). When teachers are involved within this process, it creates ownership and a deep understanding of the work that must be accomplished. It establishes an internal accountability for achieving the vision. Shared values, vision, and goals are at the heart of the learning community. Rosenholz (1989, as cited in Goddard, 2003) said, “Principals who facilitate networks among teachers to exchange ideas about the best way to reach school goals, who accomplish school goals, who themselves help teachers accomplish goals, orient them to the school as a collective endeavor” (p. 15). The findings in this study concurred with the literature.

The findings revealed that item LC2b--Visions for improvement are always focused on students and teaching and learning--received the highest mean score (4.57), indicating that participating schools possessed visions that were focused on all students and the process of teaching and learning. Hord (2000) purported that a core characteristic of learning communities is an undeviating focus on learning for all students and teaching and learning, which was evident in the findings of this study.

Findings for the third dimension LC3--Staffs’ collective learning and application of learning create high intellectual learning tasks and solutions to address student needs--showed a significant correlation with collective efficacy at \( r = .341 \ p > .014 \). LC3 included five items that assessed whether faculties:

- met frequently and regularly to discuss issues, share information, and learn with and from each other;
- discussed student-centered educational issues and discussed the quality of their teaching and student learning;

63
• made plans and implemented plans based on the needs of students, teaching, and more successful student learning; and
• debriefed and assessed the impact of their decisions (Hord, 1997).

Participants responded to each of these items on a continuum of 1 to 5: 1--never meeting, discussing non-teaching issues and lack of action to a rating of 5--staff always meet, learn with and from each other, take action, and assess themselves. The mean score for each item was above 3 but was closer to 4, indicating that most schools engaged in these activities at some level but not fully or consistently.

Literature on collective learning and collective efficacy concurred with the findings of this study. Fleming (1999) and Hord (2000) noted that in a professional learning community, the teachers and administrators are actively involved in gathering information, making decisions, and implementing those decisions. In many schools, collective learning included several of the above characteristics but varied in strength depending upon the specific school. It was common to hear the term PLC mistakenly referred to as a team of teachers, or a specific grade level, or simply a book study group rather than the PLC being an entire school where “teachers are involved in learning and sharing that new knowledge with each other” (Fleming, 1999, p. 2) and includes all members of the faculty. DuFour and Eaker (1998) purported that developing a collaborative environment was the most important factor and was considered the “first order of business” in developing a learning community (p. 117). They described this environment as a place where teachers participated in reflective dialogue, developed curriculum, and assessed their practices, and shared lessons and materials.
In this study, LC3 was developed with the concept of collective learning based on the idea that collaborative environment includes learning and sharing new knowledge. Professional learning communities are continuously engaged in learning and improving practice; it is a community that “keeps abreast of developments and updating practice is continuous learning” (Mupepi, Mupepi, Tenkasi, & Sorensen, 2006, p. 3). Senge (1990) used the term *team learning* for collective learning where teachers work in concert toward aligned goals, move in a common direction, and use dialogue to surface and address assumptions. Schmoker (1999, 2006) highlighted the value of teamwork that included three foundational concepts: informed effective teamwork, goal setting, and use of performance data.

The amount of effort a team exerts toward working together to reach common goals is correlated to the perception of collective efficacy—the perception of the conjoint capability of the school faculty. “The link between performance and efficacy is direct and powerful. Analogous to self-efficacy, collective efficacy is associated with the tasks, level of effort, persistence, shared thoughts, stress levels, and achievement of groups” (Goddard et al., 2000, p. 184). If a teacher or a school has a low perception of collective efficacy, it could inhibit the amount of effort put forth for collaborative learning; low perceptions of collective efficacy can contribute to teacher isolation. Goddard et al. (2000) posit that perceptions of collective efficacy are an indicator of the strength and resolve within the school. “Collective efficacy requires collective work and collective norms, not just individual understandings” (City, Elmore, Fiarman, & Teitel, 2008, p. 165).
Wahlstrom and Louis (2008) surveyed 4165 teachers in grades K-12 and examined the relationship of shared-leadership and professional community. Their study examined teacher-teacher interactions and teacher-principal interactions and their impact on classroom instruction. When teachers were provided time for sustained collaboration, “it enabled the social construction of meaning and shared norms and values among teachers” (Wahlstrom & Louis, 2008, p. 463). Their findings supported the importance of team learning. They also found that the presence of a PLC was enhanced through collective learning when supported by principal leadership. Principal leadership is vital to developing and sustaining a collaborative environment (Dufour & Eaker, 1998; Hord, 2004; Wahlstrom & Louis, 2008).

The fourth dimension of professional learning communities examined in this study was LC4: Shared Personal Practice--Peers review and give feedback based on observing each other’s classroom behaviors in order to increase individual and organizational capacity. The findings revealed a significant correlation between shared personal practice and collective efficacy at $r = .296$ and $p > .035$. This dimension had two items--LC4a and LC4b. LC4a examined how frequently staff visited and observed each other’s classroom; responses ranged from frequently to inconsistently to never. The mean score for LC4a was 2.75, indicating that teachers rarely visited and observed one another teaching.

LC4b examined whether staff provided feedback to each other about teaching and learning based on their classroom observations. Responses ranged from providing feedback about teaching and learning after classroom observations to no interaction after
classroom observations. The mean score for LC4b was 2.92. These findings were consistent with SEDL (Hord, 2004) research that examined five schools using the School Staff as Professional as Learning Community questionnaire where shared personal practice was also found to be the last dimension to develop in schools, if present at all.

Literature supported the finding of the correlation between collective efficacy and shared personal practice (Bandura, 1993; City et al., 2008; Hord, 1997; Hord & Sommers, 2008; Teddie & Reyonolds, 2000). City et al. (2008) found that “repeated practice of instructional rounds creates collective efficacy among teachers and administrators around student learning, and collective efficacy is strongly related to student learning in schools” (p. 168). The term *instructional rounds* is similar to Hord’s (2004) explanation of shared personal practice that involved teachers visiting each other’s classrooms and providing feedback about teaching and learning to increase the individual’s teaching capacity. It involved sharing of tacit knowledge that might otherwise go unnoticed by the more prevalent model of teacher isolation. Trust and relationship building between teacher to teacher and teacher to principal is essential to the development of shared personal practice. “Because of the amount of trust involved and the history of isolation most teachers have experienced, this is often the last dimension of a PLC to develop” (Hord, 2004, p. 11).

Promoting a school culture where teachers reflect on their practice and one that continually seeks to improve instructional practices is at the heart of shared personal practice. It is the principal’s role to develop a school “environment that values and supports hard work, the acceptance of challenging tasks, risk taking, and the promotion of
growth” (Midgley & Wood, 1993, as cited by Hord, 2004, p. 252). A collaborative culture that has developed shared personal practice empowers teachers to work as “change agents” through regular and frequent interaction with colleagues to focus on teaching and learning.

Principals who promote shared personal practice engage their staff in reflective conversations focused on learning. Hord (2004) called these conversations learning conversations. Learning conversations create more effective schools when teachers engage in a practice called peers helping peers and there is frequent reviewing of teachers’ practice by colleagues, similar to peer coaching. City et al. (2008) described this process as networking to improve practice. These conversations occurred at the classroom level where “the classroom learning level has maybe two or three times the influence on student achievement than the school level does” (Creemers, 1994, as cited in Teddlie & Reynolds, 2000, p. 217.) Although there are studies that have shown a correlation between shared personal practice and collective efficacy, it is often the last feature of a professional learning community to develop. Principals who value the development of a functioning, effective PLC must create the structures and provide the resources needed to support shared practice.

Findings for the fifth dimension (LC5: Supportive Conditions--Conditions and capacities support the school’s arrangement as a professional learning organization) revealed a significant correlation to collective efficacy at $r=.580, p > .000$. The survey included five items for assessing supportive conditions. LC5a examined the time available for the staff to meet and interact. Responses ranged from 5 to 1: 5 indicated
that time was arranged for whole group interaction; a 3 indicated that time was arranged but staff frequently failed to meet; and a 1 indicated that staff could not arrange time for interacting. The mean score for LC5a was 4.43, indicating that staff in this study met regularly.

Item LC5b examined the size, structure, and arrangements within the school that supported staff interaction. Again the responses ranged from 5 to 1; 5 indicated the optimal use of the facility to encourage staff interaction. The mean score for item LC5b was 4.10, reflecting that at most participating schools regardless of the size of the facility and membership, the staff worked to maximize structures to support teacher interaction.

Item LC5c examined processes and procedures that existed to encourage staff communication. Item responses ranged from 5 to 1: 5—*a variety of processes and procedures are in place to encourage staff interaction* to a 1—*no communications devices are available to support teacher interaction*. The mean score for LC5c was 4.31, indicating that at most schools in this study, there was at least one communication device available to staff.

Item LC5d examined the level of trust and openness within the school setting. Responses ranged from a 5—*trust and openness with all staff* to a 1—*trust and openness do not exist*. The mean score of 3.73 reflected teachers in this study believed some staff were trusting and open but not all.

Item LC5e examined whether caring and collaborative relationships characterized the staff. Responses ranged from a 5—*a staff where relationships are caring, collaborative and productive among all staff* to a 1—*the staff are isolated and work alone*. 

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The mean score of 4.06 demonstrated that teachers’ perceptions of relationships within their school were caring and collaborative but not among all staff.

The significant findings for LC5 in this study concurred with literature on supportive conditions and collective efficacy. Conditions that support learning communities included both physical and logistical resources: time set aside for collaboration, structures and systems that intentionally build schedules promoting interaction among staff, effective communication systems, and rituals that support the development of trusting relationships. This dimension of learning communities has a huge impact on the effectiveness of any organization and was supported by studies on effective schools, learning organizations, and social cognitive theory (Bandura, 1995; Bolman & Deal, 2002, 2003; DuFour & Eaker, 1998; Hord, 1997, 2004; Kouzes & Posner, 2002; Marzano et al., 2005; Sergiovanni, 1990, 2000; Teddlie & Reynolds, 2000). “Effective teams are characterized by trust resulting in open communication, mutual respect for people and opinions, and willingness to participate” (DuFour & Eaker, 1998, p. 120). DuFour and Eaker proposed three Cs for effective learning communities—communication, collaboration, and culture—which when compared closely are embedded within the five components of Hord’s (1997) fifth dimension of learning communities. Teachers need time for collaborating with colleagues, learning and growing in their roles as educators that are dependent upon careful consideration and allocation of resources. Examining the structures to ensure staff interaction can deter the old paradigm of teacher isolation. Teacher isolation and lack of time for collaboration can diminish the capacity for shared leadership and shared practice. Strong principal leadership practices that
support collaboration and foster collective efficacy are crucial to developing and sustaining learning communities within the school setting.

Marzano et al. (2005) conducted a meta-analysis study on school leadership and developed a plan of action to support school leaders. They named 21 principal responsibilities as a result of their research and identified nine principal responsibilities needed for the development of a purposeful community. A purposeful community is defined as “one with the collective efficacy and capability to develop and use assets to accomplish goals that matter to all community members through agreed-upon processes” (Marzano et al., 2005, p. 99).

According to Marzano et al. (2005), two principal responsibilities that develop collective efficacy are optimizer and affirmation. As an optimizer, the principal is a cheerleader or champion who instills the belief that the staff can work as a group to effect change. The second principal responsibility named by Marzano et al. is affirmation that involves recognizing and celebrating successes by individual teachers and the school as a whole. The acknowledgment of success serves as evidence upon which perceptions of efficacy can grow. Both of these principal responsibilities are related to the supportive conditions described in Hord’s (1997) fifth dimension of learning communities and Bandura’s (1986, 1995, 1997) efficacy-shaping sources.

Bandura (1986, 1995, 1997) identified four efficacy shaping sources that can guide school leaders in enhancing collective efficacy within their staff. Table 14 presents a matrix that illustrates how collective efficacy, dimensions of learning communities, and principal leadership practices correlate with one another.
Mastery experiences are the result of experiencing success directly or at the “organizational level, mastery experiences are past performances of the collective” (Adams & Forsyth, 2006, p. 631). Studies have shown that knowledge of previous academic achievement impacts collective efficacy (Bandura, 1997; Goddard et al., 2000; Goddard & Skrla, 2006). Examples of mastery experiences within a school setting can be examining student work, standardized test scores, or student performance on school-based assessments. Principal leadership practices that intentionally acknowledge and celebrate both individual and group successes can lead to increased collective efficacy. Providing teachers with the opportunity to share student work, videotape themselves teach, or obtain specific feedback regarding their teaching can also enhance collective efficacy. Mastery experience is the dominant source of efficacy information (Bandura, 1997).

Vicarious experience is another efficacy-shaping source (Bandura, 1993). Collective efficacy is strengthened by “directly observing successful individuals and organizations, especially those that attain similar goals in the face of familiar opportunities and obstacles” (Goddard & Skrla, 2006, p. 218). Faculties who observe positive outcomes achieved by schools similar to them experience greater collective efficacy. These similarities can be teaching tasks, grade level, and school demographics or backgrounds. Vicarious experiences can occur during a variety of staff development opportunities: presentations by experts in the field, observing their peers in the classroom, visiting effective schools, reading articles, viewing videotapes, or watching themselves teach. Collaborative learning through vicarious experiences is a form of observational
learning--a powerful collective efficacy shaping tool. Studies found that principals play an important role in allocating time for teachers to meet and providing increased opportunities for job-embedded professional development (Wahlstrom & Louis, 2008). School leadership practices that develop the structures for teachers to discover and study effective classroom practices and apply them within the school setting have a positive impact on collective efficacy.
<table>
<thead>
<tr>
<th>Collective Efficacy Shaping Source</th>
<th>Dimensions of Learning Communities</th>
<th>Principal Leadership Practices</th>
</tr>
</thead>
</table>
| Mastery Experience: Belief that one has been successful in a task | • LC3 Collective Learning & Collaboration  
• LC4 Shared practice  
• LC5b | •Staff development;  
• role playing  
• micro teaching with specific feedback  
• Public celebrations of accomplishments |
| Vicarious Experience: Positive skills are modeled by someone else who is similar to themselves | • LC2 Shared vision  
• LC3 Collective Learning & Collaboration  
• LC4a & b Shared practice, celebrating success, feedback | Allocating resources for observation of successful models through:  
• staff development  
• experts in the field  
• articles  
• videotapes  
• visiting effective schools  
• videotaping themselves |
| Verbal Persuasion: Expressing belief in capabilities; evaluative feedback | • LC1a & b Decision making  
• LC2 Shared vision  
• LC3 Collective learning/Collaboration  
• LC4 Shared practice  
• LC5a Interaction with colleagues  
• LC5b Managing the facility for interaction with peers  
• LC5c Communication devices  
• LC5d Building trust & openness | • Reinforcement through feedback  
• Monitoring  
• Observations and feedback walkthroughs with feedback  
• Opportunities to observe peers |
| Affective States: School climate & culture; relationships | • LC1 Shared decision making  
• LC2 Shared Vision  
• LC5c Communication devices  
• LC5d Building trust & openness  
• LC5e Collaborative and caring relationships in the building | • Model positive behaviors  
• Promoting a positive school climate  
• Protecting teachers from distractions and stressors |
Social or verbal persuasion is another collective efficacy-shaping source correlated to learning communities and principal leadership practices. Collective efficacy is increased when teachers are influenced by leaders who develop a vision for success and instill the belief in their staff that as a collective group they can make a difference. Including the staff in the decision making process builds trust between the teachers and the principal as well as between teachers by developing structures that support a school’s collective responsibility. Developing norms of expected group behaviors is also a component of verbal persuasion as demonstrated by the pushing and prodding by colleagues and administrators, messages teachers receive during professional development activities, feedback from superiors, and even conversations in the faculty lounge (Jerald, 2007).

Collective efficacy can also be shaped by the affective states of the staff. According to Pajares (1997), the affective state of a staff is evidenced by the climate or atmosphere of the building. It can be impacted by the level of stress or anxiety within the building and can be a determining factor of how an organization can withstand pressure and stress when faced with obstacles. Pajares purported that affective states of a school can be evidenced by comments from visitors such as a school having a “can-do” attitude or a positive climate. Collective efficacy exercises an “empowering and vitalizing” influence on its constituents (Pajares, 1997, p. 36). School leaders must continually monitor the climate of the building and protect the staff and students from distractions and stressors. Relationships among the staff are more valuable to an organization than the specific structures; the outcome of positive social interactions is collective efficacy.
(Adams & Forsyth, 2006). Principals must model positive behaviors that promote a belief in the conjoint capability of the staff that they can accomplish tasks and make a difference in student learning.

In this study, collective efficacy was found to be significantly correlated to the dimensions of learning communities. The second research question took the study a step further by investigating how perceptions of collective efficacy and professional learning communities correlate to student achievement.

2. Is there a correlation between effective learning organization characteristics, collective efficacy, and student achievement?

Pearson’s correlation coefficient test was used to analyze the relationship among collective efficacy, professional learning communities, and student achievement. The school district of interest provided student achievement data from the Colorado Student Achievement Program (CSAP) administered in the Spring of 2009. CSAP student growth data were analyzed at the teacher level using the average student growth data for reading, writing, and math for each fourth and fifth grade teacher who participated in the study. The data were examined for correlations by academic area of teacher perceptions of collective efficacy (CETotal) and professional learning communities (LCTotal). The findings were not statistically significant for correlations between collective efficacy and math, reading, or writing: Math/CETotal, \( r = -0.175 \) and \( p > 0.317 \); Reading/CETotal, \( r = -0.273 \) and \( p > 0.112 \); Writing/CETotal, \( r = -0.098 \) and \( p > 0.577 \). Likewise, findings were not statistically significant for correlations between professional learning communities and math, reading, or writing: Math/LCTotal, \( r = 0.168 \) and \( p > 0.334 \); Reading/LCTotal, \( r = 0.357 \) and \( p > 0.147 \); Writing/LCTotal, \( r = 0.273 \) and \( p > 0.112 \).
= .095 and \( p > .589 \); Writing/LCTotal, \( r = .052 \) and \( p > .767 \). Therefore, the findings did not satisfy question 2.

**Question 2: Discussion.** The findings were not consistent with the literature on the relationship between collective efficacy and student achievement. Numerous studies have found significant correlations between collective efficacy and student achievement (Bandura, 1993, 1997; Goddard, 2001; Goddard et al., 2000, 2004; Goddard & Skrla, 2006; Henderson et al., 1998; Ware & Kitsantas, 2007). Bandura’s (1997) study of 79 schools revealed the stronger the staffs’ shared belief in their instructional efficacy, the better schools performed academically. Goddard et al. (2004) found collective efficacy to be a predictor of student achievement in reading and mathematics and was an even better predictor of student success in schools than socioeconomic status of students. Goddard and Goddard (cited in Wahlstrom & Louis, 2008) found that a sense of collective efficacy explained much of the variation among individuals and student achievement.

Findings from effective schools research (Teddlie & Reynolds, 2000) revealed a correlation with characteristics of effective schools and student achievement. These characteristics were similar to those of professional learning communities described in research conducted by the Southwest Educational Developmental Lab (Hord, 2004). Studies conducted by SEDL as well as other researchers in the field found the presence of the characteristics of learning communities had a positive impact on student learning and achievement (DuFour & Eaker, 1998; Hord, 1997, 2004; Hord & Sommers, 2008; Marks & Louis, 1999).
There are plausible reasons that may help explain why findings in this study were inconsistent with the literature. This study did not find a correlation between collective efficacy or learning communities and student achievement. One possible explanation and a limitation of this study was the use of average growth percentiles at the individual teacher level versus the use of data at the student level. Previous studies utilized performance data based on student scores of proficient or advanced on standardized assessments and found correlations to both constructs. If student achievement data had been collected at the student level, similar results may have been found. Another possible explanation was that the growth data used in this study included the average growth percentile of students in a teacher’s classes who met their target gains for two consecutive years. This format limited the number of teachers who could participate in the study, a possible factor in the lack of consistent findings with other studies.

**Conclusion and Recommendations**

As our society evolves, public education must evolve to meet societal needs for continued prosperity. Recently, there has been a call for more accountability from public education due to student achievement on standardized assessments at the state, national, and international levels that have been lagging behind other countries (NCES, 2010). The success and progress of our nation is dependent upon public education that was founded on the idea that it is in the best interest of our nation to develop our most valuable resource--our people. The most effective methods, strategies, and school structures to educate the masses have been topics of research since public education was established. This study examined the relationship between professional learning
communities and collective efficacy within public schools. Both of these constructs have been linked to student achievement.

Correlations between learning communities and collective efficacy were confirmed in this study. This relationship was examined further by investigating the correlations of five dimensions of learning communities and collective efficacy. A consistent factor was found within each dimension--leadership practices of the school principal. “Although many factors affect whether professional community will exist in a school, one of the most significant factors is strong principal leadership” (Wahlstrom & Louis, 2008, p. 463). Strong principal leadership in the development, implementation, and maintenance of an effective learning community warrants further study.

**Recommendations for the Field**

As explained by Table 14, collective efficacy and characteristics of professional learning communities can be enhanced through specific principal leadership practices. The findings of this study supported the following recommendations:

District leaders need to develop principal leadership capacity. School leaders should be provided professional development opportunities that will develop a positive sense of principal efficacy. District leaders should be cognizant of Bandura’s (1993) four sources for developing efficacy and apply those at the principal level. For example, district leaders could provide principals with mastery experiences; evidence of success could be achievement based on standardized assessments, district assessments, or meeting the goals of individual school improvement plans. Vicarious experiences could be provided by examining successful schools similar to their own through visits or
article reviews. Social persuasion could include pushing and prodding principals toward professional development or participation in collaborative principal groups that meet to share their practice. The last efficacy source, affective states, could be applied to principal efficacy by providing principals with professional development in the area of shared leadership practices and collaboration with their colleagues as they engage in authentic work in the development of professional learning communities within their own schools. Affective states for enhancing principal efficacy could also involve emotional support through constructive feedback or participation in developing a shared vision for the district--being part of the solution and including principals in the decision making process. If principals have a sense of efficacy, i.e., a belief that they can lead their building toward accomplishing school goals, this confidence could positively impact teachers’ affective states, further increasing the collective efficacy of the school.

As confirmed in this study, collective efficacy and learning community are correlated. Thus, district level administrators should be cognizant of efficacy building opportunities, systemically beginning with the central office. Districts with a history of success (mastery experiences) instill a sense of efficacy throughout the organization. Those districts which have experienced fewer success stories should be aware of other efficacy building sources and begin developing an image of success or a “can-do” attitude in their organizations. Based on the findings of this study, the dimensions of learning organizations could be extended to a wider view of the entire organization--the district level. Developing a shared vision of what success looks like and collaborating with all stakeholders to develop goals and a path to success could be foundational
building blocks for these districts. All stakeholders within the organization must see the possibilities of future outcomes by providing them with vicarious experiences and encouraging them through social persuasion and district leaders must also be in tuned to their stakeholders’ affective states throughout the process.

As instructional leaders, principals must not only understand the dynamics of developing a learning community, but should possess an overall understanding of the theories of learning organizations. For example, the term PLC is overused and is often applied to only one dimension of learning communities--team learning. However, a team is not the total organization, thus fragmenting the organization. As the findings of this study indicated, school leaders need to understand and develop all five dimensions of effective learning communities as well as understand their roles in promoting a learning organization.

School leaders should be cognizant of their own leadership practices that support or deflate collective efficacy. Principals should first assess the level of collective efficacy within the staff and engage in targeted leadership practices that enhance efficacy among staff. As reflected within this study, the leadership practices embedded within the five dimensions of learning communities supported collective efficacy. For example, results in this study found conditions and capacities that supported a school’s arrangement as a professional learning community had the highest correlation with collective efficacy. This included developing trust and openness, providing the facilities, and arranging time for teachers to interact. These school structures should promote collaboration and communication. Principals should be cognizant of the value
placed on these structures. Therefore, it is recommended that principals be aware of the importance of their own leadership practices and structures as they develop community within their schools.

It is recommended that principals’ leadership practices support the development of shared leadership within their schools that includes the sharing of power and authority through inviting staff input and action in the decision making process. Surprisingly, this study did not reveal a significant correlation between collective efficacy and shared leadership; however, shared leadership is critical to the other dimensions of learning communities. For example, trust is needed in the development of supportive conditions that foster learning communities. When shared decision making is present, it ignites trust between school administration and staff, leading to a higher sense of personal responsibility and commitment. In turn, trust increases efficacy and intrinsic motivation, resulting in higher levels student achievement (Hord, 2004; Sergiovanni, 2000). Furthermore, school leaders must commit to becoming learners in the process of implementing shared leadership and developing the capacity of teachers as leaders. It is a paradigm shift that requires the school leader to be strategic in creation of a shared understanding of distributive leadership. This mind shift can be uncomfortable to teachers who are used to depending on principals to be the decision maker instead of a facilitator in the decision making process. Both the principal and the staff will need to develop a mutual understanding of the concepts involved in distributive leadership and develop a comfort level to engage in collegial conversations regarding school structures and the instructional core of the building. Involvement in the making decision process
can impact teachers’ sense of efficacy and community, especially when “deliberately connected to tangible and immediate problems of practice” (Elmore, 2005, p. 61).

The findings of this study indicated a correlation between collective efficacy and sharing teacher practices by observing each other teaching lessons and then reflecting on those observations. This opportunity provided teachers with both mastery and vicarious experiences. Principals and districts must allocate resources to provide for these experiences to enhance teacher efficacy and collective efficacy, both of which have been positively correlated with student achievement. As confirmed in this study, sharing teacher practice was the last dimension of learning communities to develop; it could not occur without the intentional support of both the principal and district through allocation of resources.

**Recommendations for Further Research**

The findings of this study indicated a relationship between principal leadership practices and collective efficacy and learning communities. Although studies on leadership styles and practices exist in education and other fields, little research has been conducted on whether there is a correlation between the efficacy of principals, collective efficacy of faculty, and student achievement. Research on the presence of principal efficacy does not exist. Thus, further investigation on the existence and impact of principal efficacy, leadership practices, and the related impact on student achievement would add to the knowledge base of efficacy literature.

School districts vary in size; yet each is an organization that can learn. How do the five dimensions of learning communities impact each level of the district
organization? Research has been conducted at the school level investigating the dimensions of a professional learning community, but not at the district level. Research on the correlation of learning community characteristics at the central office level and its impact on the collective efficacy of a school or district could lead to interesting findings in our work toward school improvement initiatives.
References


Henson, R. (2001, January 26). Teacher self-efficacy: Substantive implications and measurement dilemmas. Keynote address at annual meeting of Educational Research Exchange, Texas A & M University, College Station, TX.


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Appendix A

COMBINED SURVEY

School Professional Staff as Learning Community/Collective Efficacy Scale Questionnaire

School: _______________ Date: _______________
(completed by researcher)

This survey researches the perception of your school as a learning organization and the level of collective efficacy of your faculty. The results will only be used by the researcher as part of a dissertation study and responses will be confidential. By completing and returning this survey you agree to include your data in my research.

Grade Level: _______  Number of years teaching at this school: _______

Part 1: School Professional Staff as Learning Community

Directions: This questionnaire concerns your perceptions about your school 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 at the top. 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.

| 1. Descriptor: 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 staff in discussing and making decisions about most school issues. | Administrators invite advice and counsel from the staff and then make decisions themselves. | Administrators never share information with the staff nor provide opportunities to be involved in decision making. |
| 5 | 4 | 3 | 2 | 1 |
| 1b Administrators involve the entire staff. | Administrators involve a small committee, council or team of staff. | Administrators do not involve any staff. |

2. Descriptor: Shared visions for school improvement have an undeviating focus on student learning and are consistently referenced for the staff’s work.

| 2 | 4 | 3 | 2 | 1 |
2a Visions for improvement are discussed by the entire staff such that consensus and a shared vision results. | Visions for improvement are not thoroughly explored; some staff agree and others do not. | Visions for improvement do not involve any staff. | 5 | 4 | 3 | 2 | 1

2b Visions for improvement are always focused on students and teaching and learning. | Visions for improvement are sometimes focused on students and teaching and learning. | Visions for improvement do not target students and teaching and learning. | 5 | 4 | 3 | 2 | 1

2c Visions for improvement target high quality learning 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. | 5 | 4 | 3 | 2 | 1

3. Descriptor: Staff’s collective learning and application of the learnings (taken action) create high intellectual learning tasks and solutions to address student needs.

5 | 4 | 3 | 2 | 1

3a The entire staff meets to discuss issues, share information, and learn with and from each other | Subgroups of the staff meet to discuss issues, share information, and learn with and from each other. | Individuals discuss issues, share information, and learn with and from each other. | 5 | 4 | 3 | 2 | 1

3b The staff meets regularly and frequently on substantive student-centered educational issues. | The staff meets occasionally on substantive student-centered educational issues. | The staff never meets to consider substantive issues. | 5 | 4 | 3 | 2 | 1

3c The staff discusses the quality of their teaching and students’ learning. | The staff does not often discuss their instructional practices nor its influence on student learning. | Basically the staff discusses non-teaching and non-learning issues. | 5 | 4 | 3 | 2 | 1

3d The staff, based on their learnings, makes and implements plans that address students’ needs, more effective teaching, and more successful student learning. | The staff occasionally acts on their learnings and makes and implements plans to improve teaching and learning. | The staff does not act on their learning. | 5 | 4 | 3 | 2 | 1
<table>
<thead>
<tr>
<th>3e</th>
<th>The staff debriefs and assesses the impact of their actions and makes revisions.</th>
<th>The staff infrequently assess their actions and seldom makes revisions</th>
<th>The staff does not assess their work.</th>
</tr>
</thead>
</table>

4. **Descriptor:** Peers review and give feedback based on observing each other’s classroom behaviors in order to increase individual and organizational capacity.

<table>
<thead>
<tr>
<th></th>
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<tbody>
<tr>
<td>4a</td>
<td>Staff regularly and frequently visit and observe each other’s classroom teaching.</td>
<td>Staff occasionally visit and observe each other’s teaching</td>
<td>Staff never visit their peers’ classrooms.</td>
<td></td>
<td></td>
</tr>
<tr>
<td>4b</td>
<td>Staff provide feedback to each other about teaching and learning based on their classroom observations.</td>
<td>Staff discuss non-teaching issues after classroom observations.</td>
<td>Staff do not interact after classroom observations.</td>
<td></td>
<td></td>
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</table>

5. **Descriptor:** Conditions and capacities support the school’s arrangement as a professional learning organization.

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<th>3</th>
<th>2</th>
<th>1</th>
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</thead>
<tbody>
<tr>
<td>5a</td>
<td>Time is arranged and committed for whole staff interactions.</td>
<td>Time is arranged but frequently staff fails to meet</td>
<td>Staff cannot arrange time for interacting.</td>
<td></td>
<td></td>
</tr>
<tr>
<td>5b</td>
<td>The size, structure, and arrangements of the school facilitate staff proximity and interaction</td>
<td>While the facility and school membership are large, the staff are working to maximize exiting arrangements for interactions.</td>
<td>The staff takes no action to manage the facility and personnel for interaction.</td>
<td></td>
<td></td>
</tr>
<tr>
<td>5c</td>
<td>A variety of processes and procedures are used to encourage staff communication.</td>
<td>A single communication exists and is sometimes used to share information.</td>
<td>Communication devices are not given attention.</td>
<td></td>
<td></td>
</tr>
<tr>
<td>5d</td>
<td>Trust and openness characterize all the staff.</td>
<td>Some of the staff are trusting and open.</td>
<td>Trust and openness do not exist among the staff.</td>
<td></td>
<td></td>
</tr>
<tr>
<td>5e</td>
<td>Caring, collaborative and productive relationships exist among all the staff.</td>
<td>Caring and collaboration are inconsistently demonstrated among the staff.</td>
<td>Staff are isolated and work alone at their desk.</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
### Part 2: Collective Efficacy Scale

Please read carefully. Circle the number that indicates the strength of your agreement for the statements below.

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