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Improving Student Achievement Through Professional Learning Communities

by

Mindy Roberts

A DISSERTATION

Presented to the Faculty of

The Graduate College at the University of Nebraska

In Partial Fulfillment of Requirements

For the Degree of Doctor of Education

Major: Educational Administration

Under the Supervision of Professor Jody Isernhagen

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Improving Student Achievement Through Professional Learning Communities

Mindy Roberts, Ed.D.

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Adviser: Jody Isernhagen

This study determined how general education teachers in a Midwestern school district perceived their personal skill level in working collaboratively and focusing on academic results while working in a Professional Learning Community (PLC). The overarching question for the research was: Do educator perceptions of their personal skill level in working collaboratively and focusing on academic results while implementing a Professional Learning Community have an effect on student achievement? The study looked at teacher perceptions within the three themes of PLCs: (a) assuring students learn at high levels, (b) creating a culture of collaboration, and (c) focusing on academic results. Student achievement data, reported through Criterion Referenced Test scores (CRTs) and linked to individual teacher survey responses, were studied to determine if a relationship existed between teacher perceptions and student learning.

This mixed-methods research study used a survey design approach to gather data of teacher perceptions of the PLC Process. The survey allowed participants (n = 247) to indicate their perceptions and give detailed descriptions of both the strengths and needs within each theme of PLCs. Data was collected electronically with all survey responses being used in the final statistical analysis of the study.

The major finding in this study was that teachers in the Midwestern school district perceived they have strong skill levels within all three themes of PLCs and find it

beneficial to improving student achievement. Consistently reported areas of strength included collaboration and experience. Major areas of need were linked to time and data. Significant differences were found based on teacher perceptions of the PLC process with regard to school level and years of experience.

The Midwestern school district should provide continual staff development regarding the PLC process. District personnel need to be involved in developing a more consistent process and consistent PLC forms to be used in all schools. A means of building level accountability should also be developed. Staff development for teachers should focus on research-based interventions, strategies, use of student data and creating enrichment activities.

Dedicated to:

Taylor and Jerrad
May you always understand and value the benefits of an education

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For your love, support and empathy as I worked to through
my doctoral program

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For your continual support and encouragement and for instilling in me the
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Chapter One

Introduction

History of Educational Reform

The history of American education is filled with numerous attempts at reform. The National Commission on Excellence in Education presented a report to the public entitled *A Nation at Risk* in April of 1983. This report documented the needs of the public education system. The opening paragraphs of this document stated:

> Our nation is at risk. Our once unchallenging preeminence in commerce, industry, science, and technological innovation is being overtaken by competitors throughout the world. This report is concerned with only one of the many causes and dimensions of the problem, but it is the one that under girds American prosperity, security, and civility. We report to the American people that while we can take justifiable pride in what our schools and colleges have historically accomplished and contributed to the United States and the well-being of its people, the educational foundations of our society are presently being eroded by a rising tied of mediocrity that threatens our very future as a Nation and as a people. What was unimaginable a generation ago has begun to occur – others are matching and surpassing our educational attainments. (p. 5)

The publishing of *A Nation at Risk* began a series of school improvement initiatives throughout the United States. The report warned of widespread deficiencies in public schooling, including poor mathematics and science instruction, low expectations for students, and homogenized and diluted curricula. To fix the problem, *A Nation at Risk* urged educational leaders to immediately rebuild our public schools from the ground up. The report recommended more rigorous and measurable educational standards, stiffer graduation requirements and better-trained teachers (Finn, 2008). Through the Nation At Risk report, America set the stage for a new wave of reform.

Standards-based reform. The standards-based reform movement, which emerged in the late 1980's and early 1990's, was designed to address the shortcomings of

past education reforms. Under the theory of standards-based reform, states establish challenging content and performance standards for all students and align key state policies affecting teaching and learning, curriculum and materials, teacher training, and assessment to these standards. Then, states gave schools and school districts greater flexibility to design appropriate instructional programs in exchange for holding schools accountable for student performance (Smith & O'Day, 1991). Along with the emphasis on higher standards for all students is the use of assessments to inform instruction and outcome-based accountability systems to create incentives for students and schools to improve.

Implementation of standards based reforms was not without its problems. Comparisons between states were difficult because standards are set at different points in each state (Shepard, 2002). All states were required to test students in reading/language arts and mathematics at the elementary, middle and high school levels, as well as to report disaggregated results for student subgroups. But states were given considerable leeway in how they met these requirements. Without strong federal direction, there emerged a wide range of state models. While all states developed assessments, standards, and performance reporting they found different ways to define what it meant for schools to succeed, what indicators to include in their definition of success, and what the consequences for failure would be (Goertz & Duffy, 2001). Further, federal, state, and local districts often demanded different types of data, and disconnects between local curricula and standards-based assessments used in accountability systems meant that teachers did not possess adequate knowledge to work towards standards (Baker & Linn, 2002).

No Child Left Behind. George W. Bush's No Child Left Behind (NCLB) act, passed in January 2001, continued the standardized-test-heavy reforms from the 1990s. This law built on the foundation laid in the 1980s and 1990s by ensuring that states accepting funding from the federal government agreed to measure and report on results in terms of standards and accountability (US Department of Education, 2008). NCLB mandated testing for all public school students in grades 3-8, set annual goals for test gains among sub-groups of students, and implemented a disciplinary approach to motivate low-performing or failing schools (NCLB policy).

NCLB (2001) is based on assessments, accountability systems, teacher preparation and training, curriculum, and instructional materials aligned with challenging state academic standards. The public, including parents, teachers and students, can measure the progress of their schools and districts against common expectations for student achievement. NCLB targets closing the achievement gap between high and low performing children specifically the achievement gaps between minority and non-minority students (NCLB policy). NCLB requires each state to develop and implement an accountability system based on academic standards.

NCLB Annual Yearly Progress (AYP) regulations require measurement of achievement of all students including those who are economically disadvantaged, are from minority groups, have disabilities and those with limited English proficiency. NCLB allows for corrective action for those schools labeled as "in need of improvement" or a "failing school" (Moore, 2008). The intent of the corrective action is to increase the likelihood that groups of students meet or exceed the state's proficient levels of achievement. Schools that fail to make AYP must provide all students with the option to

transfer to another school in the district. Further, the district must implement new curriculum based on research, replace school staff, extend the school day, or turn the operation of the school over to private management of to the state.

As a result of No Child Left Behind, we now have annual test score data on all students from third grade through eighth grade and once in high school. The nation is able to see how well each of the approximately 96,000 public schools in our country is performing, not just overall but for each subgroup of students. Unfortunately, through multiple reform efforts, student achievement scores in math and reading have risen only slightly in the twenty-five years after *A Nation at Risk* and graduation rates are as alarming as they once were, if not worse (US Department of Education, 2008). NCLB has helped to transform us from "a nation at risk of complacency to a nation that is accountable and at work on its education weaknesses" but it has not significantly increased the academic achievement of our nation's children or closed the achievement gap between subgroups of students (US Department of Education, 2008, p. 8).

Professional learning communities. The traditional failure in educational reform is not for lack of will or lack of understanding of what to do. Today, a wide range of educational experts and researchers are recommending an alternative to previous school reform. The current research targets school change and the concept of decreased teacher isolation and increased collaboration between educators with an overall focus on improving student learning (DuFour & Eaker, 1998). The term Professional Learning Communities (PLCs) represents this new focus and means of school improvement. A Professional Learning Community refers to a small team of teachers committed to

meeting regularly, working collaboratively on shared goals in order to improve achievement for each individual student they serve (Brookhart, 2009).

DuFour and Eaker (1998) defined professional learning communities as environments created by educators "that foster mutual cooperation, emotional support, and personal growth as they work together to achieve what they cannot accomplish alone" (p. xii). Multiple studies connect teacher collaboration, focused on teaching and learning, with student academic progress (Blankstein, 2004; Lieberman & Miller, 1999; Newmann & Wehlage, 1995). Reeves (2004b) and the Center for Performance Assessment reported positive student results with the use of teacher collaboration and the use of data, lesson planning, differentiation, intervention options, effective instruction, monitoring of learning, curriculum, and programs.

The PLC framework is grouped into three major components that are evident in every school or district.

> The components are: (1) a solid foundation consisting of collaboratively developed and widely shared mission, vision, values and goals, (2) collaborative teams that work interdependently to achieve common goals, and (3) a focus on results as evidenced by a commitment to continuous improvement. (Eaker, DuFour & DuFour, 2002, p. 3)

Schools that keep this framework at the forefront as they engage in school improvement can continuously assess the effectiveness of their efforts.

Statement of the Problem

School districts have been developing and implementing reforms for several decades, usually in response to federal, state or local pressures. State legislatures, presidents, members of Congress, educational organizations, and business/community leaders have urged improvement through legislation and the implementation of academic

standards. Making the necessary improvements is the challenge for school districts to improve and sustain achievement for all students. Aggressive efforts to reform schools are driven not only by federal and state mandates, but also by economic and technological changes in our world. Educators seek to educate a more diverse population and to ensure a higher level of skill for more students.

The implementation of Professional Learning Communities has been noted to be the most promising strategy for improving and sustaining student achievement (DuFour, 2007). As with any new school initiative, there are generally arguments both for and against a new way of teaching and learning. Traditionally, schools have been characterized by teacher isolation. The task of teaching has typically fallen on a single individual responsible for the learning of a group of students with little influence from colleagues. Shifting to a culture of meaningful collaboration, necessary to the implementation of PLCs has been described as the single most important factor for sustaining successful school improvement and overall effectiveness of a school (DuFour & Eaker, 1998).

The literature provides much research on the effectiveness of PLCs being tied to adequate staff development, implementation of the PLC concepts, and establishing necessary PLC support systems. There is little research, however, regarding how teachers perceive their personal skill level in working collaboratively and focusing on academic results being tied to increased student achievement. More research needs to be conducted to understand if a relationship exists between how teachers perceive their skill levels for implementing Professional Learning Communities and overall effectiveness while increasing student achievement scores.

Purpose of Study

The purpose of this study was to determine how teachers perceive their personal skill level in working collaboratively and focusing on academic results while participating in a Professional Learning Community. Student achievement data, reported through criterion-referenced test scores (CRTs), was examined from teachers displaying both positive and negative perceptions of the PLC process. This data was used to determine if there was a relationship between PLC perceptions and student achievement scores.

Research Questions

Research questions for the study were based on the three themes identified in the literature about Professional Learning Communities: (Theme One) assuring that all students learn at high levels, (Theme Two) working collaboratively in teams and (Theme Three) focusing on results (DuFour, 2004). Therefore, the overarching question for this research was: Do educator perceptions of their personal skill level in working collaboratively and focusing on results while participating in a Professional Learning Community have an effect on student achievement? The six sub-questions derived from the overarching research question are:

1. How do educators perceive their personal skill level in assuring that all students learn at high levels?
2. How do educators perceive their Professional Learning Team's skill level in creating a culture of collaboration?
3. How do educators perceive their Professional Learning Team's skill level in focusing on academic results?
4. What percentage of Professional Learning Teams meet their SMART goals?

5. Have student achievement scores increased while working within Professional Learning Communities?

6. Is there a relationship between educator perceptions of Professional Learning Communities and student achievement?

A survey was used to collect perceptions of educators participating in a Professional Learning Community and student achievement data was examined through criterion-reference test scores to answer these questions.

Definition of Terms

Collaboration—A process when members of a team "work interdependently to achieve common goals" (Eaker et al., 2002, p. 11).

Criterion-referenced tests (CRTs)—Standardized tests that compare a student's performance to clearly identified learning tasks or skill levels. The basis for comparison is to a body of content knowledge and skills.

Essential Learning—The critical skills, knowledge, and dispositions each student must acquire as a result of each course, grade level, and unit of instruction. Essential learning may also be referred to as essential outcomes or power standards.

Formative Assessments (Assessment FOR Learning)—All activities undertaken by teachers and their students that provide information to be used as feedback:

to adjust instruction to support additional learning,
to guide and support student learning, and
to support the closing of gaps in learning

Professional Learning Community—A small team of teachers committed to meeting regularly, working collaboratively on shared goals in order to improve achievement for each individual student they serve (Brookhart, 2009).

S.M.A.R.T. Goals—Academic goals created in PLC teams that are "Strategic, Specific, Measureable, Attainable, Results-oriented, and Timebound" (Eaker et al., 2002, p. 45).

Summative Assessments (Assessment OF Learning)—Assessments used to determine how much students have learned at a particular point in time in order to report achievement status (Ainsworth & Viegut, 2006).

Team Norms—The "commitments or ground rules all members agree to that govern how teams interact with each other" (Eaker et al., 2002, p. 41).

Assumptions of the Study

The researcher made the following assumptions regarding this study:

1. Each participant is an active member of an ongoing professional learning community.
2. Participants will answer the survey questions about their PLC perceptions truthfully.
3. Participants are familiar enough with the PLC process to answer the survey questions.

Delimitations of the Study

Delimitations narrow the scope of the study. The follow were delimitations of this study:

1. Subjects included only teachers from one school district who have worked within the PLC process.
2. The study included only teachers within the curriculum areas of reading, English and math.

3. Teachers participating in this study are required to participate in PLC training and to fully participate in PLC team meetings.
4. Results of their survey responses may be tied to dedication to Professional Learning Communities as directed by their district leadership team.
5. Participation in this study is voluntary.

Limitations

> Limitations are potential weaknesses or problems with the study identified by the researcher. The limitations often relate to inadequate measures of variables, loss or lack of participants, small sample sizes, errors in measurement, and other factors typically related to data collection and analysis. These limitations are useful to other potential researchers who may choose to conduct a similar or replication study. (Creswell, 2005, p. 198)

The limitations of this study were:

1. The research study was conducted in only one school district in a Midwestern state.
2. The research study was only conducted in a Midwestern state.
3. The research data was collected only by teachers self-reporting their perceptions.
4. Perceptions of those who participated are not factual information and are biased based on the participant's own experiences and attitudes

Significance of the Study

This study was intended to provide information to teachers, parents, administrators and members of the public. No other studies have been conducted measuring teacher and group skill levels while implementing a Professional Learning Community. The skill level perceptions of teachers are based on the 3 themes of PLCs: (a) assuring that all students learn at high levels, (b) working collaboratively in teams and

(c) focusing on results which are set forth through the literature on Professional Learning Communities. Most educators believe that providing re-teaching, re-learning and re-testing opportunities will help students become more academically successful. Studying CRT data of teachers with positive and negative perceptions of PLCs provides insight into the relationship between teacher perception and student achievement. If members of the school community are going to support the continual use of Professional Learning Communities they need to know the effect teacher perceptions have on the PLC process and the benefits for students.

Organization of Subsequent Chapters

The following chapters explore the perceptions of teachers in regards to their skill levels. The literature review in Chapter Two highlights the research studies in these areas. Chapter Three details the research questions and procedures of the study including the design and methodology. Results of the quantitative data, qualitative data and student achievement scores are discussed in Chapter Four. Lastly, Chapter Five features a discussion of the findings, as well as implications this study has on future research and the relationship between teacher perceptions of Professional Learning Communities and student achievement.

Chapter Two

Literature Review

One present-day issue in all 50 states is the alignment of school improvement and school reform with accountability and standards (Reeves, 2003). Although not popular terms in the early years, the idea of school reform grew with broadening globalization and subsequent comparison of how American schools were doing compared with other school systems internationally. Eventually, this resulted in a shift from the model of local school control to one more embedded in district, state and federal control of school improvement efforts (Pipho, 2000). This literature review will examine the history of school improvement efforts and the role of leaders and teachers in these efforts followed by the use of PLCs to enhance these efforts.

Several patterns converged to advance the focus on accountability and standards. From the 1950s through the 1970s, the educational testing industry grew and more data became available. Technological advances in mass communication increased accessibility of information by putting information in print and on televisions in the living rooms of the American public. Public education was also experiencing a lack of public confidence, with the belief that standards were soft and public schools were turning out substandard students. The public perception of American public education and the teaching profession suffered from a lack of regard (Schmuck & Schmuck, 2001). This trend was strengthened by reports critical of public education including *A* Nation at Risk (National Commission on Excellence in Education, 1983), which reviewed and compared American student test scores with scores from international sources. The report warned of the destruction of our nation's school systems and included concerns of poor

mathematics and science instruction, low expectations for students, and homogenized and diluted curricula. Based on this report and in an effort to quickly raise student achievement, policy makers sought to add rigorous and measurable educational standards, stiffer graduation requirements, lengthen the amount of time spent in school and hire better-trained teachers (Finn, 2008). These factors caused educational leaders to begin reforming schools to meet federally required outcomes to ensure success for all children (Hughes & Kritsonis, 2006).

A Nation at Risk served as a catalyst for a flurry of school improvement initiatives across the United States known as the Excellence Movement. This movement offered a consistent direction for reform. Schools simply needed to do more. Students needed to earn more credits, attend courses that were more rigorous and complete more homework. Schools also needed to test students more often. The reforms of the Excellence Movement simply called for an intensification of our existing practices yet they contained no new ideas (DuFour & Eaker, 1998). Five years after the publication of A Nation at Risk the Secretary of Education wrote after his resignation, “Despite all of the talk of reform, despite the investment of tons of billions of extra dollars, public education in the United States is still a failure” (Finn, 1991, p. xiv).

The failure of the Excellence Movement prompted a new two-step approach to school reform. The first step in this new strategy called for national educational goals and standards. President George H. W. Bush committed to working with our nation’s governors to improve public education. In 1989, the identification of “Goals 2000” was created by President Bush, his committee, and congress resulting in eight national goals for education to be achieved by the year 2000.

1. All children in America will start school ready to learn;
2. The high school graduation rate will increase to at least 90%;
3. American students will leave grades four, eight, and twelve having demonstrated competency in challenging subject matter including English, mathematics, science, history, and geography, and every school in America will ensure that all students learn to use their minds well, so they may be prepared for responsible citizenship in our modern economy;
4. United States students will be first in the world in mathematics and science achievement;
5. Every adult in America will be literate and will possess the knowledge and skills necessary to compete in a global economy and exercise the rights and responsibilities of citizenship;
6. Every school in America will be free of drugs and violence and will offer a disciplined environment that is conducive to learning;
7. By the year 2000, the nation's teaching force will have access to programs for the continued development of their professional skills and the opportunity to acquire the knowledge and skills needed to instruct and prepare all American students for the next century; and
8. By the year 2000, every school will promote partnerships that will increase parental involvement and participation in promoting the social, emotional, and academic growth of children. (US Department of Education, 1994)

National educational goals and standards began to be reviewed during this time while congress passed policies giving schools more freedom to develop strategies to achieve national goals.

The Restructuring Movement, or site-based reform, was implemented in the late 1990s. This allowed states and districts to control multiple aspects of education. Some common features included authority over staffing, budgets, programming, and instruction. It provided local educators greater authority to manage changes in their schools. Teachers and administrators could respond creatively to the issues faced in their individual buildings rather than being told what to do from higher levels of government. As Roland Barth (1991) wrote, "The advent of the restructuring movement brought a sudden confidence that teachers and principals, with the help of parents and students, can get their own schoolhouse in order" (p. 126).

Unfortunately, many schools opted to focus their efforts on peripheral issues that do not directly impact student achievement. Most schools chose to tackle student discipline, parental involvement and staff morale which are all important issues and should be part of a school's comprehensive improvement planning. These issues, however, do not lead to higher levels of learning. Schools needed to focus on the classroom, on instruction and on assessment to see the results necessary for increased student achievement. The Restructuring Movement, like the Excellence Movement, was also unable to make a difference in America's schools (DuFour & Eaker, 1998).

The most recent federal legislation promoting standards-based educational reform of our nation's schools was signed into law in January 2001, by President George W. Bush. This new initiative, No Child Left Behind (NCLB), was designed to ensure that "all children have a fair, equal, and significant opportunity to obtain a high quality education and reach, at a minimum, proficiency on challenging state academic achievement standards and state academic assessments" (NCLB policy, section 1001, 2001). No Child Left Behind is a law of good intentions. It demands that every child meets state standards with 100% proficiency by the 2013-2014 school year and created more rigorous standards in reading, math and science. The policy requires districts to employ highly qualified teachers and to provide professional development based on proven educational methods and strategies. Parents are given more choices regarding the school building in which their children attend and there is an overall increase in accountability of states and school districts for increasing results in student achievement.

Under the No Child Left Behind Act states and districts are working to close the achievement gap. Annual tests of student performance of state standards are given in

reading and math in grades 3-8 and one grade in high school. State and district report cards of student achievement are made public detailing total group scores and disaggregated group data to inform parents and communities about school progress. Schools that do not make progress must provide additional instructional services to assist students in making Adequate Yearly Progress (AYP). In order to meet AYP requirements, schools must assess 95% of all sub-groups consisting of more than 30 students and also meet the predetermined proficiency percentage that increases each year. AYP is an annual check to determine whether schools are meeting target goals for student performance in reading and mathematics. Districts must develop target, starting goals for AYP based on their student's standardized assessment scores in all sub-groups. After the starting targets are developed, states must increase student achievement in gradual increments in order for 100% of the students to become proficient on state assessments by the 2013-2014 school year. Schools not making adequate yearly progress are labeled as "in need of improvement" or a "failing school" and will be subjected to a graduated series of consequences from the federal government (Moore, 2008).

States and school districts have been given much more freedom and flexibility in how they use federal education funds under No Child Left Behind. It is possible for schools to transfer up to 50% of their federal formula grant funds to specific programs necessary to meet the individual needs of their school. These could range from improving teacher training to increasing the number of teachers in your district. NCLB puts an emphasis on the use of proven effective research based strategies. Federal funds have been targeted to support these teaching methods and to provide the necessary teacher training to incorporate them into classrooms. Parents are given a significant amount of

choices under the No Child Left Behind Act. If their child attends a low-performing school for two consecutive years, parents may transfer their child to a better-performing school, including a public charter school within the district. The district is responsible for transporting these students to the new school selected by parents (Moore, 2008).

There are many critics of the No Child Left Behind Act. Many believe that the incentives and penalties set up within this law could cause schools to manipulate test results creating an inflated perception of NCLB's success. Others have argued that the focus on standardized assessments encourages teachers to teach a narrow subset of skills that will simply increase test performance rather than create a deeper understanding of concepts. This is frequently noted as teaching to the test. The practice of giving all students the same test, under the same conditions has also created conflict with the Individuals with Disabilities Education Act (IDEA) stating that schools must accommodate students with disabilities. This "one size fits all" model is discriminatory against students with disabilities and punishes schools for not being able to significantly raise the achievement of students with below average cognitive abilities. NCLB has also been accused of forcing schools to ration funds for remedial programs taking these funds away from gifted programming. Finally, NCLB's focus on math and reading may increase academic scores in these areas while decreasing time and achievement in other areas such as the arts, science, social studies and foreign languages.

Four years after the No Child Left Behind Act took effect, the National Assessment of Educational Progress reported that most fourth and eighth graders had made progress in reading and math in 11 city school districts surveyed. These schools, however, were still performing well below the national average. The achievement gap

between white and minority students in these districts had either stayed the same or widened. These results tell us that closing the achievement gap may take much longer than the law is currently allowing. Without significant revisions to this law, this new educational reform movement will likely fail as those that preceded it (National Assessment of Educational Progress, 2006).

Past efforts of educational reform have sadly not been able to produce the increased student learning necessary to close the achievement gap and improve our nation's schools. Unfortunately, through multiple reform efforts, student achievement scores in math and reading have risen only slightly in the 25 years after *A Nation at Risk* and graduation rates are as alarming as they once were, if not worse (US Department of Education, 2008). The public education system is in desperate need of a new pathway to provide the best hope for significant school improvement. There is increasing evidence that the "best hope for this type of improvement is transforming schools into professional learning communities" (DuFour & Eaker, 1998, p. 17). For this to happen we have to reach a tipping point or a moment when educator's actions and attitudes change dramatically. Such a tipping point, from reform to true collaboration, could represent the most productive shift in the history of educational practice (Gladwell, 2002).

Educational Leadership

Leadership in education has been cited as being a strong influence in reform efforts, necessary for the creation of a positive culture and one of the building blocks of Professional Learning Communities (DuFour, 2004). School leaders must become familiar with the research surrounding leadership characteristics and what makes educational leaders able to facilitate, support and build a school that can successfully

function as a learning community. Many research experts who have studied effective leaders describe differing characteristics leading to strong successful organizations.

Fullan (2004) believes that leadership and management often overlap noting the one difference between them is that leadership is needed for problems that do not have easy answers. For these problems, there are never any clear or popular resolutions. In times of difficulty or change, we must look for leadership that will challenge us to face problems for which there are no simple solutions and force us to learn in new ways. Heifetz (1994) states that, "leadership is not mobilizing others to solve problems that we already know how to solve, but helping others to confront problems that have not yet been addressed successfully" (p. 15).

The literature provides a great deal of research on educational leadership. Types of leaders noted include transformational leaders, coercive leaders, authoritative leaders, affiliative leaders, democratic leaders, transactional leaders and coaching leaders (Fullan, 2001; Marzano, Walters, & McNulty, 2005). Transformational leadership shows up most often in the literature related to educational change and is defined by four factors: individual consideration, intellectual stimulation, inspirational motivation and idealized influence. These "Four I's" are necessary skills for school principals if they are to meet the challenges of the 21st century (Marzano et al., 2005, p. 14-15). The five components of leadership, identified by Fullan, describe the key characteristics needed to help leaders become more effective. These components consist of moral purpose, understanding change, relationship building, knowledge creation and sharing, and coherence making (2001). These components encompass the necessary skills for leaders to reinforce positive changes in their organization.

Moral purpose involves leaders always acting with the intention of making a positive difference in the lives of employees, customers and society as a whole. Leaders must also clearly understand the steps involved in the change process. Building relationships is a critical factor in leadership. Effective leaders must foster purposeful interactions with the people around them for situations to improve. Educators who begin to trust each other and have strong relationships will also begin to share their knowledge and expertise. Coherence making involves a shared commitment to shared ideas and values within an organization. Effective leaders must also possess energy, enthusiasm and hope, making people feel that even the most difficult problems can be tackled productively. Leaders who utilize all these characteristics will reap enormous rewards and benefits (Fullan, 2001).

For schools and leaders who wish to shape their leadership around these characteristics, Christie (2002) tested and refined an eight dimensional model of transformational leadership for schools:

1. building school vision,
2. establishing school goals,
3. providing intellectual stimulation,
4. offering individualized support,
5. modeling best practice and important organizational values,
6. demonstrating high performance expectations,
7. creating a productive school culture, and
8. developing structures to foster participation in school decisions. (p. 132)

These eight guidelines compare to necessary factors identified in the PLC literature to implement and sustain a Professional Learning Community.

Often educators look to the business sector for guidance and advice for effectively managing and leading schools. Jim Collins discussed the idea of Level 5 Leadership in his 2001 book Good To Great. This term differentiated between corporate leaders who

led “good” companies with those who led “great” companies. Collins defined Level 5 leaders as those who

> channel their ego needs away from themselves and into the larger goal of building a great company. It’s not that Level 5 leaders have no ego or self-interest. Indeed they are incredibly ambitious – but their ambition is first and foremost for the institution, not themselves. (p. 21)

Collins’ findings can be applied to schools and school districts. Educational leaders do not empower teachers by disempowering themselves. They create combined empowerment through inclusion, common language, shared interests, and in coherence (Collins, 2005). One of the great ironies in education is that it takes strong and effective educational leaders to create truly empowered people who are capable of sustaining improvement after the leader is gone (DuFour, DuFour, Eaker, & Many, 2006, p. 192).

McRel’s balanced leadership framework describes the responsibilities, practices, knowledge, strategies, tools and resources that principals need to be effective leaders. Research showed that effective leaders understand how to balance pushing for change while protecting aspects of culture, values and norms worth preserving. They know how “to create learning environments that support people, connect them with each other, and provide the knowledge, skills and resources they need to succeed” (McRel, 1995-2005, p. 2). McRel’s research identified 21 key leadership responsibilities and practices that significantly correlated with student achievement. The top seven responsibilities found were situational awareness, intellectual stimulation, input, being a change agent, creating a positive culture, monitoring and evaluating and outreach to the community. This integration of research and theory into practice add value to their work and improve student achievement.

Leadership is essential to improving our system of education to create PLC environments where learning is valued and all stakeholders are working toward improved student learning. Leaders of professional learning communities sincerely accept that learning rather than teaching is the fundamental purpose of schools. They “shift their focus and that of their school community from inputs to outcomes and from intentions to results” (DuFour, 2002, p. 15). Meaningful, sustainable improvement requires cultural changes in assumptions, beliefs and values. Effective leaders recognize the importance of a positive school culture striving to foster collaboration and support shared values all for the fundamental purpose of learning for all students. Educational leaders intentionally work to develop the leadership capacity of the staff by creating structures that allow teachers to fully participate in leadership processes. They invite staff to participate in committee work. Effective leaders recognize that one of the most significant responsibilities of a leader is to help others believe in their own capacity to lead and to assure that every classroom is directed by a confident and capable teacher-leader (Eaker, 2006-2007).

Teacher leadership. Today, more than ever, educational factors point to the necessity of teacher leadership in schools. These are teachers whose vision extends beyond their own classrooms and even beyond their own teams or departments. They recognize that the experiences students have at school depend not only on the interactions with individual teachers but also on the set of systems that are in place throughout the school. Teachers with this awareness find a variety of ways, both formally and informally, to exercise teacher leadership (Danielson, 2007).

School districts that want to improve make a wise investment when they encourage teacher leadership. Principals today are expected to be visionaries, managers, instructional leaders, accountability regulators, and respond to multiple educational stakeholders. They simply cannot devote the time and energy necessary for school improvement. Individual teachers have their own particular areas of expertise however when you gather a group of teacher leaders they can supply the variety of professional knowledge needed for sustained school improvement (Danielson, 2007). Given these factors, school improvement initiatives, such as Professional Learning Communities, need the active involvement of teacher leadership.

Formal teacher leaders take on roles such as department chair, instructional coach, or school improvement chair. Generally, these individuals apply for their positions and are hired through a selection process. Informal teacher leaders spontaneously take the initiative to address a problem or create a new program. Through either process, teacher leaders exhibit skills and values with the aim of improving teaching and learning. Fullan (2007) stated: “The litmus test of all leadership is whether it mobilizes people’s commitment to putting their energy into actions designed to improve things. It is individual commitment, but above all it is collective mobilization” (p. 9).

Teacher leaders are easily able to enlist colleagues to support their vision, build consensus and convince others of the importance of their plan for improvement. They display confidence, optimism, decisiveness and enthusiasm. Teacher leaders are involved in improvement efforts within their own department, across the school and beyond the school. In the most successful schools, improvement in teaching and learning occurs through teacher leadership (Danielson, 2007).

Professional Learning Communities

The history behind PLCs is discussed in a variety of sources, including Hord (2004) who dates its origin back to the publication of *A Nation at Risk* in 1983, which identified significant problems with the teaching profession. During this time, other research began that looked at the culture of work environments in education and in the public world. Peter Senge's book The Fifth Discipline (1990) pursued the idea of ownership to improve performance and used the term learning organization. Senge stated, "The most successful corporation of the future will be a learning organization" (p. 4). Senge's term ultimately found its way into the education realm and the label shifted to learning communities now prevalent in the implementation of Professional Learning Communities.

Professional Learning Communities (PLCs) have become increasingly popular in educational settings for improving student achievement. Understanding the history of America's educational system and acknowledging that the traditional factory model of education is no longer relevant is crucial in the implementation of PLCs. There are a variety of definitions for PLCs that help to provide a general understanding of the intended purpose of this model. Huffman and Jacobson (2003) define professional learning communities as:

> A term used to refer to a school organization in which all stakeholders are involved in joint planning, action, and assessment for student growth and school improvement . . . where difficult things can be talked about, where hard questions about teaching and learning get asked, and where adults can learn from each other. (p. 240)

Another definition of PLCs providing a more detailed description comes from Bolster and Henley (2005):

> PLCs are small groups of teachers (3-5) working together on a regular basis for learning, joint planning, and problem solving. PLCs can be organized by grade levels, multiple grade levels, departments, or interdisciplinary groups. The members of each group interact with each other and depend upon each other for the accomplishment of specific goals. The group stays together long enough to form habits and conventions. An effective learning community cultivates an attitude of inquiry and focuses attention on student thinking and understanding. In a dynamic learning community, everyone learns. (p. 1)

A third and more systematic definition of PLCs comes from Brookhart (2009):

> A professional learning community is defined as a group of 4-6 teachers or administrators who do the following:
> 1. meet regularly,
> 2. work on shared goals and related tasks between meetings, and
> 3. accomplish shared goals. (p. 1)

Although the definitions listed above have some differing components, all have the same core purpose: allowing educators the opportunity for a more collaborative culture where more time is given for teachers to talk about teaching and collectively work toward improving student learning.

Developing professional learning communities. Covey (1989) stated that the best way to implement any new initiative is to “begin with the end in mind” (p. 95). Planning for student success by collectively agreeing upon the educational concepts to be mastered is necessary in order to build the foundation of a professional learning community. The first step educators must take in this process is to collaboratively develop a clear mission statement for their school. Mission statements describe the purpose for the school’s existence. From here, staff member collaboratively develop a vision statement that describes the direction educators need to go in order to accomplish their purpose. Value statements, or collective commitments, are agreed upon to guide the behavior of all staff members in order to make the school’s vision and mission become a

reality. Finally, goals are set to establish priorities, targets, time lines and to determine how progress will be measured (DuFour et al., 2006).

The cornerstone of an effective PLC is the unwavering focus on improving student learning and the commitment of teachers to work collectively toward achieving this outcome. DuFour (2003) outlined the main actions of a successful PLC:

1. commit and contribute to collaborative teams;
2. clarify purpose and priorities of learning;
3. gather continual data on student achievement;
4. identify areas of concern and generate interventions;
5. create common, formative assessments;
6. assess the impact of the identified interventions; and
7. support each other through this process.

DuFour (2003) further explains that when educators remain persistent and focused on improving the achievement for ALL students, the likelihood of sustained and substantive success is increased.

Professional learning communities are composed of four main priorities:

1. focus on learning,
2. focus on collaborative culture,
3. focus on results, and
4. provide timely, relevant information. (Eaker et al., 2002, p. 34)

Each priority, or theme, contains several components that are essential for PLCs to be effective. The mere presence of a PLC does not automatically equate positive change. It is what the learning community team chooses to focus on that will determine the outcomes.

Focus on learning. Hollins (2006) supports PLCs as a way to move teachers to "collectively assume responsibility for making sure all students learn" (p. 48). The intended overall purpose of Professional Learning Communities must be on improving student learning. DuFour (2004) indicated:

> The PLC model flows from the assumption that the core mission of formal education is not simply to ensure that students are taught but to ensure that they learn. This simple shift from a focus on teaching to a focus on learning has profound implications for schools. (p. 7)

Creating a focus on learning is the first priority within professional leaning communities. PLC participants must focus and engage in discussions with colleagues from their team around four crucial questions:

- What do we want each student to learn?
- How will we know when each student has learned it?
- How will we respond when a student experiences difficulty?
- How will we provide enrichment to those students who have demonstrated proficiency?

If the purpose of school is to truly ensure high levels of learning for all students PLC teams must first clarify what each student is expected to learn. This is done by educators in PLC teams determining 8-10 essential learnings or objectives per semester for each course that they teach. These outcomes include the critical skills and knowledge each student must acquire by the end of the course (DuFour et al., 2006).

Next, teachers must create common measures of assessment to determine when students have mastered essential objectives. Formative assessments, assessments for learning, are developed within PLC teams to occur throughout the learning process while the learning is occurring. This allows teachers to know which students are making progress toward meeting essential objectives and which students need more time and support (Stiggins, 2005).

PLC teams develop systematic interventions to ensure that students receive this additional time and support if they are not learning. Much of DuFour's work provides

concrete examples of support systems used within schools. Interventions described consist of peer mentoring, counselor watch programs, guided study halls, after school activities, summer skills programs, and academic celebrations (DuFour, 2004). Teachers must begin to see learning as a "constant" for each student with time and support now being considered "variables."

PLC teams also create enrichment opportunities for those students who master material more quickly to ensure additional learning (DuFour, DuFour, Eaker, & Karhanek, 2004). It is critical that enrichment is provided to those who are ready in order for continued learning to take place. Allowing students with difficulty additional time and support should never take away from those who are ready to move ahead. PLC teams must prepare for learners at both ends of the spectrum. They must be willing to create fluid study groups moving students in and out of groups as necessary with some groups for students needing additional interventions and other groups for students needing enrichment. This assures that teachers have their focus on learning at all levels with consistent, high expectations for all students.

Culture of collaboration. Building a culture of collaboration is the second building block within professional learning communities. High levels of learning for all students can only occur if teams work together collaboratively in the pursuit of common goals. Teams must focus their collaborative efforts on the four crucial questions mentioned above in order to improve student achievement.

Time for teams to meet collaboratively must be set aside specifically for this purpose, separated from teaching and planning time. The reality of schools today and their available resources is that time and money are stretched very thin. Most authors on

the subject of PLCs believe that the necessary time and resources will result if there is adequate passion and support behind the PLC model. This devotion relates directly to the importance of having all stakeholders on board and supporting the movement toward educational change.

Focused work in PLC teams, structured through professional development opportunities, will help all members possess an expanded repertoire of skills, materials and strategies to impact student learning. This easily occurs as team members tap into each other's existing capabilities and potential (Schmoker, 2006). Truly productive teams are those in which teachers rigorously plan, design, research, evaluate, and prepare teaching materials together. Teachers teaching one another the practice of teaching is what will lead schools to continual improvements (Fullan, 2001).

Finally, PLC teams establish norms or collective agreements that govern the operations of the group and help establish trust, commitment and accountability among members to assure that the team functions effectively (DuFour et al., 2006). In all aspects of working within groups, trust is an integral component of members being able to share beliefs in an open and upfront manner. Teachers must feel safe in reflecting on their own teaching practices and the academic results of their students with their colleagues. Team member commitments to each other, based on the mastery of essential learnings from their curriculum, raises the level of accountability and ultimately benefits both teachers and students.

Focus on results. The third and fourth building blocks of professional learning communities are focusing on results and providing timely, relevant information. PLC teams must look at relevant data and use this information to promote growth. First, teams

must “confront the brutal facts” regarding their student’s current level of achievement (Collins, 2001, p. 13). By determining baseline data of student performance, team’s can pursue specific measurable goals to improve their baseline scores. DuFour (2002) recommends writing S.M.A.R.T goals that are specific, measurable, attainable, results-oriented, and time-bound.

Teams use relevant data to determine progress which comes from commonly developed formative and summative assessments based on essential learning. Members analyze their student’s data together in teams to determine which students need additional support. Re-teaching and re-testing materials are collectively developed to assure mastery from all. Frequent formative assessment provides students with a clear picture of their progress on essential learning and has been tied to significant improvement in student achievement. In fact, research shows that giving five to ten formative assessments over a period of approximately 15 weeks will yield an effect size of .53 - .60 resulting in a 20.0 - 22.5% gain in academic achievement (Marzano, 2007).

The most powerful single modification that has been shown to enhance achievement is frequent feedback. Explaining correct answers and/or asking students to refine answers has been associated with a gain in achievement of 20 percentile points. When student results have been displayed graphically there have been gains in achievement of up to 26 percentile points. Finally, if assessment results are interpreted by a set of rules or specific criteria such as a rubric, student achievement has been seen to improve by 32 percentile points (Marzano, 2007).

PLC teams must use data to collaboratively plan intervention strategies and select the instructional focus for the next instruction cycle for continuous improvement to occur

(Ainsworth, 2007). Using data to guide instruction is the most effective strategy for translating the good intentions in a school's vision statement into meaningful school improvement targets. PLC teams must embrace the use of data analysis to shape instructional decisions and improve student achievement one student at a time.

Summary of professional learning communities. PLC work requires school staff to focus on learning rather than teaching. Teams collaborate on matters related to learning and hold each other accountable for the kind of results needed to sustain continual improvement. Their collective commitments will help all students raise their levels of achievement. Schools that do not display the discipline to initiate and sustain this work will not become more effective. Schools can close the achievement gap right now by using what they already know about instruction and by what they choose to do within learning communities. The benefits for students and for educational professionals will be immeasurable. DuFour (2004) states the importance of this work best with the quote, "The rise and fall of the professional learning community depends not on the merits of the concept itself, but on the most important element in the improvement of any school – the commitment and persistence of the educators within it" (p. 11).

Midwestern School District's Model

The Midwestern school district used in this study initiated a new teaching and learning model, Professional Learning Communities (PLCs), at the beginning of the 2006-2007 school year. This model would ultimately replace the work previously done by the School Improvement Team. The district provided training opportunities to members of SIP teams, now called PLC Leadership teams in many buildings. Building level teams took this new model aimed at improving student learning for each individual

student back to their staff to discuss how the model would best fit their framework (Eaker et al., 2002).

The initial PLC training began by introducing the essential characteristics of PLCs. Schools were challenged to assess the culture of their building and design a plan to effectively implement PLCs in their respective settings (DuFour et al., 2006). Schools had assistance form district staff during this preparation process. Advanced PLC training occurred during the following summer where schools were challenged to consider their current school's reality and to implement PLCs at a deeper level. A specific focus was made to implement rich, deep discussions on what all students should know and show evidence of knowing. Time was also spent developing a deeper understanding of formative and summative assessments along with standards based grading practices (Reeves, 2007). Other years training sessions focused on connecting school improvement with professional learning communities, identifying essential outcomes, and continuing efforts to build assessment literacy (DuFour et al., 2006).

During the first year of implementation, PLC teams worked together after school one day a quarter for two hours. This additional time after contract hours was compensated for all teachers in the district. Teachers were encouraged to have time set aside to work collaboratively, but felt they needed more time to be effective. In the 2007-2008 school year, the Midwestern school district added one additional student day to their yearly calendar for elementary and middle level buildings and extended the length of the school day for high schools. This change to the calendar allowed elementary and middle level teachers to work collaboratively in PLC teams for 80 minutes one day a month and high school teachers to meet in PLC teams for 60 minutes one day a week all during the

school day. This provided LPS teachers more time to focus on individual student needs and to work together toward academic solutions (DuFour et al., 2004).

Summary of Literature

To inform this study, this literature was divided into three main areas of research. These were: past educational reform movements, educational leadership and the structure and implementation of Professional Learning Communities (PLCs).

Past educational reform movements. The literature provided a historical perspective of how school reform movements have failed over the last few decades. Some movements simply stated that schools needed to do more without providing any new strategies. Others opted to focus their efforts on peripheral issues that do not directly impact student achievement. Leading authors and researchers on school change noted reasons for this failure such as misplaced focus, ineffective strategies and a lack of persistence.

For schools to experience success with change efforts it is apparent that there must be a focus on the systems of support, teacher collaboration, and a significant focus on student learning. Schools must be places where teachers are allowed to work together to make meaningful changes related to their students learning. The research literature supports the connection between increased student achievement and the transformation of schools into professional learning communities.

Educational leadership. The review of literature on educational leadership provided an understanding of the important role school leaders play to move schools forward on the path of improvement. Several authors cited types of leadership necessary to move schools in the direction of increased student achievement. Transformational

leadership shows up most often in the literature related to educational change and is defined by four factors: individual consideration, intellectual stimulation, inspirational motivation and idealized influence. Fullan (2001) describe the key characteristics needed to help leaders become more effective as moral purpose, understanding change, relationship building, knowledge creation and sharing, and coherence making. All of these factors together will allow educational leaders to successfully implement PLCs into their schools.

For schools and leaders who wish to shape their leadership around these characteristics, Christie (2002) tested and refined an eight dimensional model of transformational leadership for schools:

1. Building school vision,
2. Establishing school goals,
3. Providing intellectual stimulation,
4. Offering individualized support,
5. Modeling best practice and important organizational values,
6. Demonstrating high performance expectations,
7. Creating a productive school culture, and
8. Developing structures to foster participation in school decisions. (p. 132)

These eight guidelines compare to necessary factors identified in the PLC literature to implement and sustain a Professional Learning Community.

Leading a school and all the demands it currently faces can simply no longer be left to the school principal. Administrators must work along with teachers and teacher leaders to work toward the goal of increased student learning. Teacher leaders exhibit skills and values with the overall aim of improving teaching and learning. In the most successful schools, improvement in teaching and learning occurs through teacher leadership (Danielson, 2007).

Structure and implementation of professional learning communities. There are a variety of definitions for Professional Learning Communities that help to provide a general understanding of the intended purpose of this model. All have the same core purpose which is an opportunity for a more collaborative culture where teachers are given more time to talk about teaching and assessment and students are given more time and support to improve learning.

The cornerstone of an effective PLC is the unwavering focus on improving student learning and the commitment of teachers to work collectively toward achieving this outcome. Professional Learning Communities are composed of four main priorities:

1. Focus on learning,
2. Focus on collaborative culture,
3. Focus on results, and
4. Provide timely, relevant information. (Eaker et al., 2002, p. 34)

Each priority, or theme, contains several components that are essential for PLCs to be effective. Teachers must shift their focus from teacher instruction to student learning. PLC teams develop systematic interventions to ensure that students receive this additional time and support if they are not learning. When educators remain relentless and focused on improving the achievement for all students, the likelihood of sustained success is significantly increased.

Little (2000) describes truly productive teams as those in which teachers rigorously plan, design, research, evaluate, and prepare teaching materials together. Teams collaborate on matters related to learning, use frequent formative assessments to guide instruction and hold each other accountable for the kind of results needed to sustain continual improvement. The literature clearly shows that the collective commitments

made within professional learning communities will help all students raise their levels of achievement.

When the review of the literature was completed a clear set of research questions on which to focus became apparent. Research questions for the study were based on the three themes identified in the literature about Professional Learning Communities: (Theme One) assuring that all students learn at high levels, (Theme Two) working collaboratively in teams and (Theme Three) focusing on results (DuFour, 2004). Questions will refer to how teachers assess their personal skill level in working collaboratively and focusing on academic results while participating in a Professional Learning Community. Open-ended questions will be included to obtain areas of strength and need for all three themes. Student achievement data, reported through Criterion Referenced Test scores (CRTs), will be the examined from teachers displaying both positive and negative perceptions of the PLC process. This will help to answer the overarching question for this research study: Do educator perceptions of their personal skill level in working collaboratively and focusing on results while participating in a Professional Learning Community have an effect on student achievement?

Chapter Three

Methodology

Introduction

The purpose of this study was to determine how teachers assess their personal skill level in working collaboratively and focusing on academic results while working in a Professional Learning Community. Student achievement data, reported through Criterion Referenced Test scores (CRTs), were studied from teachers displaying both positive and negative perceptions of the PLC process.

This study used concurrent mixed-methods survey research to examine teacher perceptions of the PLC Process and analysis of student achievement results. Mixed method research incorporates both qualitative and quantitative approaches in the research methods, data analysis and design. Its central premise is that the use of quantitative and qualitative approaches in combination provides a better understanding of research problems than either approach alone (Creswell, 2009). Concurrent mixed methods research allows the investigator to collect "both forms of data at the same time and then integrates the information in the interpretation of the overall results" (Creswell, 2009, p. 34).

Research methods are the specific plans or proposals involved in the last three steps of the research process: data collection, data analysis and reporting findings. Survey designs describe the procedures in mixed method research the investigators used to measure the degree of association between two or more variables using the statistical procedure of correlation analysis. In the study, the research determined if there is a relationship between PLC perceptions and student achievement scores.

Research Questions

The overarching question for this research was: Do educator perceptions of their personal skill level in working collaboratively and focusing on academic results while implementing a Professional Learning Community have an effect on student achievement?

The six sub-questions derived from the overarching research question are:

1. How do educators perceive their personal skill level in assuring that all students learn at high levels?
2. How do educators perceive their Professional Learning Team's skill level in creating a culture of collaboration?
3. How do educators perceive their Professional Learning Team's skill level in focusing on academic results?
4. What percentage of Professional Learning Teams meet their SMART goals?
5. Have student achievement scores increased while working within Professional Learning Communities?
6. Is there a relationship between educator perceptions of Professional Learning Communities and student achievement?

Population and Sample

Thirty-seven elementary schools, ten middle schools and six high schools, located in a Midwestern school district, were the population of this research study. In this population elementary schools contain grades K through 5 and range in population from 102 to 930 students. Middle schools have students in grades 6 through 8 and range in population from 420 to 900 students while high schools consist of grades 9 through 12

and contain 1,400 to 1,900 students. All schools in the school district are actively participating in Professional Learning Communities.

The sample of individuals for this study included elementary, middle, and high school teachers teaching in English/language arts or math and participating in an English/language arts or math Professional Learning Community. The teachers included were those in grades 3 through 5 (420 teachers), middle school teachers in grade 6 (90 teachers), teachers in grades 7-8 (96 teachers) and teachers in grade 10 (76 teachers) in the Midwestern school district. The only school not included in the study was the middle school where the researcher was employed.

Additionally, criterion-referenced test scores of students being taught by these English, language arts and math teachers were used to compare the academic performance of students. These assessments provided student achievement data to compare with educators displaying positive and negative perceptions of personal skill level in working collaboratively and focusing on academic results while participating in a Professional Learning Community. Surveying teachers within these categories allowed the researcher to determine if educator perceptions of their personal skill level in working collaboratively and focusing on academic results while implementing a Professional Learning Community have an effect on student achievement.

Survey Instrument

A teacher cross-sectional survey instrument was used to collect data (see Appendix A). A “cross-sectional” survey allows the researcher to collect data “at one point in time” (Creswell, 2009, p. 146). For this study, the cross-sectional survey examines teacher perceptions about Professional Learning Communities. Data was

collected using an electronic survey (see Appendix A) sent to educators in all participating schools in the Midwestern school district. Teachers received the survey through their education e-mail account within the school district. The use of the Internet for the collection of electronic, mixed method data is common (Dillman, 2007). Electronic data collection provides a quick and easy form of data collection. Computer Services for the Midwestern school district collected the data for this study.

The researcher conducted a pilot of the survey instrument using 40 teachers from the researcher's school that were not previously selected to participate in this study. With the pilot survey the researcher sought open-ended feedback about changes needing to be made to the survey in order that it might be improved. The researcher used the information gathered from the test pilot to eliminate any concerns of bias in the survey.

When the pilot surveys were returned, they were analyzed by the researcher and appropriate changes were made to the survey to ensure a non-biased survey was sent out to the survey sample. The pilot study helped to check the validity of the survey by making sure the individual scores gathered from the instrument allow the researcher to "draw meaningful and useful inferences from the scores" from the sample being studied to the population (Creswell, 2009, p. 149). The data obtained from the pilot study was also used to check the reliability of the survey determining the consistency of questions and responses across all constructs (Creswell, 2009). The cross-sectional survey provided data to help the researcher have a better understanding of teacher perceptions of the PLC process and its impact upon student achievement. Table 1 shows a match between research questions, survey items and data collected.

Table 1

Correlation between Research Question and Data Collected

Research Questions	Data Collected
How do educators perceive their personal skill level in assuring that all students learn at high levels?	Personal Skill Level in Assuring High Levels of Learning Survey Questions 1-8
How do educators perceive their Professional Learning Team's skill level in creating a culture of collaboration?	Team's Skill Level for Collaboration Survey Questions 1-10
How do educators perceive their Professional Learning Team's skill level in focusing on academic results?	Team's Skill Level for Academic Results Survey Questions 1-8
What percentage of Professional Learning Teams meet their SMART goals?	Survey SMART goal data
Have student achievement scores increased while working within Professional Learning Communities?	Criterion-Referenced Test Data
Is there a relationship between educator perceptions of Professional Learning Communities and student achievement?	Team's Skill Level for Academic Results Survey Questions 1-8 Criterion-Referenced Test Data

Survey Procedures

Mixed methods research combines the use of both quantitative and qualitative research and methods in one study. Researchers typically employ mixed methods designs to use one approach to better understand or explain the results of the other. Those who engage in this type of inquiry must be familiar with both quantitative and qualitative forms of research and complete time intensive analysis of both test and numerical data (Creswell, 2009). A concurrent embedded strategy was used in this study as both quantitative and qualitative data were collected simultaneously. This strategy has a primary method guiding the study and a secondary method adding support. The mixing

of data from two methods allows the researcher to gain a broader perspective of the results (Creswell, 2009).

Below is a step-by-step chronology of how the study was conducted, including e-mail contacts and follow-up procedures. Permission from The Institutional Review Board (IRB) of the University of Nebraska – Lincoln was requested to conduct this study.

1. A pre-notice e-mail was sent to all selected educators in the Midwestern school district. This was done 3-5 days prior to an e-mail requesting participation in the survey.
2. The formal request to participate included the cover letter and a link to the electronic survey. By clicking the survey participation link on the informed consent the participants indicate their willingness to participate. Each participant can choose at any time to exit the survey.
3. A follow-up request was sent out through e-mail 5-7 days after the first request to complete the electronic survey. This included a thank you to those who have already completed the survey and will urge those who have not to do so right away.
4. A final follow-up e-mail request was sent out 10-12 days after the original request to participate if survey results show a low return rate.

Student Achievement Data

Criterion-referenced test (CRT) scores in the areas of reading comprehension and math were used as the measure of student achievement for this study. CRTs are tests in which questions are written according to specific predetermined criteria. Criterion-referenced tests (CRTs) are intended to measure how well a person has learned a specific

body of knowledge and skills. These kinds of tests/assessments differ from norm-referenced tests in that scores reflect students' proficiency on particular educational standards, rather than their academic standing relative to other students. CRTs are developed by teachers to measure the district curriculum and standards.

The CRT scores examined in this study were associated with the teachers in the Midwestern school district who participated in the survey. A specific focus was made to examine CRT scores of those teachers displaying positive and negative perceptions of the PLC process. Based on data generated from the return of the survey, procedures were identified as to what overall survey scores were considered positive or negative.

Data Analysis

Concurrent mixed method researchers must use a combination of quantitative (numeric analysis) and qualitative (thematic analysis) approaches to report findings. This enables the researcher to compare quantitative results with themes from the qualitative data. A visual model (see Figure 1) provides a sequence to this study indicating that qualitative methods are embedded within a quantitative design (Creswell, 2009).

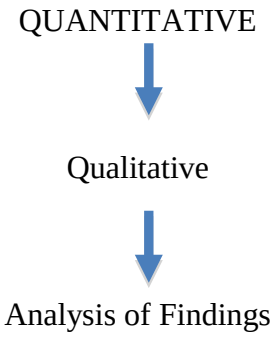

Figure 1. Concurrent Embedded Design

Inputting data occurred when the researcher transferred the data from the responses on the instrument to a computer file for analysis. With the help of Computer Services, the researcher organized the collected data into specific like categories. Once the data was collected into a database, the researcher examined the information for missing data. This was completed with the help of Computer Services. Missing data was be defined as data missing from the database because participants in the study did not supply information to a particular question. For this study the researcher did not exclude any survey responses from the participants. All survey responses were be put into the database and used in the final analysis for the study.

For this study the dependent variable was the teacher perceptions of their personal skill level in working collaboratively and focusing on academic results while working in a Professional Learning Community. The independent variables for this study were:

1. Criterion Referenced Test scores (CRTs) from teachers displaying both positive and negative perceptions of the PLC process;
2. participants grade level;
3. participants primary curriculum area;
4. participants PLC team size;
5. participants SMART goal results; and
6. participants years of experience.

Scoring data means that the researcher assigned a numeric value (or score) to each category and each question on the instrument used to collect data. When using continuous scales the researcher used consistent scores for each question and answer. To aide in the scoring of the open-ended survey responses, the researcher developed a codebook

indicating how the researcher coded these responses from the survey. For non-open-ended survey responses within this study, a single-item score was used. A single-item score is an individual score assigned to each question on the survey for each participant in the study. The scores provide a detailed analysis of each participant's responses to each question they voluntarily choose to answer.

CRT scores in the areas of reading comprehension and math were obtained from the Midwestern school district. The data was examined collectively in each area over the past five years. This time period will represent scores before and after the implementation of Professional Learning Communities in the Midwestern school district. CRT scores were also examined individually for teachers displaying positive or negative perceptions of the PLC process. Individual CRT data was analyzed up to two previous years dependent upon the amount of time the teacher has worked in the district in the current position.

Reliability and Theme Verification

Reliability analysis allows one to evaluate the internal structure of survey scales created based on a collection of responses to related issues. Next to validity, reliability is the most important quality to seek in research results. It is important to remember that reliability refers to the results of the measurement and in this study it is based on the quality of items sharing variation with the total scale constructed for the survey theme.

Performing reliability analysis of the measurement instrument and establishing validation of themes, ensures that the researcher is taking action to evaluate the quality of the study. These analyses allow the researcher to check accuracy and credibility of findings. Ethical practices were also a priority throughout the study. The research was

conducted with informed consent from the participants. All participants were made fully aware of the purpose of the study and what their participation entailed.

Reliability. The reliability of the study refers to whether scores to items within the survey are internally consistent. Cronbach's Alpha, a measure of reliability, was computed for each of the survey themes. Table 2 shows the reliability indices for each theme of the survey.

Table 2

Summary of Reliability Indices (Cronbach's Alpha) for Perceived Personal and Team Skill Levels (n = 19)

Survey Theme	Number of Survey Items	Reliability
Personal Skill Level in Assuring Students Learn at High Levels	6	.86
Team Skill Level in Creating a Culture of Collaboration	8	.86
Team Skill Level in Focusing on Academic Results	5	.84

Theme verification. The narrative sections of this study provided real-life accounts of the perceptions experienced by participants. The description and interpretation of these themes were verified by triangulation. This process required the researcher to triangulate different data sources by examining evidence from all sources and using it to build justification for themes. Multiple sources of information increased the possibility that data collected were valid and led to the findings. Data collected from multiple sources occurred through the perceptions offered by participants.

Role of the Researcher

The role of the researcher was to ensure that the study, research, and survey are free from any bias. The researcher gathered and organized the data to determine perceptions of teachers regarding the PLC Process and ultimately answer the research questions for this study.

Summary

The purpose of this study was to determine how teachers assess their personal skill level in working collaboratively and focusing on academic results while working in a Professional Learning Community. Student achievement data, reported through Criterion Referenced Test scores (CRTs), was studied from teachers displaying both positive and negative perceptions of the PLC process. This determined if there is a relationship between PLC perceptions and student achievement scores.

Chapter Four

Results

Introduction

Designed as a concurrent mixed methods study, the researcher analyzed perceptions of general education teachers in the school district regarding their work within Professional Learning Communities. Data collection occurred through a web-based survey designed by the researcher.

The purpose of this study was to determine how teachers assess their personal skill level of working collaboratively and focusing on academic results while participating in a Professional Learning Community. Student achievement data, reported through criterion-referenced tests (CRTs), were examined from teachers displaying both positive and negative perceptions of the PLC process. The overarching question for the research study was: Do educator perceptions of their personal skill level in working collaboratively and focusing on results while participating in a Professional Learning Community have an effect on student achievement? The following sub-questions guided this study:

1. How do educators perceive their personal skill level in assuring that all students learn at high levels?
2. How do educators perceive their Professional Learning Team's skill level in creating a culture of collaboration?
3. How do educators perceive their Professional Learning Team's skill level in focusing on academic results?
4. What percentage of Professional Learning Teams meet their SMART goals?

5. Have student achievement scores increased while working within Professional Learning Communities?
6. Is there a relationship between educator perceptions of Professional Learning Communities and student achievement?

Survey Results

Pilot survey. Initially a pilot survey was sent to 48 teachers working at the middle school in which the researcher was employed. The pilot was conducted to determine if changes needed to be made to the survey. Based on teacher recommendations from the pilot survey, two changes were made to the original survey document. Survey Question 8.4 was rewritten for better clarification adding the words "is supported through research-based intervention" to the original question. An example was also provided to Survey Question 18 requesting SMART Goal completion data. After changes were made the final version of the survey was sent out to 682 teachers working at the elementary, middle, and high school levels in the school district.

Research survey. A total of 682 participants received an invitation to complete the research survey. The survey was sent to participants' through their school e-mail address with an explanation of the purpose of the study and a link to complete the web-based survey. A total of 247 participants (36%) responded to the survey with 174 of the 247 responding to every quantitative question.

Demographic Data Results

Demographic data was collected to gain information about the sample of participants in the study. The participants were asked to identify their gender, years of experience, the primary level in which they teach, primary teaching responsibility,

highest level of education, and the number of teachers working within their Professional Learning Community Team. The demographic data revealed that 83.4% of survey respondents were female and 15.8% were male. Participants' total years of experience ranged from 1 to 39. The respondents who participated primarily taught at the elementary level (61.5%) although 26.7% of respondents were middle level teachers and the remaining 11.3% of respondents were from the high school level. The respondents taught a variety of different subjects: Elementary – all subjects (53.4%), English (21.9%), Grade 6 – most subjects (7.7%), Math (8.9%), and 7.7% included themselves in the Other category. The majority of survey participants have earned a Bachelor's Degree (51.8%) while 47.8% have a Master's Degree. One participant had their Doctorate (.4%). Professional Learning Community Teams ranged in size from 2 to 14 teachers with 34.4% of PLC teams less than 5 members and 64.0% having 5 or more members. Table 3 shows the demographic data of the participants who responded to the research survey.

Findings of the Study

Introduction. Research questions for the study were based on the three themes identified in the literature about Professional Learning Communities: (Theme One) assuring all students learn at high levels, (Theme Two) working collaboratively in teams and (Theme Three) focusing on results (DuFour, 2004). The overarching question for this research were: Do educator perceptions of their personal skill level in working collaboratively and focusing on results while participating in a Professional Learning Community have an effect on student achievement? The findings are presented based on the six sub-questions guiding this research study.

Table 3

Demographic Data of the Participants Responding to the Research Survey (n = 247)

Demographic Data	Percentage
Gender	
Female	83
Male	16
Grade Level Taught	
Elementary	62
Middle	27
High	11
Subject Area Taught	
Elementary – all subjects	53
English	22
Math	9
6th grade – most subjects	8
Other	8
Years of Experience in Education	
1-10 years	35
11-20	28
21-30	26
31+	11
Highest Level of Education	
Bachelors	52
Masters Plus	48
Number of PLC Team Participants	
Less than 5 members	34
5 or more members	64

*Percentages may not add to 100% due to rounding error.

Findings by research question.

Research Question 1: How do educators perceive their personal skill level in assuring that all students learn at high levels?

Personal skill level. This section of the survey included 6 questions, where participants responded using a Likert scale selecting from (1) Strongly Disagree, (2)

Disagree, (3) Undecided, (4) Agree, (5) Strongly Agree and Not Applicable. Responses of Not Applicable were not included in mean scores. Their responses were concerning their perceptions of their personal skill level in assuring that all students learn at high levels. Mean results to individual sub-questions within Survey Question 8 including all participants are shown below in Table 4. The mean score of the total to all Survey Question 8 responses, including all participants, was 4.38.

Table 4

Mean and Standard Deviation Scores of Perceptions of Personal Skill Level (n = 247)

Personal Skill Level Sub-Questions	Mean	Standard Deviation
I know the essential objectives all students need to learn in my classroom.	4.73	.59
I know when each student has mastered the essential objectives.	4.53	.66
I have a plan for responding to students who experience difficulty.	4.41	.69
My personal response for students who struggle is supported through researched based intervention.	4.18	.76
My personal interventions require students to devote extra time to skills to assure mastery.	4.31	.75
I provide enrichment for those students who have already mastered the content.	4.11	.92
Total Personal Skill Level	4.38	.56

Participant demographic data for Survey Question 8 was disaggregated to determine statistical scores for all question responses in the following areas: highest level of education, level of current teaching responsibility, primary curriculum area of current teaching responsibility, years of teaching experience, gender, and the number of members

in each participant's PLC team. Due to the multiple categories from participants in the demographic areas including years of teaching experience and the number of PLC team members' responses were grouped for accurate disaggregation of data. There were 224 total participants responding to Survey Question 8 (see Table 5 for Survey Question 8 results by demographic data).

Table 5

Mean and Standard Deviation Scores of Personal Skill Level by Demographic Characteristics (n = 224)

Demographic Category	N	Mean	Standard Deviation
Level Of Education			
Bachelors	112	4.35	.55
Masters +	112	4.42	.56
School Level			
Elementary	134	4.45	.55
Middle	62	4.30	.61
High	27	4.26	.40
Curriculum Area			
Elementary	117	4.47	.56
6th Grade	18	4.45	.37
English	52	4.22	.63
Math	20	4.24	.46
Other	16	4.34	.43
Years of Experience			
1-10	78	4.24	.62
11-20	63	4.48	.42
21-30	57	4.47	.60
31+	25	4.42	.48
Gender			
Male	37	4.31	.58
Female	186	4.40	.55
Number of PLC Team Members			
Less than 5	77	4.40	.51
5 or more	144	4.38	.59

Perceived personal strengths. This question (as reflected in **Survey Question 9**) asked teachers to describe the personal strengths that they bring to the classroom that allow students to learn at high levels. Narrative comments from 156 teachers who responded to this question were originally coded into 7 themes (see Appendix B for complete list of codes). From this list of codes, teacher responses were narrowed to 4 themes including (1) Instruction, (2) Experience, (3) Expectations, and (4) Collaboration. Teachers responding to this survey question can be categorized by school level, gender, curriculum area and level of education. Elementary teachers (n = 79) represented 55% of those participating in this question. Middle level teachers (n = 40) signified 28% and high school teachers (n = 24) made up 17% of respondents. There were 118 (83%) females and 25 (17%) males providing their perceptions. Curriculum areas represented include the following; elementary course (n = 74, 52%), English (n = 39, 27%), math (n = 10, 7%), sixth grade courses (n = 13, 9%), and other (n = 7, 5%). Participants who responded to this question cited having bachelor's degrees (n = 69, 45%) and masters plus degrees (n = 84, 54%).

Instruction. Narrative comments linked to the theme of instruction included 70 teacher responses or 46% of the total comments given. Comments ranged from general to specific aspects of instruction used across all levels of education that assisted students in learning at high levels. Use of technology, multimodal instruction, frequent feedback, and remedial programs were listed as strengths teachers bring to the classroom. These individual quotes represent the voice of all respondents within this theme.

> I provide one on one support for students, teach the lesson in several different ways and I seek help for students who are not meeting goals.

> I use a kinesthetic approach to learning and quantum learning techniques in my classroom. I have the ability to break learning into steps and tie the lesson to previously learned skills, even across grade levels.
>
> I am an effective and efficient planner. I use results of individual students to guide my instruction so that my plans are needs based. I think it makes my instruction more effective in that way.

Experience. Teachers noted experience as a personal strength they bring to their classrooms that help their students succeed. Comments based on the theme of experience included 51 teacher responses or 34% of the total responses to this survey question. Experiences such as college training, professional development, and strategies developed over time were described as assisting teachers and students. Individual quotes representing the voice of all respondents within this theme were:

> I have taught at many levels; thus, I understand developmentally where the students are functioning. I use research-based curriculum to modify their learning to fit their needs.
>
> I have a deep knowledge of how children learn to read and write. I understand the language acquisition process. I know my enthusiasm for learning and teaching promotes an atmosphere of educational excitement in my classroom.
>
> I have experience dealing with students at all different levels of ability - many years of discovering interventions that work. I use research from the past and present that allow me to come up with interventions for different skills deficiencies.

Expectations. The next theme that appeared from the narrative comments of participants dealt with teacher expectations. This theme encompassed 14% of the total comments entered into the survey question and represented 21 teacher responses. Participants noted that having high expectations for all students in their classroom allowed them to learn at high levels. Comments summarizing the thoughts of all participants responding were:

> I set the expectations high and get students to achieve.

> I have high expectations for the students. I also help the students to take ownership over their own learning goals.
>
> I work hard to hold all of my students accountable. I see all of my students as individuals with individual needs and ways of learning.

Collaboration. The final theme of collaboration was derived from participants answering this question and included (n = 9) 6% of the total comments. Teachers described working collaboratively with students, letting them know they care, and building relationships as key strengths they bring to the classroom. These individual quotes represent the voice of all respondents within this theme.

> I'm motivating, intelligent, and creative. I have great rapport with kids and I know that those who connect with me will connect to the curriculum better.
>
> My devotion to students is crucial.
>
> I reach students at whatever level they enter my classroom. My teacher/student relationships are generally a strength in my teaching and this seems to help students in their learning as well.

Perceived personal needs. This question (as reflected in **Survey Question 10**) asked teachers to describe the skills they need to acquire to assist students to learn at high levels. Narrative comments from 137 teachers who responded to this question were originally coded into 12 themes (see Appendix C for complete list). From this list, teacher responses were narrowed to 5 themes including (1) Instruction, (2) Time, (3) Curriculum, (4) Experience and (5) Collaboration. Teachers responding to this survey question can be categorized by school level, gender, curriculum area and level of education. Elementary teachers (n = 77) represented 57% of those participating in this question. Middle level teachers (n = 38) signified 28% and high school teachers (n = 20) made up 15% of respondents. There were 113 (84%) females and 22 (16%) males

providing their perceptions. Curriculum areas represented include the following; elementary course (n = 68, 51%), English (n = 39, 29%), math (n = 11, 8%), sixth grade courses (n = 10, 7%), and other (n = 6, 4%). Participants who responded to this question cited having bachelor's degrees (n = 58, 44%) and masters plus degrees (n = 73, 55%).

Instruction. Narrative comments linked to the theme of instruction included 58 teacher responses or 42% of the total comments given. Most responses dealt with the need for additional research based strategies to use with students who have not yet mastered the curriculum. Other comments noted the need for additional ways to monitor student progress, create re-teaching activities and provide feedback. Individual quotes representing the voice of all respondents within this theme were:

> It is important to continue learning practices being used throughout the district. Teachers need to be aware of techniques and procedures which demonstrate growth.
>
> I need more ways to allow for the different learning speeds. I need ways to incorporate enrichment without distracting those who are not there yet.
>
> I need to expand my awareness of researched-based interventions to help struggling students.

Time. The next theme that appeared from the narrative comments of participants dealt with the concept of time. This theme encompassed 17% of the total comments entered into the survey question and represented 23 teacher responses. The need for additional time was described by teachers in a variety of ways including time management skills, time to meet with PLC team members, time to create re-teaching and re-testing materials and time to analyze data then make instructional changes. Comments summarizing the thoughts of all participants responding were:

> We need more time to plan and implement strategies/lessons for kids that are still struggling.

> I need to be able to find time for extra interventions. Also, as a newer teacher I still need to become more aware of the first signs of struggling and be able to be more proactive.
>
> I need time management techniques that allow me to meet the increased data collection requirements while still attending to the individual needs of each student.

Curriculum. Teachers noted aspects of their curriculum as a need within their classroom that may help their students succeed. Comments based on the theme of curriculum included 20 teacher responses or 15% of the total responses to this survey question. Curriculum concerns were based on the need for enrichment activities for students who have already mastered essential objectives. These individual quotes represent the voice of all respondents within this theme.

> I need to find a way to challenge students who already understand the material and need enrichment.
>
> I would like to have access to more enrichment activities for those who have mastered certain content.
>
> I need to be better prepared to deal with the mastered student, always having an educational plan for them, a next step.

Experience. The next theme that appeared from the narrative comments of participants dealt with teacher experience. This theme encompassed 14% of the total comments entered into the survey question and represented 19 teacher responses. Teachers noted several areas in which they feel they need more experience in their classrooms. Methods of student motivation, using formative and summative assessment data to create instruction, classroom interventions, and classroom management strategies were all included in the participant responses. Comments summarizing the findings for this theme were:

> I need the ability to motivate the most resistant learners, and a few more strategies for struggling learners.
>
> I need the ability to use formative assessment to know where students are and where they need to go.
>
> I feel that there is always more that I can improve on professionally. I need to learn more ways to implement tier 1 and tier 1 plus interventions in the classroom to help all students learn.

Collaboration. The final theme of collaboration was derived from participants answering this question and included (n = 17) 12% of the total comments. Teachers noted the need to work more collaboratively with students, to create better working relationships with specialists in their buildings and to develop cooperative plans with parents. These factors were seen by respondents to be needed for students to learn at high levels. These individual quotes represent the voice of all respondents within this theme.

> I could certainly work more on "pushing" parents to get involved. I don't spend a great deal of time on those parents who don't work on a partnership in regards to their child's progress and best interest.
>
> I need to continue building strong rapport with all students but especially with the students with mental illnesses. Sometimes these students will not allow you to educate them the way they need to be in the classroom."
>
> I need more Special Education help/support. It is difficult to deal with the large numbers of students who need extra help without their support.

Research Question 2: How do educators perceive their Professional Learning Team's skill level in creating a culture of collaboration?

Team's skill level. This section of the survey included 8 questions, where participants responded using a Likert scale selecting from (1) Strongly Disagree, (2) Disagree, (3) Undecided, (4) Agree, (5) Strongly Agree and Not Applicable. Responses of Not Applicable were not included in mean scores. Their responses were concerning

their perceptions of their PLC Team's skill level in creating a culture of collaboration. Mean results to sub-questions within Survey Question 11 including all participants are shown below in Table 6. The mean score of the total to all Survey Question 11 responses, including all participants, was 4.28.

Table 6

Mean and Standard Deviation Scores of Perceptions of Team's Skill Level in Collaboration (n = 247)

Team Skill Level in Collaboration: Sub-Questions	Mean	Standard Deviation
My PLC Team clarified roles and responsibilities.	4.10	.99
My PLC Team clarified norms.	4.25	.87
My PLC Team collectively decided upon essential outcomes linked to state/district standards.	4.50	.69
My PLC Team created common formative assessments related to the essential outcomes.	4.38	.71
My PLC Team created common summative assessments related to essential outcomes.	4.36	.77
My PLC Team determined common standards of mastery for proficiency of the essential outcomes.	4.32	.72
My PLC team examines the results from our common assessments.	4.35	.82
My PLC team develops new teaching strategies based on the common assessment results.	4.15	.92
Total Personal Skill Level in Collaboration	4.28	.66

Participant demographic data for Survey Question 11 was disaggregated to determine statistical scores for all question responses in the following areas: highest level of education, level of current teaching responsibility, primary curriculum area of current

teaching responsibility, years of teaching experience, gender, and the number of members in each participant's PLC team. Due to the multiple categories from participants in the demographic areas including years of teaching experience and the number of PLC team members were responses were grouped for accurate disaggregation of data. There were 217 total participants responding to Survey Question 11 (see Table 7 for Survey Question 11 results by demographic data).

Table 7

Mean and Standard Deviation Scores of Team Skill Level by Demographic Characteristics (n = 217)

Demographic Category	N	Mean	Standard Deviation
Level Of Education			
Bachelors	110	4.23	.63
Masters +	107	4.32	.64
School Level			
Elementary	130	4.37	.57
Middle	59	4.10	.75
High	27	4.17	.63
Curriculum Area			
Elementary	115	4.41	.53
6th Grade	17	4.09	.58
English	51	4.00	.83
Math	19	4.32	.44
Other	14	4.28	.56
Years of Experience			
1-10	75	4.23	.63
11-20	63	4.35	.60
21-30	54	4.25	.74
31+	24	4.29	.52
Gender			
Male	37	4.17	.58
Female	179	4.30	.65
Number of PLC Team Members			
Less than 5	76	4.30	.58
5 or more	138	4.26	.67

Perceived team collaboration strengths. This question (as reflected in **Survey Question 12**) asked teachers to identify the strengths of their PLC team in creating a culture of collaboration. Narrative comments from 143 teachers who responded to this question were originally coded into 12 themes (see Appendix D for complete list). From this list, teacher responses were narrowed to 4 themes including (1) Collaboration, (2) Experience, (3) Curriculum, and (4) Data. Teachers responding to this survey question can be categorized by school level, gender, curriculum area and level of education. Elementary teachers (n = 80) represented 56% of those participating in this question. Middle level teachers (n = 41) signified 28% and high school teachers (n = 21) made up 15% of respondents. One participant responding did not identify their school level. There were 120 (83%) females and 24 (17%) males providing their perceptions. Curriculum areas represented include the following; elementary courses (n = 74, 51%), English (n = 39, 27%), math (n = 12, 8%), sixth grade courses (n = 12, 8%), and other (n = 7, 5%). Participants who responded to this question cited having bachelor's degrees (n = 59, 41%) and masters plus degrees (n = 85, 58%).

Collaboration. Narrative comments linked to the theme of collaboration included 111 teacher responses or 78% of the total comments given. Most responses dealt with the sharing of instructional strategies, open communication, establishing trust, creating team norms and evenly dividing responsibilities. Other comments noted importance of being flexible and creative in planning individual interventions. These individual quotes represent the voice of all respondents within this theme.

> We meet everyday. We tackle all problems together. We also celebrate all of our strengths as a team because we achieve not as individuals, but as a team.

> We are at a point where we are willing to discuss our weak points and share students to help teach all kids.

> Our strength is being unified, listening and respecting each other. We are each strong in our own way but we discuss and decide what we feel is best for our students. I am blessed to be on this team.

Experience. The next theme that appeared from the narrative comments of participants dealt with the concept of experience. This theme encompassed 13% of the total comments entered into the survey question and represented 18 teacher responses. Teachers cited knowledge of their curriculum, use of multiple interventions, and persistence in student achievement. Comments listed summarize the thoughts of all participants responding.

> We have a wide variety of teaching experience and student knowledge that we use to assist one another in dealing with challenging situations.

> Collectively, our PLC has a number of years of experience teaching our PLC's subject area.

> We have been doing this forever. This is all I know.

Curriculum. Teachers noted aspects of curriculum as a strength within their PLC team that allows them to have positive collaboration. Comments based on the theme of curriculum included 9 teacher responses or 7% of the total responses to this survey question. Curriculum comments focused on the pacing schedule, selecting and/or creating assessments, strong knowledge of the curriculum area and cooperative planning. Individual quotes listed represent the voice of all respondents within this theme.

> We revise the pacing schedule to set aside time for re-teaching. We also develop plans for re-teaching strategies and activities geared toward objectives missed.

> We plan each quarter of the curriculum together.

> We all teach the same grade level and similar texts.

Data. The final theme that appeared from the narrative comments of participants dealt with the use of data. This theme encompassed 3% of the total comments entered into the survey question and represented 5 teacher responses. Use of assessments, open discussion regarding data, and planning based on results were ways that teachers described using data collaboratively within their PLC teams. Comments summarizing the findings for this theme were:

> Common formative and summative assessments allow us to disaggregate data and focus on what needs to be taught.
>
> We value our knowledge, access to data and time to work.
>
> We discuss collected data at almost every meeting and pin-point objectives that need to be re-taught/re-assessed and how we will accomplish it.

Perceived team collaboration needs. This survey question (as reflected in **Survey Question 13**) asked teachers to identify skills their PLC team needed to acquire to create a culture of collaboration. Narrative comments from 120 teachers who responded to this question were originally coded into 21 themes (see Appendix E for complete list). From this list, teacher responses were narrowed to 5 themes including (1) Collaboration, (2) Time, (3) Curriculum, (4) Instruction and (5) Data. Several teacher responses (n = 17, 14%) were categorized as Not Applicable. These comments described PLC team strengths rather than needs. Teachers responding to this survey question can be categorized by school level, gender, curriculum area and level of education. Elementary teachers (n = 69) represented 57% of those participating in this question. Middle level teachers (n = 34) signified 28% and high school teachers (n = 18) made up 15% of respondents. One participant responding did not identify their school level. There were 96 (79%) females and 25 (21%) males providing their perceptions. Curriculum areas

represented include the following; elementary courses (n = 63, 52%), English (n = 33, 27%), math (n = 10, 8%), sixth grade courses (n = 11, 9%), and other (n = 3, .02%). One teacher responding to this question did not record their curriculum area. Participants who responded to this question cited having bachelor's degrees (n = 46, 38%) and master's degrees (n = 73, 60%).

Collaboration. Teachers noted aspects of collaboration as a need within their PLC team. Comments based on the theme of collaboration included 45 teacher responses or 38% of the total responses to this survey question. Collaboration concerns were based on the need for developing trusting relationships, equal participation and valuing the worth of each team member. Other comments addressed the needs of focusing on SMART goals during meeting times, coming to PLC meetings ready to work, bringing in specialists for high need students, and the use of meeting agendas. These individual quotes represent the voice of all respondents within this theme.

> We need trust of individual abilities, and confidence in our styles, so that we give each other a chance to work our magic before we start shoveling the students into interventions. We knee jerk at every test result, pushing ourselves to get every student to 100%. We work harder than the students or their families towards having them achieve and acquire a quality education.
>
> We all need to come to each meeting truly ready to work. Sometimes that's not the case. The "responsibility to self and others" is important.
>
> We are continuing to work on looking at student data in a non-judgmental way. As well as sharing strategies and transitioning kids to make sure they are getting a different teaching perspective when being re-taught. We are also continuing to work on trusting one other and creating that professional efficacy among the team.

Time. The next theme that appeared from the narrative comments of participants dealt with the need for time. This theme encompassed 22% of the total comments entered into the survey question and represented 26 teacher responses. Teachers noted several

areas in which they feel they need more time to create better team collaboration. Planning lessons, creating assessments, developing re-teaching, re-testing and enrichment materials, and analyzing student data all take PLC team time. Paperwork is another factor in each PLC team meeting that contributes to less time for collaboration. Comments listed summarize the findings for this theme.

> Rather than skills, we need time to work together to develop materials and lessons. We spend a great deal of time filling out forms and calculating statistics as directed by our administrative team.
>
> We have the skills. The only thing we need is more new time, not time added to our current 50 plus hour week, but NEW time. If we want PLCs to be effective, we need to give teachers time by eliminating some other responsibilities.
>
> Sometimes we don't dive in deep enough due to lack of time. We can also get hung up on the little details that misguide us from our objective.

Curriculum. Teachers noted aspects of their curriculum as a need within their classroom that may help their students succeed. Comments based on the theme of curriculum included 15 teacher responses or 13% of the total responses to this survey question. Curriculum concerns were based on the need for common formative and summative assessments, more effective lessons, and focusing a deeper understanding of essential curricular objectives. These individual quotes represent the voice of all respondents within this theme.

> We need to further our examinations of common assessments and develop effective lessons for the less-than-par achievements.
>
> My PLC team needs to use formative assessments, not just summative. Then we need to discuss results and strategies that we are using to help the students progress. We are not having those types of conversations at all.
>
> We need less curriculum to teach at the elementary level. We need to go deeper with a curriculum not broad. Sometimes we only teach a skill of great difficulty one time and the children are required to master that objective on a test.

Instruction. The next theme that appeared from the narrative comments of participants dealt with instruction. This theme encompassed 11% of the total comments entered into the survey question and represented 13 teacher responses. Teachers noted several areas in which they feet better instruction would increase their team's collaboration. Methods of differentiation, use of technology, creative classroom scheduling, and increasing researched-based strategies were all included in the participant responses. Teachers also noted the need for including students in the assessment process and being tolerant of differences in teaching styles. Comments listed summarize the findings for this theme.

> I need better collaborative scheduling with special education teachers. Big picture scheduling to match what kids need to create better groupings and maximize our learning time.
>
> It isn't a matter of skill that would make us create a culture of collaboration, it's a matter of personality and differences in teaching style, etc.
>
> We work extremely well together and are very proactive in developing ideas and how to help our students. Becoming more knowledgeable on more ways to differentiate would be helpful.

Data. The final theme derived from participants answering this question dealt with the use of data and included (n = 4) 3% of the total comments. Teachers noted the need for better data analysis, more frequent sharing of data, using data to meet the needs of students and studying global mastery rather than mastery of individual skills. These factors were seen by respondents to be needed for improved PLC team collaboration. These individual quotes represent the voice of all respondents within this theme.

> Our data analysis skills need to be worked on.
>
> More sharing of data and working at sharing students creatively to meet their needs would help. We need to use our data to make instructional changes.

We need to take a more broad/global look at mastery learning, rather than a focus on specifics like subtraction, fractions in isolated applications.

Research Question 3: How do educators perceive their Professional Learning Team's skill level in focusing on academic results?

Team's skill level. This section of the survey included five questions, where participants responded using a Likert scale selecting from (1) Strongly Disagree, (2) Disagree, (3) Undecided, (4) Agree, (5) Strongly Agree and Not Applicable. Responses of Not Applicable were not included in mean scores. Their responses were concerning their perceptions of their PLC Team's skill level in focusing on academic results. Mean results to individual sub-questions within Survey Question 14 including all participants shown in Table 8. The mean score of the total to all Survey Question 14 responses, including all participants, was 4.24.

Table 8

Mean and Standard Deviation Scores of Perceptions of Team's Skill Level on Results (n = 247)

Team Skill Level on Results: Sub-Questions	Mean	Standard Deviation
My PLC Team is able to honestly confront the brutal facts regarding our students' achievement data.	4.39	.77
My PLC Team is able to determine our students' current level of achievement.	4.46	.66
My PLC Team focuses on student learning rather than on teaching.	4.13	.77
My PLC Team discusses evidence of student progress at each PLC Team meeting.	4.22	.86
My PLC Team members are able to hold each other accountable for the results that lead to continuous student improvement.	3.96	1.01
Total Team Skill Level on Results	4.24	.64

Participant demographic data for Survey Question 14 was disaggregated to determine statistical scores for all question responses in the following areas: highest level of education, level of current teaching responsibility, primary curriculum area of current teaching responsibility, years of teaching experience, gender, and the number of members in each participant's PLC team. Due to the multiple categories from participants in the demographic areas including years of teaching experience and the number of PLC team member responses were grouped for accurate disaggregation of data. There were 214 total participants responding to Survey Question 14 (see Table 9 for Survey Question 14 results by demographic data).

Perceived team achievement strengths. This survey question (as reflected in **Survey Question 15**) asked teachers to identify the strengths of their PLC team in focusing on academic results. Narrative comments from 130 teachers who responded to this question were originally coded into 15 themes (see Appendix F for complete list). From this list, teacher responses were narrowed to five themes including (1) Collaboration, (2) Data, (3) Achievement, (4) Curriculum and (5) Experience. Teachers responding to this survey question can be categorized by school level, gender, curriculum area and level of education. Elementary teachers (n = 76) represented 58% of those participating in this question. Middle level teachers (n = 36) signified 28% and high school teachers (n = 17) made up 13% of respondents. One participant who responded did not identify their school level. There were 109 (83%) females and 21 (16%) males providing their perceptions. Again, one participant responding to this survey question did not identify their gender. Curriculum areas represented include the following; elementary courses (n = 73, 55%), English (n = 33, 25%), math (n = 9, 7%), sixth grade courses

Table 9

Mean and Standard Deviation Scores of Perceptions of Team Skill Level on Results by Demographic Characteristics (n = 214)

Demographic Category	N	Mean	Standard Deviation
Level Of Education			
Bachelors	108	4.19	.64
Masters +	106	4.29	.63
School Level			
Elementary	129	4.32	.60
Middle	57	4.18	.69
High	27	4.00	.62
Curriculum Area			
Elementary	114	4.34	.59
6th Grade	16	4.16	.65
English	50	4.00	.77
Math	19	4.17	.49
Other	14	4.45	.42
Years of Experience			
1-10	73	4.28	.62
11-20	62	4.31	.60
21-30	54	4.12	.73
31+	24	4.20	.53
Gender			
Male	35	4.19	.57
Female	178	4.25	.65
Number of PLC Team Members			
Less than 5	75	4.31	.53
5 or more	136	4.20	.69

(n = 9, 7%), and other (n = 7, 5%). Participants who responded to this question cited having bachelor's degrees (n = 57, 44%) and master plus degrees (n = 73, 56%).

Collaboration. Teachers noted aspects of collaboration as a strength within their PLC team that allows them to focus on academic results. Comments based on the theme of collaboration included 47 teacher responses or 36% of the total responses to this survey question. Areas of strength noted include open communication, honesty, trust and

dedication to team members. Other comments addressed the use of technology, sharing strategies, problem solving situations and data analysis. These individual quotes represent the voice of all respondents within this theme.

> We work together. We see all the students as "our" students, so if a student is not doing well, we work to help that child because they are a member of our "team", not just a member of one teacher's classroom. Our PLC is also focused – we focus on our SMART goals and continuously look at data for each individual student to determine our next step.
>
> We are open and honest with one another. We honestly care more about our students than about our personal image as teachers. We would like to cooperate at even greater levels with the other teams in our building.
>
> Every one believes all students can learn. We try to create intervention groups and re-teaching groups to continue to focus on the learning gaps/needs of students. We creating solid Tier 1 plus and Tier 2 instruction.

Data. The next theme that appeared from the narrative comments of participants dealt with the use of data in focusing on academic results. This theme encompassed 22% of the total comments entered into the survey question and represented 28 teacher responses. Teachers noted several areas in which their teams use data during PLC meetings. Many teachers commented on being prepared for discussions by bringing necessary data to meetings. Identifying strengths and weaknesses, determining areas of need and graphing results were other ways data was used to focus on academic results. Comments summarizing the findings for this theme were:

> We are able to look objectively at the students results and not take it personally against our teaching. We are open to seeing what worked for one teacher and maybe not another.
>
> Our data is very quantitative and easy to analyze. We did a good job of setting our measures of proficiency and discussing how we would report our data so that we could compare and analyze academic results.
>
> We are very data driven and always make sure that our instruction is based on the learning needs of our students.

Achievement. The next theme that appeared from the narrative comments of participants dealt with the concept of student achievement. This theme encompassed 18% of the total comments entered into the survey question and represented 24 teacher responses. Teachers cited knowledge of individual students, being student-centered, putting students first and having a drive to improve student achievement as strengths of their PLC team when focusing on academic results. Comments summarizing the thoughts of all participants responding were:

> We know each other's students. We can give suggestions and strategies to help each other to give students a better chance to achieve academically.
>
> We are student-centered, so that helps us keep our focus on their learning.
>
> We are able to go through each individual student's achievement through collecting evidence from meeting to meeting.

Curriculum. Teachers noted aspects of their curriculum as an area of strength in assisting their PLC team to focus on results. Comments based on the theme of curriculum included 19 teacher responses or 15% of the total responses to this survey question. Use of classroom assessments were mentioned most often by teachers within this theme. They discussed creating common assessments, using assessments, and analyzing assessment results. Teachers also noted the benefit of having an established curriculum as a strength in focusing on academic results of their students. These individual quotes represent the voice of all respondents within this theme.

> We all work to consistently make sure our assessments are the same and in sync with our smart goal and curriculum goals.
>
> We have developed strong summative and formative assessments.
>
> The district did a lot of the leg work as far as providing rubrics and exemplars which helped us focus on student achievement.

Experience. The final theme that appeared from the narrative comments of participants dealt with teacher experience. This theme encompassed 9% of the total comments entered into the survey question and represented 12 teacher responses. Professionalism, years of experience, time spent teaching a variety of curricular areas, and use of data to make instructional decisions were listed as ways teacher experience helps PLC teams to focus on achievement. Comments summarizing the findings for this theme were:

> We each have good experiences with kids. We are aware of what should be the "normal" achievements, behaviors, etc. for this age.
>
> We have taught a variety of classes and have a variety of experience. We have some great discussions about results of how students are achieving - or not achieving.
>
> The teachers on my team have experience identifying the current level of learning and focusing on those abilities to develop a plan of learning for the students.

Perceived team achievement needs. This survey question (as reflected in **Survey Question 16**) asked teachers to identify skills their PLC team needed to acquire to assist them in focusing on academic results. Narrative comments from 97 teachers who responded to this question were originally coded into 20 themes (see Appendix G for complete list). From this list, teacher responses were narrowed to six themes including (1) Instruction, (2) Time, (3) Collaboration, (4) Achievement, (5) Data and (6) Curriculum. Several teacher responses (n = 6, 6%) were categorized as Not Applicable. These comments described PLC team strengths rather than needs. Teachers responding to this survey question can be categorized by school level, gender, curriculum area and level of education. Elementary teachers (n = 57) represented 59% of those participating in this question. Middle level teachers (n = 24) signified 25% and high school teachers (n = 15)

made up 12% of respondents. One participant responding did not identify their school level. There were 83 (86%) females and 14 (14%) males providing their perceptions. Curriculum areas represented include the following; elementary courses (n = 53, 55%), English (n = 24, 25%), math (n = 7, 7%), sixth grade courses (n = 9, 9%), and other (n = 4, 4%). Participants who responded to this question cited having bachelor's degrees (n = 39, 40%) and masters plus degrees (n = 58, 60%).

Instruction. Narrative comments linked to the theme of instruction included 22 teacher responses or 23% of the total comments given. Teachers noted the need for additional support/strategies from the district level to use with students who have not yet mastered the curriculum. Materials to use for re-teaching and re-testing were also listed as needs to assist them in placing a focus on academic results. Regrouping strategies, professional readings, and cooperative learning techniques were also mentioned by survey participants. These individual quotes represent the voice of all respondents within this theme.

> How do we re-teach concepts that were not learned the first time? What strategies do we use?
>
> We are always looking for new ways to teach to each student's ability. We want to ensure mastery and want to try whatever it takes to get a particular student there.
>
> We don't necessarily need skills, but when we are told by the district that our teaching methods need to change to be sure that adequate progress is being made, it is difficult to focus on student learning rather than teaching.

Time. The next theme that appeared from the narrative comments of participants dealt with time. This theme encompassed 22% of the total comments entered into the survey question and represented 21 teacher responses. Teachers noted several areas in which they felt additional time would increase their team's focus on academic results.

Time to meet in PLC teams was mentioned most frequently. Participants stated this additional time could be used to analyze data, discuss results, plan for re-teaching and re-learning, create new instructional tools, and develop common formative and summative assessments. Other uses of time that were reported dealt with having additional time to use new strategies, more time for re-teaching and re-testing and time to meet with students regarding their results. Comments summarizing the findings for this theme were:

> The only thing we seem to need more of is time -- time to use the strategies we've developed, time to assess the students, time to prepare and analyze the data, etc.
>
> I don't see a lack of skills as much as a lack of time to go above and beyond what we need to do to prepare lessons and to meet with students for instruction that doesn't take away from other things.
>
> So, I'm a broken record--We have the skills, what we need is TIME to do the analysis, discuss the results, plan for re-teaching/learning, and for creating the new instructional tools.

Collaboration. Teachers noted aspects of collaboration as a need within their PLC team. Comments based on the theme of collaboration included 20 teacher responses or 21% of the total responses to this survey question. Collaboration concerns were based on the need for developing trusting relationships, focusing on student needs rather than personal needs, and being accountable for using the strategies developed in PLC Team meetings. Other comments addressed the needs to be willing to work together, improving communication and being more open to constructive criticism. These individual quotes represent the voice of all respondents within this theme.

> We need thicker skins. It is difficult for some to be critiqued without feeling criticized, no matter how positively couched are the feedback.

> We need a willingness to look at whole grade needs and collaboratively schedule re-teaching groups to meet needs instead of duplicating skill groups in our individual classrooms.
>
> My team needs to begin to collaborate to work for the good of 'our' children, not just 'their' children. My team is good at closing doors and doing their own thing.

Achievement. Teachers noted aspects of their student achievement as a need within their classroom that may help them focus on results. Comments based on the theme of curriculum included 11 teacher responses or 11% of the total responses to this survey question. Teacher responses focused on assisting students in becoming responsible for their own achievement, sharing strategies that have been proven successful, needing additional ways to help students at all levels and developing ways to motivate students who are underachieving. Individual quotes representing the voice of all respondents within this theme were:

> What do we do when they don't achieve? How do we help all students at all levels do their very best?
>
> We need to know how to go from the brutal facts that cannot be used as an excuse to actually helping a student who doesn't care or isn't present in the classroom to be successful.
>
> What we can teach the students to do to improve their own achievement? The teachers are working harder to improve achievement than the students.

Data. The use of data was another theme that emerged from participants responding to this survey question. Teachers reported the importance of data in order to allow their PLC team to focus on academic results. Comments based on this theme included 9 teacher responses or 9% of the total given. Responses varied from how to interpret data to organization of data and use of data to make instructional decisions. Teachers also reported that, at times, it is difficult to obtain district data for PLC work. Comments listed summarize responses for this theme.

> Navigating the district data warehouse to find information can be difficult. I need to learn to adjust charts on the computer so they are easier to read.
>
> I think that sometimes we like to sugar coat the real scores. I see this when it comes to math re-teaching. Some of us re-teach once and we move on when kids may really need more then one session of re-learning.
>
> We need to learn how to have professional conversations around real data and not heart felt opinions.

Curriculum. The final theme derived from participants answering this question dealt with curriculum and included (n = 7) 7% of the total comments. Developing curricular interventions, creating enrichment activities, finding engaging ways to re-teach concepts and the need for more common formative and summative assessments were mentioned by survey participants. These factors were seen by respondents to be needed for improving PLC teams' focus on academic results. Individual quotes representing the voice of all respondents within this theme were:

> We need to focus more on Tier 1 instruction and help each other at that level so that fewer of our students need Tier 1 plus or Tier 2 groups
>
> My team needs to understand the curriculum better and know how to be flexible with it to allow for further differentiated instruction.
>
> We need to find lessons that re-teach math objectives in a fun, yet meaningful way.

Research Question 4: What percentage of Professional Learning Teams meet their SMART goals?

SMART goals. This section of the survey (reflected in **Survey Questions 17, 18 and 19.**) included three open-ended questions where participants were asked to provide information, in short-answer format, regarding their most recent SMART goal, baseline data, completion data and successful strategies utilized throughout the PLC process. A total of 104 participants chose to enter information into this section of the survey. Of

those participants, 81% were female and 19% were male. The majority (56%) of the participants were from the elementary level, with 29% coming from middle level and 15% of participants working at the high school level. Curriculum areas represented from this group included elementary only (52%), sixth grade (7%), math (9%), English (30%), and the category of other (3%).

Results indicated that SMART goal measurement tools were derived from three distinct criteria: district based assessments, state based assessments or teacher-based assessments. The participants responding to this section of the survey reported 50% of the measurement tools to be district based. These assessments were typically comprised of criterion-referenced tests, timed computation assessments, district writing rubrics and district curriculum standards. Teacher based measurement tools were noted by 29% of participants. Assessments created by teachers included editing and revising quizzes, computation quizzes, fluency probes and student self-assessments. State based measurement tools were used by 12% of participants. Assessments administered due to state requirements included state writing and reading exams. Several participants, 9%, did not list a measurement tool in the information they provided regarding their SMART goal.

Of the teachers responding (n = 33), 32% reported meeting their SMART goal while (n = 19) 18% of participants reported that they did not meet their SMART goal. Several participants, (n = 52) 50%, had not yet completed their SMART goal and were not able to provide data regarding student performance after utilizing the PLC process. Data for participants meeting their SMART goal showed that 20 teachers (61%) worked at the elementary level. Eleven middle level teachers (33%) reported meeting their

SMART goal while two high school teachers (6%) had met their most recent SMART goal at the time of this survey. Teachers working within the elementary curriculum (n = 19, 57%) reported meeting SMART goals more frequently than all other curriculum areas. Female teachers (n = 26, 79%) reported meeting SMART goals more often than males (n = 7, 21%). Eight teachers with 1-10 years of experience (24%) reported meeting SMART goals while 10 teachers with 11-20 years of experience (30%) had met their most recent SMART goal at the time of this survey. PLC teams with 5 or more members (n = 19, 58%) had met goals more often than those working within teams with less than 5 members (n = 14, 42%).

The frequency of percentage of participants meeting SMART goals by demographic characteristics is similar to the demographic data for total participants. An example of this can be supported by looking at the demographic characteristic of school level. The total percentage of elementary teachers participating in the survey (62%) is significantly similar to the total percentage of elementary teachers meeting SMART goals (61%). The percentage of middle level teachers participating in the survey, 27%, can be compared to the 33% of middle level teachers who met SMART goals. While 11% of high school teachers participated in this survey only 6% reported meeting their SMART goals. A complete list of demographic data is represented in Table 10.

Strategies utilized by teachers who were successful in meeting their SMART goals were documented in this section of the survey. Table 11 includes a summary of strategies used by teachers who successfully met their SMART goal. Strategies are grouped by the following categories: Pre-Teaching, Instructional Strategies,

Table 10

Frequency of Percentage of Participants Meeting SMART Goals by Demographic Characteristics (n = 33)

Demographic Data	Raw Scores	Percentage
School Level		
Elementary	20	61
Middle	11	33
High	2	6
Curricular Area		
Elementary Classes	19	57
6th grade classes	2	6
English	9	28
Math	2	6
Other	1	3
Gender		
Female	26	79
Male	7	21
Years of Experience		
1-10 years	8	24
11-20 years	10	30
21-30 years	9	27
31+ years	6	18
PLC Team Size		
Below 5 members	14	42
5 members and above	19	58
Education		
Bachelors Degree	15	45
Masters Plus Degree	18	55

Table 11

Strategies Utilized By Teachers Meeting SMART Goals

Pre-Teaching Strategies Pre-teach concepts Predicting before reading Introduce vocabulary Modeling Test Taking Skills	Instructional Strategies Cooperative Learning Daily Review/Exit Activity Reciprocal Teaching Reader's Theater Guided Reading
Re-teaching Strategies Use of common formative assessment Mini lessons based on student need Use of descriptive feedback Cyclical review of objectives Focus on Skill Deficits 1:1 Tutoring	Interventions Extra time to master concepts Use of rubrics Regrouping according to need Reorganizing daily schedules Math Club Tier 1 and Tier 2 interventions

*Skills are listed in descending order

Re-Teaching, and Interventions. A total list of strategies reported by teachers meeting SMART goals are listed in Appendix H.

Research Question 5: Have student achievement scores increased while working within Professional Learning Communities?

Student achievement. Data was collected from the State Department of Education website for the Midwestern school district used in this study. This data is available to the public and represents the overall performance percentage of all students who were tested. Results are required to be reported to the state at grades 4, 8 and 12. Tables 12 – 17 show the performance results of all students in the Midwestern school district on district reading and math standards. Other districts in the state are required to report state standards. This difference was allowed to occur after the State Department of Education approved the Midwestern school district's standards as equally or more rigorous than the

state standards. District Reading Standards, reported to the state, include the following assessments at each grade level:

District Reading Standards (Tables 12, 13, and 14)
- Grade 4: Vocabulary and Reading Comprehension
- Grade 8: Oral Presentations, Elements of Fiction, Elements of Nonfiction and Reading Comprehension, Research Skills
- Grade 12: Comprehension Skills, Research Skills, Elements of Fiction, Elements of Nonfiction, Oral Presentations

Reading proficiency scores in the Midwestern school district all show high student performance. As shown in Table 12, grade 4 reading scores have steadily increased over the past five years. Vocabulary scores have increased from 88% proficiency to 92%. Reading Comprehension scores have also increased from 85% proficiency to 91%.

Table 12

Performance Percentage on District Reading Standards by Academic Year and Grade Level for Students Meeting Proficiency Level

Academic Year	Grade	Vocabulary (%)	Reading Comprehension (%)
2008-2009	4	92	91
2007-2008	4	90	89
2006-2007	4	89	87
2005-2006	4	89	86
2004-2005	4	88	85

*Percentages were rounded up.

Table 13 displays achievement scores for students in 8th grade. Students in this age group have also shown improvement across all district standards within the last five years. Students displayed the most growth in the area of Elements of Fiction with an increase of 6% over the five-year reporting period.

Table 13

Performance Percentage on District Reading Standards by Academic Year and Grade Level for Students Meeting Proficiency Level

Academic Year	Grade	Oral Presentation (%)	Elements of Fiction (%)	Elements of Nonfiction (%)	Research Skills (%)
2008-2009	8	96	91	93	98
2007-2008	8	96	93	93	98
2006-2007	8	93	92	91	96
2005-2006	8	93	89	89	95
2004-2005	8	92	89	87	94

*Percentages were rounded up.

As shown in Table 14, grade 12 district reading standards increased in the areas of Research Skills, Elements of Fiction, Elements of Nonfiction and Oral Presentation. Proficiency scores in the category of Comprehension Skills decreased from 97% in 2004-2005 to 95% in 2008-2009.

District Math Standards in the Midwestern School district are reported to the state yearly just as the reading standards described previously. The Midwestern School District includes the following math assessments at each grade level:

Table 14

Performance Percentage on District Reading Standards by Academic Year and Grade Level for Students Meeting Proficiency Level

Academic Year	Grade	Comprehension Skills (%)	Research Skills (%)	Elements of Fiction (%)	Elements of Nonfiction (%)	Oral Presentation (%)
2008-2009	12	95	95	96	96	86
2007-2008	12	96	96	96	97	88
2006-2007	12	95	92	93	93	85
2005-2006	12	96	92	92	93	82
2004-2005	12	97	91	86	87	82

*Percentages were rounded up.

District Math Standards (Tables 15, 16, and 17)

Grade 4: Computation/Numeration and Number Sense, Geometry, Algebraic Concepts and Data Analysis

Grade 8: Computation/Numeration and Number Sense, Geometry, Algebraic Concepts and Data Analysis

Grade 12: Geometry and Algebra

Math proficiency scores in the Midwestern school district again all show high student performance although lower than student performance in the area of reading. As shown in Table 15, grade 4 math scores have steadily increased in the areas of Geometry and Algebra. The greatest gain, within the Algebra standard, increased from 77% proficiency to 84% over the past five years. Computation skills for 4th grade students have remained consistent during the reporting period.

Table 16 displays achievement scores for students in 8th grade. Students in this age group have also shown improvement across two of three district standards within the last five years. Students displayed the most growth in the area of Geometry with an

Table 15

Performance Percentage on District Math Standards by Academic Year and Grade Level for Students Meeting Proficiency Level

Academic Year	Grade	Computation (%)	Geometry (%)	Algebra (%)
2008-2009	4	80	86	84
2007-2008	4	78	87	85
2006-2007	4	79	87	83
2005-2006	4	82	82	82
2004-2005	4	80	80	77

*Percentages were rounded up.

Table 16

Performance Percentage on District Math Standards by Academic Year and Grade Level for Students Meeting Proficiency Level

Academic Year	Grade	Computation (%)	Geometry (%)	Algebra (%)
2008-2009	8	83	83	80
2007-2008	8	85	84	83
2006-2007	8	82	79	86
2005-2006	8	82	79	84
2004-2005	8	80	74	82

*Percentages were rounded up.

increase of 9% over the five-year reporting period. Computation skills for 8th grade students have shown an increase of 3% while Algebra skills declined by 2%.

As shown in Table 17, students in grade 12 have increased district math standards in all areas. Proficiency scores in Algebra have increased from 85-88% and Geometry has increased from 82-85% within the past five years.

Table 17

Performance Percentage on District Math Standards by Academic Year and Grade Level for Students Meeting Proficiency Level

Academic Year	Grade	Geometry (%)	Algebra (%)
2008-2009	12	85	88
2007-2008	12	88	91
2006-2007	12	79	84
2005-2006	12	81	86
2004-2005	12	82	85

*Percentages were rounded up.

Research Question 6: Is there a relationship between educator perceptions of Professional Learning Communities and student achievement?

To evaluate the relationship between teacher perceptions and student achievement we had to aggregate all the student achievement scores to the teacher or classroom level. Criterion-referenced test (CRT) scores in the areas of reading comprehension and math were used as the measure of student achievement. Criterion-referenced tests (CRTs) are intended to measure how well a person has learned a specific body of knowledge and skills. CRTs for this study were developed by local teachers to measure the district curriculum and standards. The CRT scores examined in this study were linked to the

elementary and secondary teachers in the Midwestern school district who participated in the survey.

Computing Services from the Midwestern school district assisted with the process of linking CRT data with individual teachers. Students in the district were linked with all teachers they had that school year. Teachers in the study were tagged as “math,” “English/language arts,” or “elementary.” Computing Services exported the survey data from Surveygizmo to PASW (SPSS) and linked the survey data to the CRT data using teacher identification numbers (IDs) in PASW. Teacher IDs were stripped from the file before it was sent to the researcher as the means for keeping teacher identification anonymous.

Teacher responses to educator perceptions of Professional Learning Communities (Survey Question 14) were correlated with the CRT results from the reporting years of 2007/2008 and 2008/2009 by school level. The correlated data is displayed below in Tables 18-23 by number, mean score, and standard deviation. Tables 20 and 23 show the correlation data for the change in student achievement over the two year period and educator perceptions.

Table 18 shows the correlations of educator perceptions of Professional Learning Communities with elementary student achievement for two school years along with the aggregated achievement scores at the teacher level. Elementary teachers participating in this study with Criterion referenced assessment scores linked to their survey results included 97 teachers in 2007/2008 and 111 in 2008/2009. Mean scores of student achievement in reading comprehension for both years was .86 and .83 for math. These achievement scores reflect the proportion of students at the class level that had scores

Table 18

Descriptive Statistics and Correlations of Professional Learning Communities with Elementary Student Achievement for Two School Years at the classroom level

Variable	Year	n	Mean	SD	Correlation with PLC Perception
CRT Reading	2007/08	97	.86	.16	.07
CRT Reading	2008/09	111	.86	.15	.12
CRT Math	2007/08	97	.83	.15	.07
CRT Math	2008/09	111	.83	.18	.00
PLC Perception		129	4.32	.60	1.00

above the expected district standard. The descriptive statistics reveal the stability of these measures at the classroom level for both reading and math performances. The correlation data all show a positive relationship however none of the correlations were statistically significant.

Figure 2 shows the scatterplot, (r = .12) for elementary teacher perceptions and reading comprehension scores from 2008/2009. A positive correlation would show a moderately strong linear association between the two variables. The data, as seen in the scatterplot, does not display a significant relationship. However, it does give us good information regarding student performance and teacher perceptions. The majority of elementary teachers had strong perceptions of their ability to focus on academic results with high CRT scores. Several classrooms had data points shown as outliers when they do not fit in the overall pattern in the scatterplot.

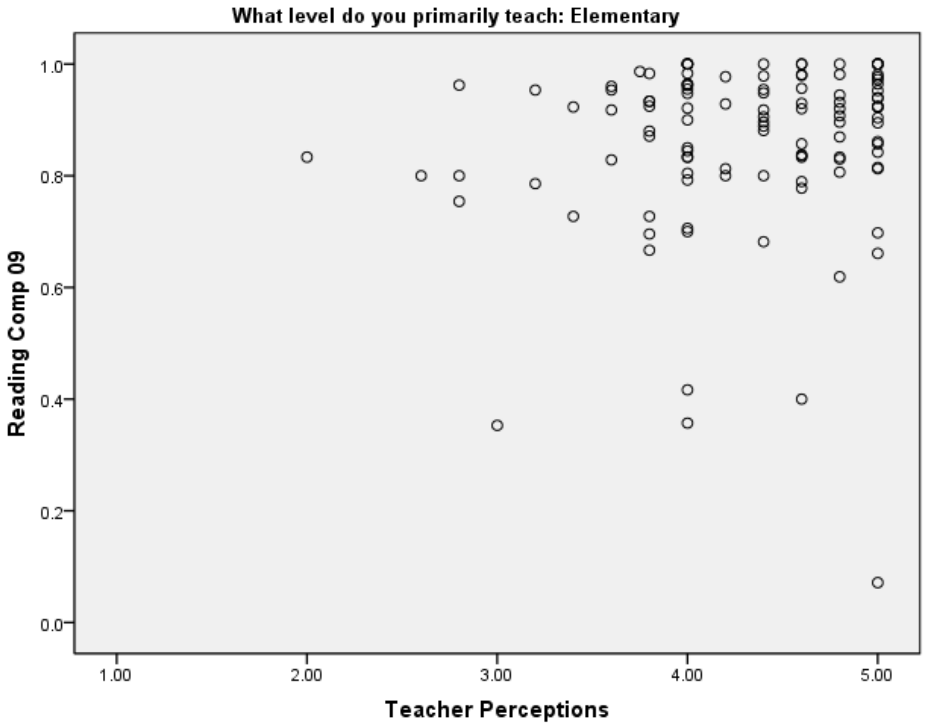

Figure 2. Elementary teacher perceptions and reading comprehension scores from 2008/09.

As seen in Figure 3, the scatterplot (r = .07) for elementary teacher perceptions and reading comprehension scores from 2007/2008 were more concentrated than in 08/09. A positive correlation, again shows a moderately strong linear association between the two variables. The data, again does not display a statistically significant relationship. Again, the majority of elementary teachers had strong perceptions of their ability to focus on academic results with high CRT scores with only 5 classrooms showing points outside of the expected relationship.

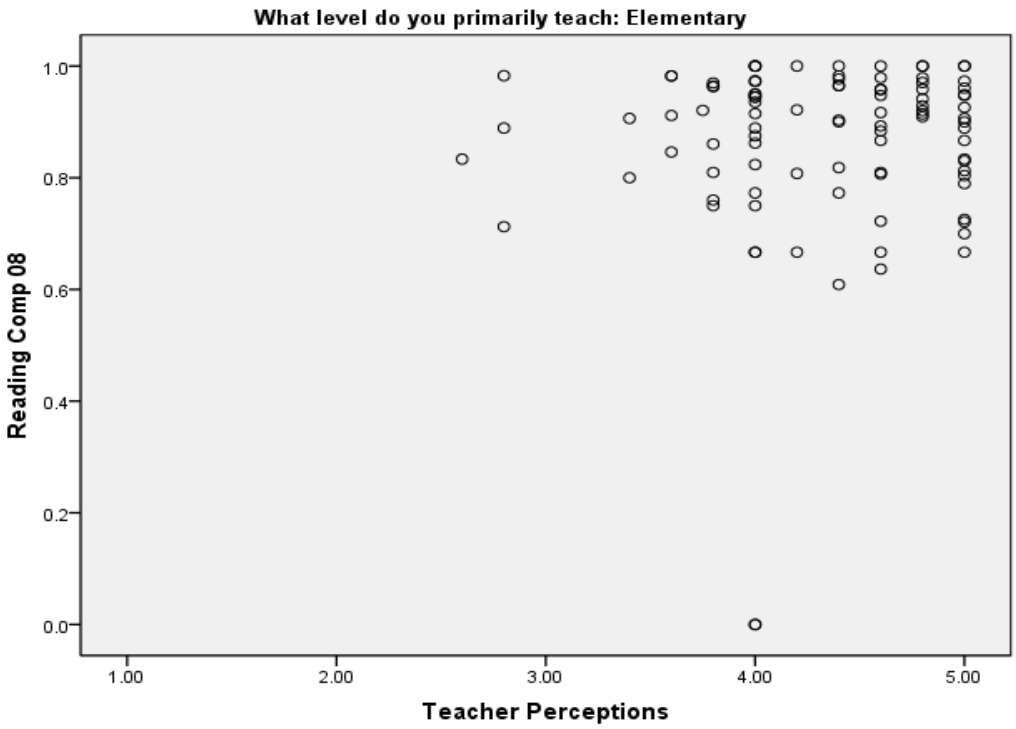

Figure 3. Elementary teacher perceptions and reading comprehension scores from 2007/08.

Figure 4 shows the scatterplot (with no correlation) for elementary teacher perceptions and total math scores from 2008/2009. This flat correlation score displays little linear association between the two variables. The data, as seen in the scatterplot, does not display a statistically significant relationship. However, it does give us good information regarding student performance and teacher perceptions. Individual data was dispersed more loosely with several classroom teachers having high perceptions of their ability to focus on results and low achievement scores as well as several classroom teachers having lower perceptions and high achievement.

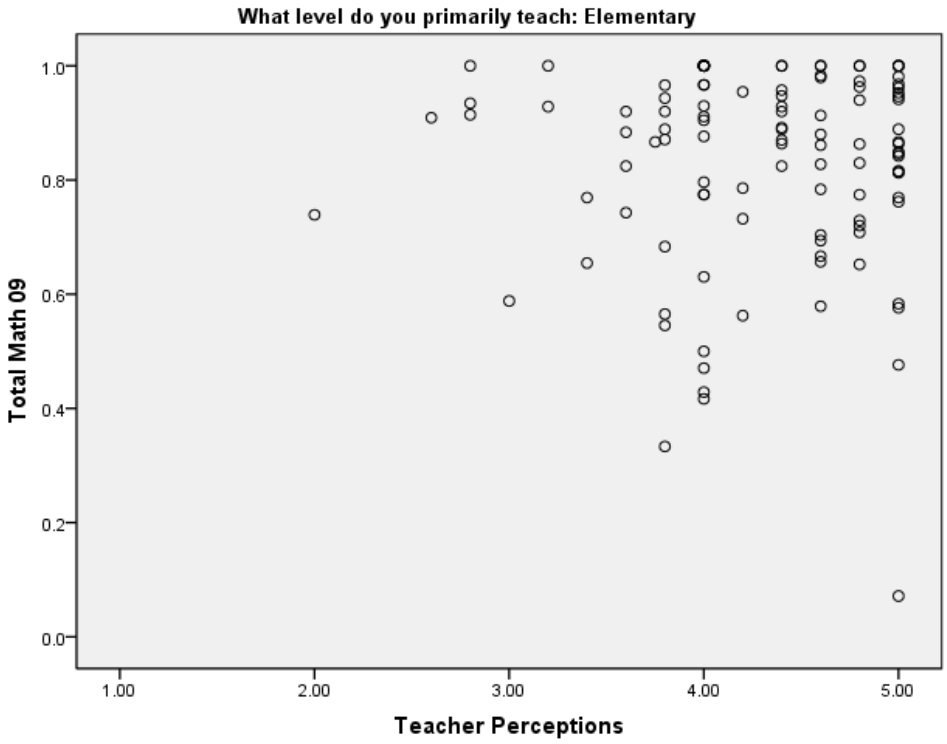

Figure 4. Elementary teacher perceptions and total math scores from 2008/2009.

As seen in Figure 5, the scatterplot (r = .07) for elementary teacher perceptions and total math scores from 2007/2008 are more concentrated than in 08/09. A positive correlation would show a moderately strong linear association between the two variables. The data, as seen in the scatterplot, does not display a statistically significant relationship. The majority of elementary teachers had strong perceptions of their ability to focus on academic results with high CRT scores. Approximately nine classrooms are shown as outliers meaning they do not fit the overall pattern seen in the scatterplot.

Table 19 shows the correlations of educator perceptions of Professional Learning Communities with elementary student achievement of .50 or higher for two school years. Elementary teachers participating in this study with criterion referenced assessment

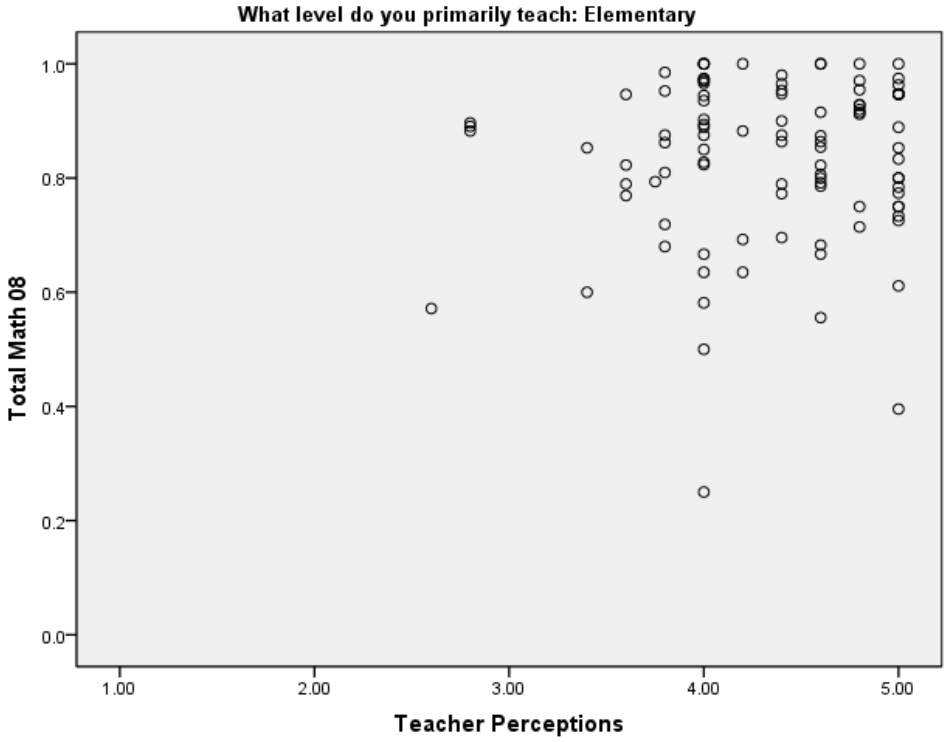

Figure 5. Elementary teacher perceptions and total math scores from 2007/2008.

Table 19

Descriptive Statistics and Correlations of Professional Learning Communities with Elementary Student Achievement of .50 or Higher for Two School Years

Variable	Year	n	Mean	SD	Correlation	PLC Perception
CRT Reading	2007/08	107	.88	.10	.01	4.33
CRT Reading	2008/09	123	.88	.10	.15	4.30
CRT Math	2007/08	106	.85	.12	.10	4.32
CRT Math	2008/09	120	.86	.13	.03	4.29

scores of .50 or higher linked to their survey results included a range of 106-123 teachers. Mean scores of student achievement in reading comprehension for both years was .88 and .85/.86 for math. These achievement scores reflect the proportion of students at the class level that had scores of .50 or higher than the district standard. The descriptive statistics reveal the stability of these measures at the classroom level for both math and reading performances. The correlation data all show a positive relationship however none of the correlations were statistically significant. Teacher perceptions ranged from 4.29-4.33 showing that they agree to strongly agree that they are able to focus on student achievement within their PLC teams.

Figure 6 shows the scatterplot (r = .15) for elementary teacher perceptions (m = 4.30) and reading comprehension scores (m = .88) from 2008/2009. Reading comprehension scores of .50 or higher were used for this correlation. This positive correlation would show little linear association between the two variables. The data, as seen in the scatterplot, does not display a statistically significant relationship. However, it does give us good information regarding student performance and teacher perceptions. The majority of classroom teachers had high perceptions of their ability to focus on results and high achievement scores. Several classrooms are seen to be outliers either showing high achievement with low teacher perceptions or low achievement and high teacher perceptions.

As seen in Figure 7, the scatterplot (r = .01) for elementary teacher perceptions (m = 4.33) and reading comprehension scores (m = .88) from 2007/2008. Reading comprehension scores of .50 or higher were used for this correlation. This flat correlation

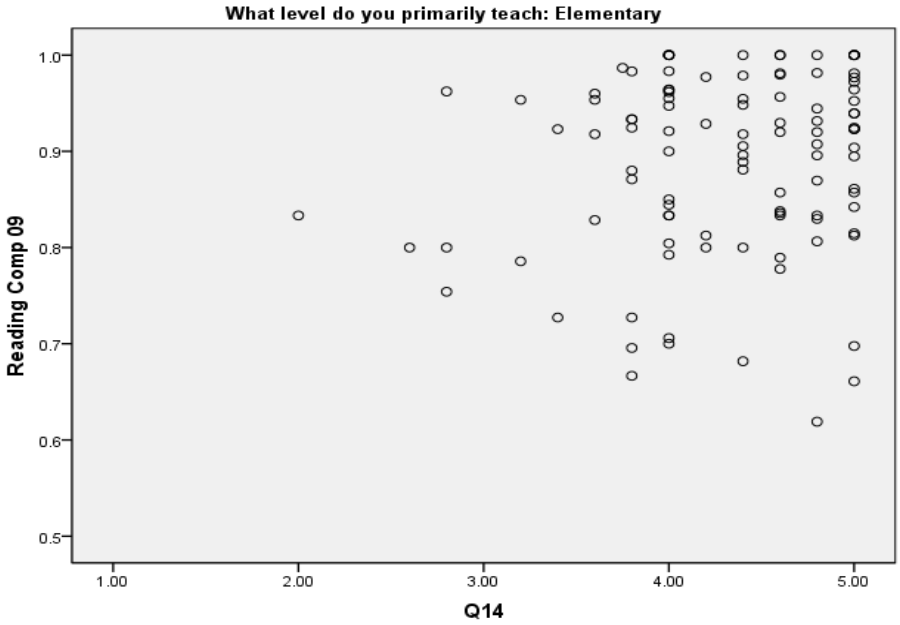

Figure 6. Elementary teacher perceptions (m = 4.30) and reading comprehension scores (m = .88) from 2008/2009.

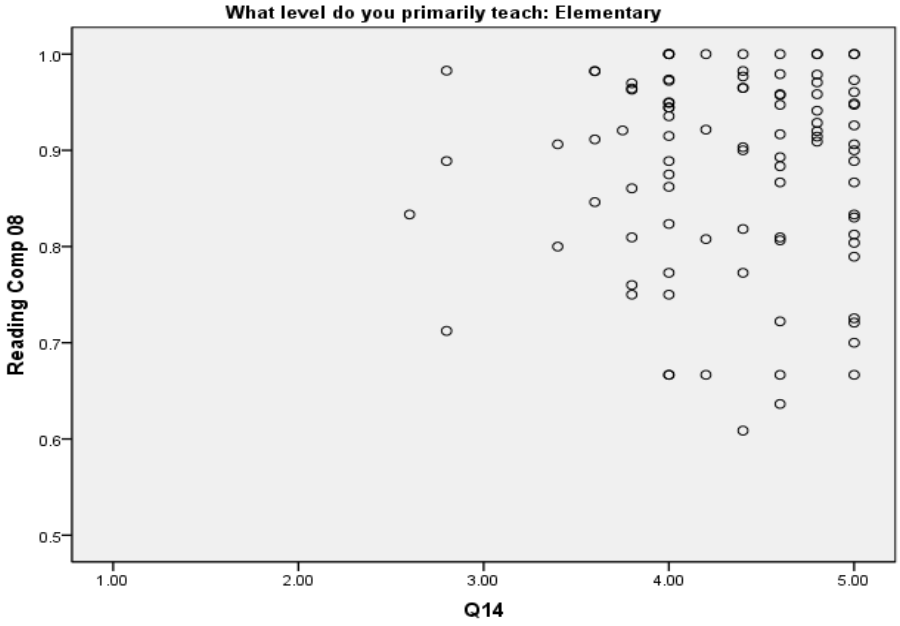

Figure 7. Elementary teacher perceptions (m = 4.33) and reading comprehension scores (m = .88) from 2007/2008.

shows little linear association between the two variables. The data, as seen in the scatterplot, does not display a statistically significant relationship. The majority of classroom teachers had high perceptions of their ability to focus on results and high achievement scores. Only a few classrooms are seen to be outliers showing high achievement with low teacher perceptions.

Figure 8 shows the scatterplot (r = .03) for elementary teacher perceptions (m = 4.29) and total math scores (m = .86) from 2008/2009. Total math scores of .50 or higher were used for this correlation. This flat correlation shows little linear association between the two variables. The data, as seen in the scatterplot, does not display a statistically significant relationship however it does give us good information regarding student performance and teacher perceptions. Data was dispersed more loosely than reading comprehension scores with several classrooms being reported as outliers or not fitting the overall pattern of the scatterplot.

As seen in Figure 9, shows the scatterploy (r = .10) for elementary teacher perceptions (m = 4.32) and total math scores (m = .85) from 2007/2008. Total math scores of .50 or higher were used for this correlation. A positive correlation would show little linear association between the two variables. The data, as seen in the scatterplot, does not display a statistically significant relationship however it does give us good information regarding student performance and teacher perceptions. Again, data is loosely dispersed with the majority of classroom teachers reporting high perceptions of their ability to focus on results and having high achievement scores. Several classrooms are seen to be outliers with this data set.

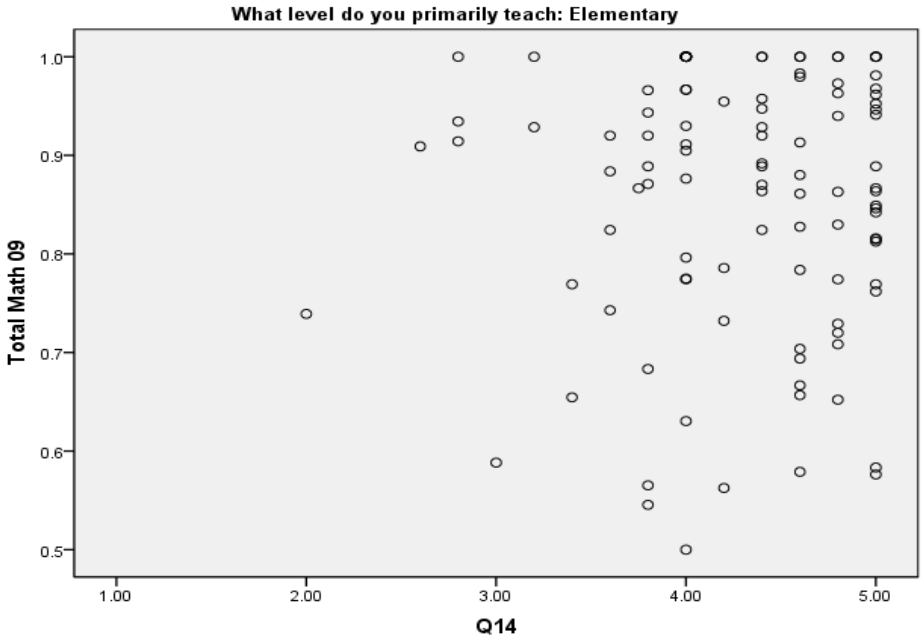

Figure 8. Elementary teacher perceptions (m = 4.29) and total math scores (m = .86) from 2008/2009.

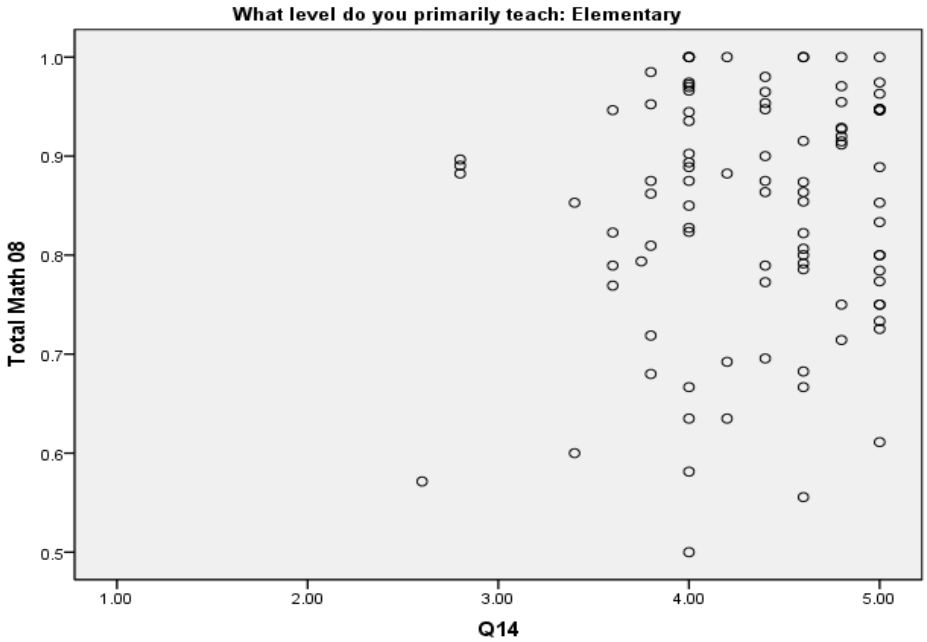

Figure 9. Elementary teacher perceptions (m = 4.32) and total math scores (m = .85) from 2007/2008.

The Criterion Referenced Test scores for reading comprehension of those elementary teachers participating in the study showed no increase from testing year 2007/2008 to 2009/2009. This stability in student achievement linked to individual teachers was found not to be statistically significant when compared to responses to survey question 14. The Criterion Referenced Test scores for math of those elementary teachers participating in the study showed an increase of .01 from testing year 2007/2008 to 2008/2009. This slight increase in student achievement linked to individual teachers was also not statistically significant when compared to responses to survey question 14. Elementary teacher perceptions of their skill level in focusing on academic results displayed a mean score of 4.32. This score shows that elementary teachers in the Midwestern school district agree to strongly agree that they are able to focus on student achievement within their PLC teams.

Table 20

Descriptive Statistics and Correlations of Professional Learning Communities with Elementary Student Achievement Change over Two School Years

Variable	Year	n	Mean	SD	Correlation with PLC Perception
CRT-Reading Growth	2008/09 – 2007/08	106	.00	.13	.05
CRT-Math Growth	2008/09 – 2007/08	106	.01	.12	-.10
PLC Perception		129	4.32	.60	1.0

Table 21 shows the correlations of educator perceptions of Professional Learning Communities with secondary student achievement for two school years along with the

Table 21

Descriptive Statistics and Correlations of Professional Learning Communities with Secondary Student Achievement for Two School Years

Variable	Year	n	Mean	SD	Correlation with PLC Perception
CRT Reading	2007/08	36	.88	.14	-.24
CRT Reading	2008/09	36	.88	.13	-.26
CRT Math	2007/08	17	.88	.07	.12
CRT Math	2008/09	19	.86	.13	.09
PLC Perception		84	4.12	.67	1.00

aggregate achievement scores at the teacher level. Secondary teachers participating in this study with Criterion referenced assessment scores linked to their survey results included 36 teachers in 2007/2008 and in 2008/2009 in the area of reading comprehension. Those participating with math scores included 17 teachers in 2007/2008 and 19 in 2008/2009. Mean scores of student achievement in reading comprehension for both years was .88. Math mean scores were .88 in 2007/2008 and .86 in 2008/2009. These achievement scores reflect the proportion of students at the class level that had scores above the expected district standard. The descriptive statistics reveal the stability of these measures at the classroom level for both math and reading performances. The correlation data for reading show a negative relationship for both years while data for math was positive. No correlation data was shown to be statistically significant.

Figure 10 shows the scatterplot (r = -.26) for secondary teacher perceptions and reading comprehension scores from 2008/2009. A negative correlation would show little

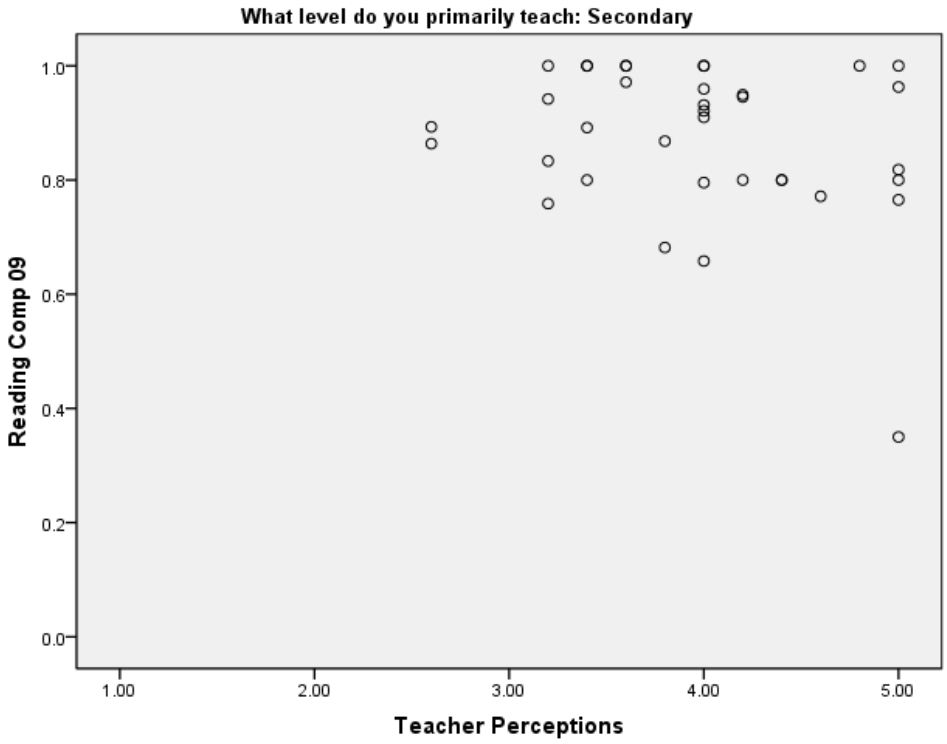

Figure 10. Secondary teacher perceptions and reading comprehension scores from 2008/2009.

linear association between the two variables. The data, as seen in the scatterplot, does not display a statistically significant relationship. However, it does give us good information regarding student performance and teacher perceptions. The majority of secondary teachers had strong perceptions of their ability to focus on academic results with high CRT scores. Few classrooms had data points shown as outliers as they do not fit in the overall pattern in the scatterplot.

As shown in Figure 11, the scatterplot (r = -.24) for secondary teacher perceptions and reading comprehension scores from 2007/2008. Again the negative correlation would show little linear association between the two variables. The data, as seen in the

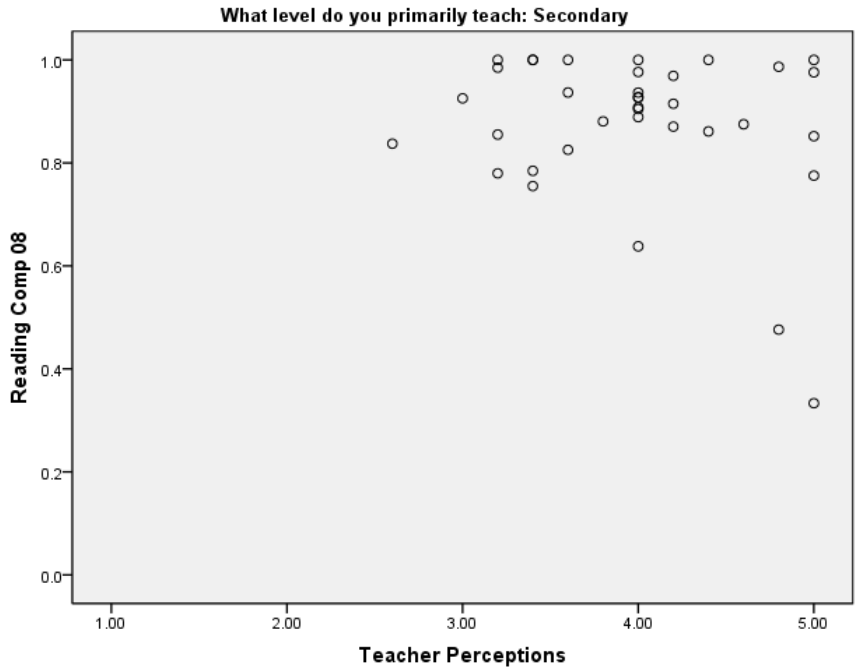

Figure 11. Secondary teacher perceptions and reading comprehension scores from 2007/2008.

scatterplot, does not display a statistically significant relationship. The majority of secondary teachers had strong perceptions of their ability to focus on academic results with high CRT scores. A few classrooms were shown to be outliers noting either high perceptions and low achievement or low perceptions and high achievement.

Figure 12 shows the scatterplot (r = ..09) for secondary teacher perceptions and total math scores from 2008/2009. A positive correlation would show little linear association between the two variables. The data, as seen in the scatterplot, does not display a statistically significant relationship. However, it does give us good information regarding student performance and teacher perceptions. Scatterpolt displays more loosely

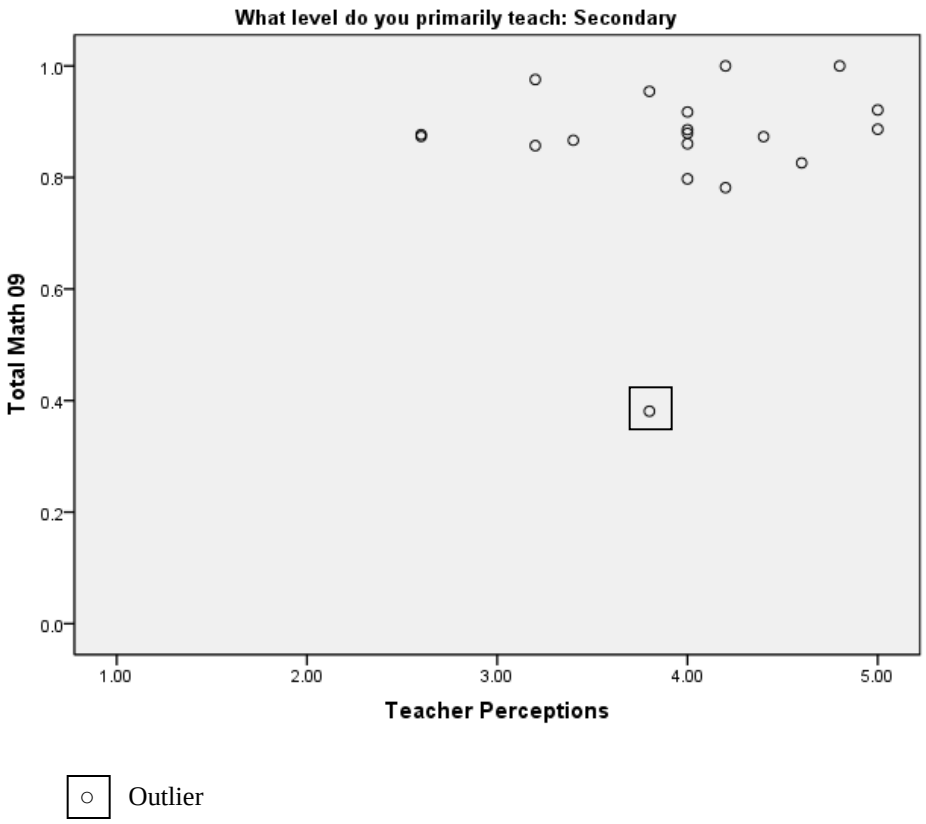

Figure 12. Secondary teacher perceptions and total math scores from 2008/2009.

than what was seen for reading comprehension. The majority of secondary teachers did have strong perceptions of their ability to focus on academic results with high CRT scores with only a very small number of classrooms shown as outliers.

Figure 13 shows the scatterplot (r = .12) for secondary teacher perceptions and total math scores from 2007/2008. A positive correlation again shows little linear association between the two variables. The data, as seen in the scatterplot, does not display a statistically significant relationship. The majority of secondary teachers had strong perceptions of their ability to focus on academic results with high CRT scores. A few classrooms show high achievement with low perceptions.

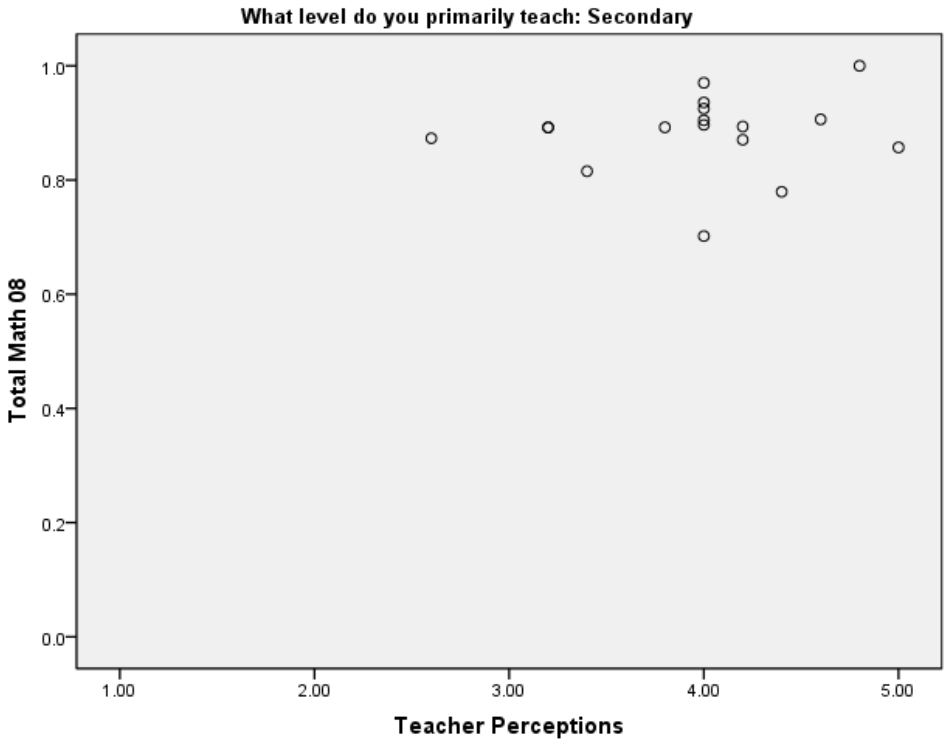

Figure 13. Secondary teacher perceptions and total math scores from 2007/2008.

Table 22 shows the scatterplot of educator perceptions of Professional Learning Communities with secondary student achievement of .50 or higher for two school years. Secondary teachers participating in this study with criterion referenced assessment scores of .50 or higher linked to their survey results included a range of 21-40 teachers. Mean scores of student achievement in reading comprehension was .90/.89 and .88 for math for both years. These achievement scores reflect the proportion of students at the class level that had scores of .50 or higher than the district standard. The descriptive statistics reveal the stability of these measures at the classroom level for both math and reading performances. The correlation data all show a positive relationship however none of the

Table 22

Descriptive Statistics and Correlations of Professional Learning Communities with Secondary Student Achievement of .50 or Higher for Two School Years

Variable	Year	n	Mean	SD	Correlation	PLC Perception
CRT Reading	2007/08	39	.90	.09	.09	3.92
CRT Reading	2008/09	40	.89	.10	-.12	3.93
CRT Math	2007/08	21	.88	.07	.12	3.96
CRT Math	2008/09	22	.88	.08	.10	3.94

correlations were statistically significant. Teacher perceptions ranged from 3.92-3.96 showing that they agree that they are able to focus on student achievement within their PLC teams.

Figure 14 shows the scatterplot (r = -.12) for secondary teacher perceptions (m = 3.93) and reading comprehension scores (m = .89) from 2008/2009. Reading comprehension scores of .50 or higher were used for this correlation. A negative correlation would show little linear association between the two variables. The data, as seen in the scatterplot, does not display a statistically significant relationship. However, it does give us good information regarding student performance and teacher perceptions. The majority of classroom teachers had high perceptions of their ability to focus on results and high achievement scores. Only a few classrooms are seen to be outliers showing high achievement with lower teacher perceptions.

As seen in Figure 15, scatterplot (r = .09) for secondary teacher perceptions (m = 3.92) and reading comprehension (m = .90) scores from 2007/2008. Reading comprehension scores of .50 or higher were used for this correlation. A positive

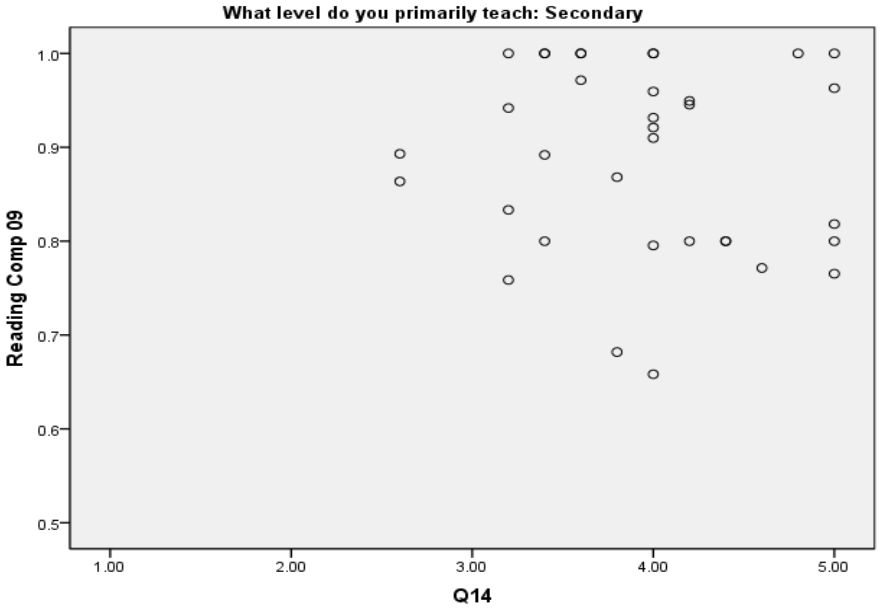

Figure 14. Secondary teacher perceptions (m = 3.93) and reading comprehension scores (m = .89) from 2008/2009.

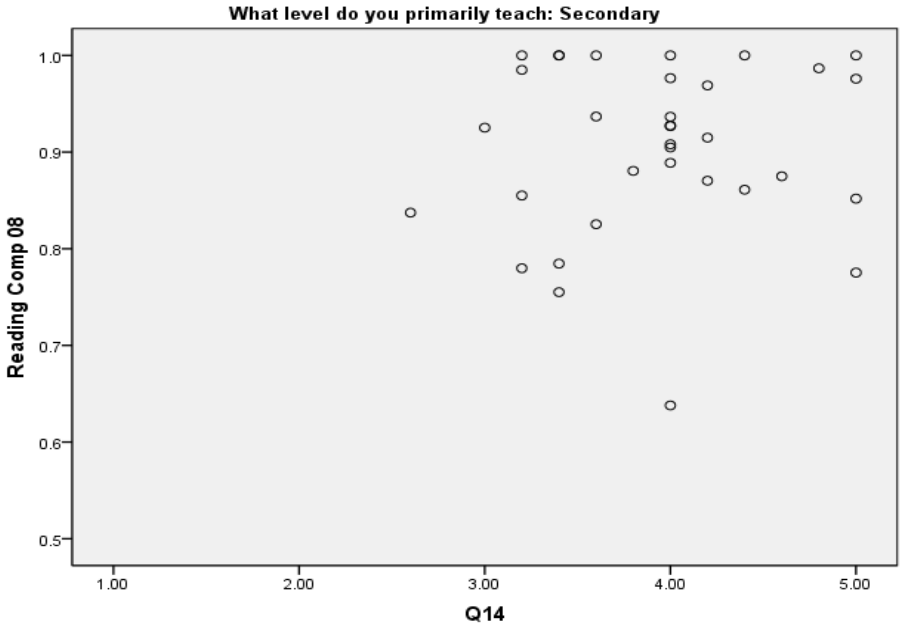

Figure 15. Secondary teacher perceptions (m = 3.92) and reading comprehension (m = .90) scores from 2007/2008.

correlation would show little linear association between the two variables. The data, as seen in the scatterplot, does not display a statistically significant relationship. More classroom teachers had high perceptions of their ability to focus on results and high achievement scores than in 2008/2009. Only a few classrooms are seen to be outliers showing high achievement with lower teacher perceptions.

Figure 16 shows the scatterplot (r = .10) for secondary teacher perceptions (m = 3.94) and total math scores (m = .88) from 2008/2009. Total math scores of .50 or higher were used for this scatterplot. A positive correlation would show little linear association between the two variables. Again, the data, as seen in the scatterplot, does not display a statistically significant relationship. The majority of classroom teachers had high perceptions of their ability to focus on results and high achievement scores. Only a few classrooms are seen to be outliers showing high achievement with low teacher perceptions.

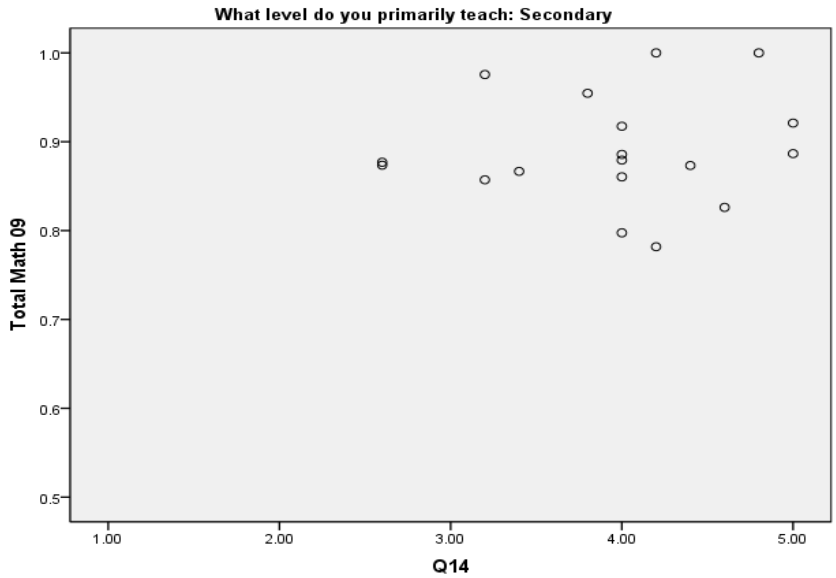

Figure 16. Secondary teacher perceptions (m = 3.94) and total math scores (m = .88) from 2008/2009.

As seen in Figure 17, the scatterplot (r = .12) for secondary teacher perceptions (m = 3.96) and total math scores (m = .88) from 2007/2008. Total math scores of .50 or higher were used for this correlation. A positive correlation shows little linear association between the two variables. The data, as seen in the scatterplot, does not display a statistically significant relationship. However, it does give us good information regarding student performance and teacher perceptions. The majority of classroom teachers had high perceptions of their ability to focus on results and high achievement scores with a few classrooms are seen to be outliers noting that they do not fit the overall pattern of the scatterplot.

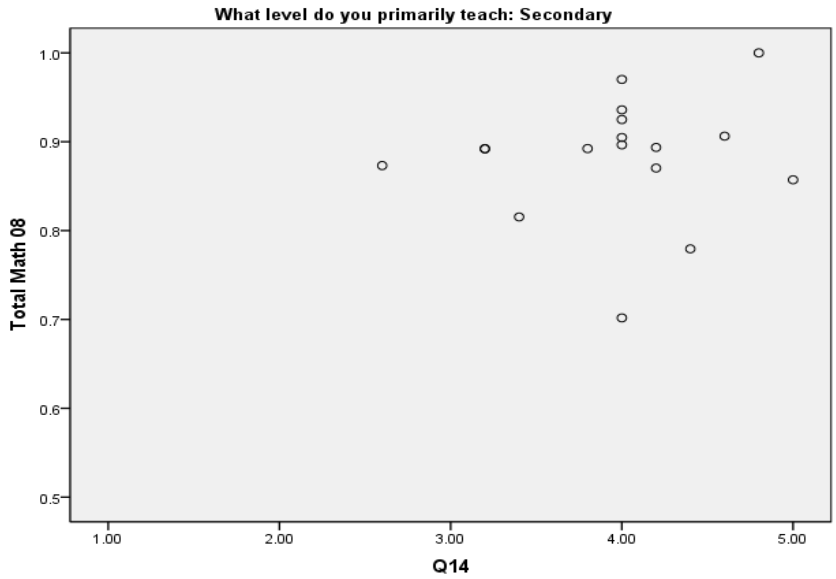

Figure 17. Secondary teacher perceptions (m = 3.96) and total math scores (m = .88) from 2007/2008.

The Criterion Referenced Test scores for Reading Comprehension of those secondary teachers participating in the study show no increase (m = .00) from testing year 2007/2008 to 2008/2009. The stability in student achievement linked to individual teachers was found not to be statistically significant when correlated to responses to survey question 14. The Criterion Referenced Test scores for Math of those secondary teachers participating in the study also show no increase (m = .00) from testing year 2007/2008 to 2008/2009. Again, stable student achievement scores linked to individual teachers was found not to be statistically significant when compared to responses to survey question 14. Secondary teacher perceptions of their skill level in focusing on academic results displayed a mean score of 4.12 which was found to be lower than the perceptions of elementary teachers participating in this survey. This score shows that secondary teachers in the Midwestern school district agree that they are able to focus on student achievement within their PLC teams. The lack of change in student performance at the proportion exceeding district expected scores reflects stability in having high patterns of performance for the teachers in this study. The student achievement mean proportion exceeding .80 indicates that more than 4 out of 5 students are meeting district standards for reading and math. Future studies should consider examining additional opportunities for learning to improve this community of learning relative standing with their peers. PLCs could focus on instructional strategies in future strategic plans for continuous school improvement efforts.

Table 23

Descriptive Statistics and Correlations of Professional Learning Communities with Secondary Student Achievement Change over Two School Years

Variable	Year	n	Mean	SD	Correlation with PLC Perception
CRT-Reading Growth	2008/09 – 2007/08	38	.00	.10	-.20
CRT-Math Growth	2008/09 – 2007/08	20	.00	.09	-.07
PLC Perception		84	4.12	.67	1.0

Research question summary. This study yielded data used to determine the perceptions of teachers in regard to the Professional Learning Community process. The major findings of this study were that the majority of teachers do perceive the PLC process as being beneficial to helping students increase student achievement. One respondent can be quoted as stating.

> I find PLC's invaluable. It is what teachers have been asking for over the years. A time to look objectively at data, set a goal and plan interventions is simply a logical and efficient way to improve student learning. Thank you for this opportunity.

Data obtained from the three themes of PLCs show teachers perceive their personal skill level in assuring students learn at high levels (m = 4.38) as a strength in this new way of teaching and learning. Team skill levels of creating a culture of collaboration (m = 4.28) were reported as higher than focusing on academic results (m = 4.24). Table 24 shows areas of strength and need obtained by survey participants and reported by PLC themes.

Table 24

Perceived Strengths and Needs of Survey Participants Reported by PLC Themes

PLC Theme	Strengths	Needs
Personal Skill Level in Assuring Students Learn at High Levels	Determine essential outcomes Know when students have mastered essential objectives Plan for responding to students who struggle Provide extra time Instruction Experience Expectations Collaboration	Research based intervention Enrichment Instruction Time Curriculum Collaboration Experience
Team Skill Level in Creating a Culture of Collaboration	Decide upon essential outcomes Create common formative and summative assessments Decide standards of mastery Examine results Collaboration Experience Curriculum Data	Roles Responsibilities Norms Collaboration Time Curriculum Instruction Data Develop new teaching strategies based on assessment results
Team Skill Level in Focusing on Academic Results	Confront brutal facts of student achievement Determine current level of achievement Collaboration Achievement Curriculum Experience	Hold each other accountable Instruction Focus on learning rather than teaching Achievement Discuss evidence of student progress Collaboration Time Data

Thirty-two percent of teachers participating in this study reported meeting their SMART goals. Results indicated that SMART goal measurement tools were derived from three distinct criteria: district based assessments, state based assessments or teacher-based assessments. Strategies utilized by teachers who were successful in meeting their SMART goals were grouped by pre-teaching strategies, re-teaching strategies, instructional strategies, and interventions.

Student achievement data was collected from the State Department of Education website for the Midwestern school district used in this study. All scores from the most recent reporting year, 2008-2009, show scores above 80% proficiency. Results for students in grades 4, 8 and 12 however, do show higher performance on reading comprehension district standards than on math district standards.

Elementary (n = 106) and secondary (n = 58) teachers participating in this survey had Criterion Referenced Test scores from reporting years of 2007/2008 and 2008/2009 that could be compared to their responses to Survey Question 14. This comparison was completed to determine if a relationship could be found between teacher perceptions of the PLC process and the achievement of students within their classrooms. Results show that elementary CRTs linked to individual teachers participating in this study increased in both reading comprehension (m = .0035) and math (m = .0105) with their average mean score for Survey Question 14 to be 4.32. Secondary teachers showed a decrease in their CRT scores for reading comprehension (m = -.0026) and an increase in the area of math (m = .0006) with their average mean score for Survey Question 14 to be 4.19. The results of all of these correlations were found not to be significant.

As with any study, results need to be shared and used considerately. Professional Learning Communities are new to this Midwestern school district and no studies of this nature have been conducted to make comparisons. Also the years of CRT data linked to individual teachers was limited to only 2 years with the available sample size of participants with CRT data being fairly small. Teacher perceptions within all three themes of PLCs were also found to be high with responses leaning heavily toward agree and strongly agree.

Significant research findings. Significant differences were found based on survey data of teacher perceptions of the PLC process with regard to school level and years of experience. These significances are noted in Tables 25 – 28 by survey question. There were no significant differences found for gender, level of education, curriculum area or PLC team size. The responses to the survey were coded on a scale of 1-5, one being strongly disagree, two being disagree, three being undecided, four being agree and 5 being strongly agree.

Significance by school level. This section will examine significant differences found in the survey data responses by school level for Survey Questions 8, 11 and 14. Due to the differences in participants at elementary, middle and high school levels, data was disaggregated by elementary and secondary with middle level teachers being included in the group of secondary teachers.

Survey question 8. There was a significant difference $F(3, 219) = 2.974$, $p = <.05$ (Table 25) between school level and how teachers perceive their personal skill level in assuring students learn at high levels. Using a 2-tailed t-Test, differences were found between elementary teachers ($M = 4.45$, $SD = .55$, Cohen's $d = .29$) and secondary

Table 25

Significant Differences in Item 8 School Level Groups

Q8: Since professional learning communities have been implemented in your building rate your personal skill level in assuring that all students learn at high levels.				
School Level	N	M	SD	Cohen's d
Elementary	134	4.45	.55	.29
Secondary	89	4.29	.55	

teachers (M = 4.29, SD = .55, Cohen's d = .29) indicating that elementary teachers perceive their personal skill level to be higher than secondary teachers.

Survey question 11. There was a significant difference F(3, 212) = .436, p = <.05 (Table 26) between school level and how teachers perceive their team's skill level in creating a culture of collaboration. Using a 2-tailed T-Test, differences were found between elementary teachers (M = 4.37, SD = .57, Cohen's d = .26) and secondary teachers (M = 4.12, SD = .71, Cohen's d = .26) indicating that elementary teachers perceive their personal skill level to be higher than secondary teachers.

Table 26

Significant Differences in Item 11 School Level Groups

Q8: Since professional learning communities have been implemented in your building rate your personal skill level in assuring that all students learn at high levels.				
School Level	N	M	SD	Cohen's d
Elementary	130	4.37	.57	.26
Secondary	86	4.12	.71	

Survey question 14. There was a significant difference F(3, 209) = 1.082, p = <.05 (Table 27) between school level and how teachers perceive their team's skill level in focusing on academic results. Using a 2-tailed T-Test, differences were found between elementary teachers (M = 4.32, SD = .60, Cohen's d = .31) and secondary teachers (M = 4.11, SD = .67, Cohen's d = .31) indicating that elementary teachers perceive their personal skill level to be higher than secondary teachers.

Table 27

Significant Differences in Item 14 by School Level Groups

Q14: Since professional learning communities have been implemented in your building rate your Professional Learning Team's skill level in focusing on academic results.

School Level	N	M	SD	Cohen's d
Elementary	129	4.31	.60	.31
Secondary	84	4.11	.67	

Significance by years of experience. This section will examine significant differences found in the survey data responses by total years of experience in education for Survey Question 8.

Survey question 8. There was a significant difference F(3,219) = 2.974, p = <.05 (Table 28) between years of experience and how teachers perceive their personal skill level in assuring students learn at high levels. Using Tukey's HSD, Post Hoc differences were found between teachers with 1-10 years of experience (M = 4.24, SD = .62, ES = .48) and teachers with 11-20 years of experience (M = 4.48, SD = .42, ES = .48) indicating that teachers with 11-20 years of experience perceive their personal skill level to be higher than those with 1-10 years of experience.

Table 28

Significant Differences in item 8 by Years of Experience in Education Groups

Q8: Since professional learning communities have been implemented in your building rate your personal skill level in assuring that all students learn at high levels.				
Years of Experience in Education Group	N	M	SD	ES
1-10 Years	78	4.24	.62	.48
11-20 Years	63	4.48	.42	

Summary

The purpose of this study was to determine how teachers assess their personal skill level of working collaboratively and focusing on academic results while participating in a Professional Learning Community. Student achievement data, reported through criterion-referenced tests (CRTs), were examined from teachers displaying both positive and negative perceptions of the PLC process. The overarching question for the research study was: Do educator perceptions of their personal skill level in working collaboratively and focusing on results while participating in a Professional Learning Community have an effect on student achievement?

The survey was divided into four parts: (1) teachers' perceptions of their personal skill level in assuring students learn at high levels; (2) teachers' perceptions of their PLC team's skill level in creating a culture of collaboration; (3) teachers' perceptions of their PLC team's skill level in focusing on academic results; and (4) PLC team SMART goals including progress monitoring methods and successful strategies utilized. Responses to survey parts 1-3 were coded on a scale of 1-5, one being strongly disagree, two being disagree, three being undecided, four being agree and 5 being strongly agree.

A pilot survey was sent to 48 teachers working at the middle school in which the researcher was employed prior to sending out the final survey to a total of 682 participants. A total of 247 participants (36%) responded to the survey with 174 responding to every quantitative question.

Survey – Personal skill level. Teachers who participated in this part of the survey perceived their personal skill level in assuring students learn at high levels to be a mean score of 4.38. The sub-questions asked teachers if they felt they knew the essential objectives all students needed to learn in their classroom and if they knew when each student had mastered the objectives. Teachers also identified if they had a research based intervention plan for students who experience difficulty and if they provide enrichment to those students who master content more quickly.

Participants noted determining essential outcomes, knowing when students have mastered essential objectives, creating a plan for responding to students who struggle, providing extra time to master content, use of instructional strategies, experience, having high expectations, and use of collaboration as areas of personal strength within this theme. Needs that were reported by participants include more research based interventions, assistance with enrichment, additional instructional strategies, more time, experience and assistance with collaboration.

Of significance, teachers with 1-10 years of experience perceived their skill level to be lower than those with more years of service. Elementary teachers also indicated that they perceive their personal skill level to be higher than secondary teachers.

Survey – Team skill level of collaboration. The survey asked teachers how they perceived their team's skill level of collaboration. Sub-questions included clarifying

roles, responsibilities and norms. Teachers also identified if their PLC team had collectively decided upon essential outcomes linked to state/district standards. Data was also collected regarding the development of common formative and summative assessments, determining common standards of mastery, examining results of assessments, and developing new teaching strategies based on the common assessment results. Teachers perceived their team's skill level in this area to be a mean score of 4.28.

Strengths documented by respondents for collaboration include collectively deciding upon essential outcomes, creating common formative and summative assessments, deciding upon common standards of mastery, and examining assessment results. Teachers also noted collaboration, experience, viable curriculum and use of data as strengths within this theme. Participants listed areas of need as having clearly defined roles, responsibilities and norms. Other areas of need included collaboration, time, curriculum, instructional strategies, data and developing new teaching strategies based on assessment results.

Significant differences within the theme of collaboration occurred between curriculum area and school level. Elementary teachers reported their team skill level in creating a culture of collaboration as being higher than both secondary teachers and English teachers.

Survey – Team skill level of results. Teachers who participated in this part of the survey perceived their PLC Team's skill level in focusing on academic results to be a mean score of 4.24. The sub-questions within this theme included being able to honestly confront the brutal facts regarding student achievement, determining students' current level of achievement, placing a focus on learning rather than teaching. Teachers also

noted if their PLC team discussed student progress at each PLC team meeting, and whether they held each other accountable for the results that lead to continuous student improvement.

Participants included confronting the brutal facts of student achievement, determining students' current level of achievement, use of collaboration, student achievement, having a guaranteed and viable curriculum, and experience as areas of strength within this theme. Teachers noted areas of need that included holding each other accountable, focusing on learning rather than teaching, and discussing evidence of student progress. Other areas of need reported were instructional strategies, collaboration, having more time, and assistance with obtaining and using data.

Of significance, teachers at the elementary level perceived their skill level to be higher than those teaching English. Elementary teachers also indicated that they perceive their personal skill level to be higher than secondary teachers.

Survey - SMART goals. A total of 104 teachers participated in this section of the survey. Of the teachers responding (n = 33), 32% reported meeting their SMART goal while (n = 19) 18% of participants reported that they did not meet their SMART goal. Approximately one-half of the participants, (n = 52) 50%, had not yet completed their SMART goal and were not able to provide data regarding student performance after utilizing the PLC process. Results indicated that SMART goal measurement tools were derived from three distinct criteria: district based assessments, state based assessments or teacher-based assessments. Strategies utilized by teachers who were successful in meeting their SMART goals were grouped by pre-teaching strategies, re-teaching strategies, instructional strategies, and interventions.

Survey – CRT data. Data from 164 teachers (elementary = 106, secondary = 58) were used within this section of the survey. These teachers had Criterion Referenced Test scores from reporting years of 2007/2008 and 2008/2009 that could be linked to their responses to Survey Question 14 noting their focus on academic results. This comparison was completed to determine if a relationship could be found between teacher perceptions of the PLC process and the achievement of students within their classrooms. CRT scores for reading comprehension and math were found to be stable at the elementary level with a mean score of 4.32 for elementary teacher responses to Survey Question 14 linked to CRT results. Secondary teacher CRT scores showed a decrease in math while reading comprehension scores remained stable. Secondary teachers with CRTs linked to their survey responses showed a mean score of 4.19 to Survey Question 14. Results of all correlations were found not to be significant.

Survey - Demographic characteristics. The majority of teachers responding to the survey were female (83%), worked at the elementary level (62%), taught the elementary curriculum (53%) and had Bachelor Degrees (52%). Participants had from 1-39 years of experience and from 2-14 members in their PLC team.

Closing. In conclusion, the study found that teachers in the Midwestern school district perceived their skill level in implementing PLCs to be strong with their highest skills falling within their ability to assure students learn at high levels. Teachers are meeting SMART goals and using additional strategies to increase student performance through their PLC team meetings. Students in the district have consistently high achievement in both reading and math. Although data reporting teacher skill levels and CRT results all show high scores, no statistically significant relationship could be found.

Chapter Five

Summary of Findings, Discussion, and Recommendations

Introduction

The purpose of this study was to determine how teachers assess their personal skill level of working collaboratively and focusing on academic results while participating in a Professional Learning Community. Student achievement data, reported through criterion-referenced tests (CRTs), were examined from teachers displaying both positive and negative perceptions of the PLC process. The overarching question for the research study was: Do educator perceptions of their personal skill level in working collaboratively and focusing on results while participating in a Professional Learning Community have an effect on student achievement? The following sub-questions guided this study:

1. How do educators perceive their personal skill level in assuring that all students learn at high levels?
2. How do educators perceive their Professional Learning Team's skill level in creating a culture of collaboration?
3. How do educators perceive their Professional Learning Team's skill level in focusing on academic results?
4. What percentage of Professional Learning Teams meet their SMART goals?
5. Have student achievement scores increased while working within Professional Learning Communities?
6. Is there a relationship between educator perceptions of Professional Learning Communities and student achievement?

The population of the study included elementary, middle and high school teachers teaching in English/language arts or math and participating in an English/language arts or math Professional Learning Community. The teachers included were working in grades 3 through 5 (420 teachers), middle school teachers in grade 6 (90 teachers), teachers in grades 7-8 (96 teachers) and teachers in grade 10 (76 teachers) in the Midwestern school district. The only school not included in the study was the middle school where the researcher was employed.

A total of 682 participants received an invitation to complete the research survey. A total of 247 participants (36%) responded to the survey with 174 of the 247 responding to every question quantitative question.

The survey design allowed for the researcher to specifically analyze the perceptions of regular education teachers regarding the PLC process.

Discussion

The researcher was able to learn about teacher perceptions of the PLC process and connect the literature to the three themes of PLCs included in the study: (a) assuring students learn at high levels, (b) creating a culture of collaboration, and (c) focusing on academic results. Survey results also revealed participant SMART goal data, successful strategies used in meeting SMART goals and degree of improvement. The data provided valuable information in the development and use of PLCs among the schools in a Midwestern school district. Since each school operates their PLCs somewhat differently the data provided information on how to unify the process so that it functions effectively in all schools and the additional supports that teachers need in order to allow this to occur.

Theme 1: Assuring students learn at high levels. Findings (as noted for **Survey Question 8**) indicated that teacher's perceptions in assuring students learn at high levels averaged 4.38 when looking at the overall mean score for all participant responses. Four areas of strength were recognized when examining sub-questions for this theme. Teachers reported being skilled at knowing the essential outcomes all students need to learn in their classrooms (mean score = 4.73), knowing when students have mastered the essential objectives (mean score = 4.53), having a plan for responding to students who experience difficulty (mean score = 4.41) and using personal interventions that require students to devote extra time to assure mastery (mean score = 4.31). Using research based interventions (mean score = 4.18) and providing enrichment for students who have already mastered the content (mean score = 4.11) were areas in which teachers may need additional support to allow students to learn at high levels.

DuFour (2002) supports the first theme in PLCs and states, "If you are serious about transforming your school into a Professional Learning Community, learning must become its first priority" (p. 39). Every teacher must determine what is essential for students to learn in their classrooms. Teachers must also know when students have mastered content and have a response plan for those who need to relearn and retest. Time and support must be regarded as variables while learning is consistently held constant. Collective responses such as a Pyramid of Interventions, Guided Studies, and Mentor Programs are all strategies supported through the literature to assure students learn at high levels (DuFour, 2004).

Teachers in the Midwestern school district showed they have strong skills in assuring students learn at high levels. These skills link directly to the literature when

implementing the first theme in PLCs. Teachers effectively displayed these skills by putting a focus on individual student learning, utilizing research-based interventions, providing additional time and support and creating enrichment opportunities for students who have already mastered content. High skill levels can be attributed to yearly staff development of PLCs, teacher dedication and building-level PLC leadership. Teacher perceptions reported through this research study solidified the literature supporting the first theme of PLCs.

Theme 2: Creating a culture of collaboration. Findings (as noted for **Survey Question 11**) indicated that teacher's perceptions in creating a culture of collaboration averaged 4.28 when looking at the overall mean score for all participant responses. Teachers noted 5 areas of strength within the sub-questions for this theme. Collectively deciding upon essential outcomes linked to state/district standards was the sub-question with the highest mean score (mean score = 4.50). Other areas of strength included creating common formative assessments (mean score = 4.38), creating common summative assessments (mean score = 4.36), examining results from common assessments (mean score = 4.35) and determining common standards of master (mean score = 4.32). Three additional sub-questions: (a) clarifying roles and responsibilities (mean score = 4.10), (b) clarifying norms (mean score = 4.25), and (c) developing new strategies based on common assessment results (mean score = 4.15) were perceived by participants to be a need in their PLC team creating a culture of collaboration.

The literature supports the findings from Theme 2 as the second priority within the PLC process. Fullan (2001) describes the importance of relationship building and knowledge creation and sharing. He states that, "relationships are job two" as you can't

get anywhere without them (p. 51). Trust must be established through relationship building in order to develop effective PLC teams. Teachers who share their expertise with team members allow learning to take place in context causing new knowledge to become specific and usable. The use of norms (DuFour, 2002) also plays a significant role in creating a culture of collaboration. They are the deeply written protocols that determine how PLC teams conduct their meetings and describe the commitments team members make to each other. Developing common assessments and using student achievement data to inform instruction are crucial aspects to successful, collaborative teams (Reeves, 2007).

PLC teams within the Midwestern school district have created collaborative, working relationships. They have collectively decided upon academic outcomes, created common assessments and analyzed student data together. The academic basis of collaboration within Theme 2 is clearly developed within the district. PLC teams could improve their collaboration by consistently developing team norms, and creating roles and responsibilities for each team member. These skills were perceived to be lower than those with academic based criteria. The district could assist PLC teams by providing additional instructional strategies to implement based on student assessment data. Survey data shows the Midwestern school district has successfully created a culture of collaboration. Again, the research study supports the overall practice of collaboration found in the literature.

Theme 3: Focus on academic results. Findings (as noted for **Survey Question 14**) indicated that teacher's perceptions in focusing on academic results averaged 4.24 when looking at the overall mean score for all participants. Teachers identified 2 areas,

honestly confronting the brutal facts regarding our student's achievement data (mean score = 4.39) and determining student's current level of achievement (mean score = 4.46) as strengths of their PLC team in focusing on academic results. Discussing evidence of student progress at PLC team meetings (mean score = 4.22), focusing on learning rather than teaching (mean score = 4.13), and holding each other accountable for the results that lead to continuous student improvement (mean score = 3.96) were perceived to be PLC team needs.

The third PLC priority supported by DuFour (2002) asks teams to determine their student's current academic reality and create SMART goals to improve upon that reality (p. 44). Goals that are specific, measurable, attainable, results-oriented and time-bound help teachers to focus on results of each individual student. Data from common assessments must be easily accessible and openly shared among teachers who are working together toward the same SMART goals that represent higher levels of student learning. Having access to data enables teachers to make adjustments and do a better job of instructing their students (DuFour et al., 2006). When teams work together to establish measurable goals, collect and analyze their data and make instructional changes based on assessment results they produce results that "guide, goad and motivate groups of individuals" (Schmoker, 1996, p. 38).

Teachers in the Midwestern school district show they have well-developed skills in the area of focusing on academic results. These skills link directly to the literature noting the third theme in implementing PLCs. Teachers know their student's current level of achievement. Student achievement scores in the areas of reading and math have increased over the past five year reporting period which includes the timeframe that PLCs

were implemented at all school levels in the district. Reading scores surpass math at all reporting grade levels. The researcher attributes the progress to the rigorous focus on student learning while giving students the needed time to master essential objectives. This happens during the dedicated work that occurs in a Professional Learning Community. PLC teams in the district should strive to consistently hold each other accountable for the results that lead to continuous student improvement as this skill was the lowest reported on the survey. The findings from this theme of the research study solidify the literature by support the need to focus on the learning results of every individual student.

Relationship between Teacher Perceptions and Classroom Level Student Achievement

The purpose of this study was to determine if there was a relationship between educator perceptions of Professional Learning Communities and student achievement. Elementary (n = 106) and secondary (n = 58) teachers participating in this survey had Criterion Referenced Test scores from reporting years of 2007/2008 and 2008/2009 that could be correlated to their responses to Survey Question 14. This correlation was completed to determine if a relationship could be found between teacher perceptions of the PLC process and the achievement of students within their classrooms.

Elementary teachers participating in this study with CRTs linked to their survey results showed mean scores of student achievement in reading for both years to be .86 and .83 for math. Elementary teacher perceptions of their ability to focus on academic results (**Survey Question 14**) resulted in a mean score of 4.32. Correlation data for student achievement and elementary teacher PLC perception were positive but not

statistically significant. Secondary teachers showed mean scores of student achievement in reading comprehension to be .88 for both years. Math mean scores were .88 in 2007/2008 and .86 in 2008/2009. Secondary teacher perceptions of their ability to focus on academic results (**Survey Question 14**) resulted in a mean score of 4.12. Correlation data for student achievement and secondary teacher PLC perception were positive but not statistically significant

Results show that elementary CRTs linked to individual teachers participating in this study had no increase from testing years 2007/2008 to 2008/2009 for both reading comprehension (m = .00) and math (m = .01) with their average mean score for Survey Question 14 to be 4.32. This demonstrates stability in student achievement at the teacher or classroom level. Secondary teachers also showed no increase from testing years 2007/2008 to 2008/2009 in their CRT scores for reading comprehension (m = .00) and an increase in the area of math (m = .00) with their average mean score for Survey Question 14 to be 4.12. Again, this demonstrates stability in student achievement at the teacher or classroom level. The results of all of these correlations were found not to be statistically significant.

Survey data shows that teachers have high perceptions of their ability to focus on student within their PLC teams. Achievement scores reflect the proportion of students in each class that have scores above the expected district average in the areas of math and reading comprehension. Scores are stable with student achievement mean proportions exceeding .80 indicating that more than 4 out of 5 students are meeting district standards. Although no statistically significant relationships were found in this study, it is the researcher’s opinion that the stability in student performance reflects high patterns of

teacher commitment and skill level that can be attributed to the dedicated work they have completed within their Professional Learning Communities.

The correlation results between teacher responses to Survey Question 14 and their students' criterion referenced test scores must be looked at with careful consideration for several reasons: (a) there were only two years of CRT data linked to individual teachers to study, (b) there was a small sample size of teachers linked to CRT data, and (c) teacher perspectives of their skill level in focusing on academic results were all very high with no significant discrepancies.

Recommendations

This concurrent mixed-methods survey study looked at general education teachers' perceptions of the PLC process and its benefit in helping increase student achievement. The researcher has identified five recommendations for the Midwestern school district derived from the findings of this study.

Recommendation 1. District personnel need to look closely at the need for teachers to have additional time to work in PLC teams. This should happen at all school levels. Several respondents indicated this need, especially at the elementary and middle level. Three respondents firmly believing in this need for additional time stated,

> I think that it is interesting that elementary teachers only have PLC time one day per month and only one plan period a day. High school teachers have PLC every Tuesday and they have two plan periods a day. Why is this the case? If elementary teachers want to meet more (which we frequently do) we have to use our one plan period a day or we have to meet before or after school. Why is PLC not equally important to all grade levels and for all students?
>
> In middle school, we have very little time to work in our PLCs. There are tons of opportunities during the school day to collaborate, but the set aside time we get each month is very small and, often times, we are asked to do other things during this time that take away from the time we do have.

> So, I'm a broken record—We have the skills, what we need is TIME to do the analysis, discuss the results, plan for re-teaching/learning, and for creating the new instructional tools.

Time was mentioned as a need for multiple reasons. Participants noted needing time to meet in PLC teams, create common formative and summative assessments, analyze student data, develop re-teaching, re-learning and re-testing materials, make instructional changes based on student data and develop enrichment activities for those who have already mastered the essential objectives. Time management strategies were also mentioned as a need to assist in completing all tasks during PLC team meetings. Teachers in the Midwestern School District feel that meeting once a month is not an adequate amount of time to complete this critical work within the framework of PLCs.

Recommendation 2. Staff development opportunities need to be provided to teachers in the areas of instruction, use of research-based strategies and student motivation. Teachers reported the need for this support from the district level. Through PLCs, re-teaching occurs frequently within all curricular areas. Teachers are struggling to independently find new interventions to assist students in mastering content while motivating them to continue to work on skills that are difficult. Participants described their need for additional strategies in the following statements,

> We need new skills to increase student motivation . . . that is, having the students want to learn the material rather than force them to learn it.

> We are always looking for new ways to teach to each student's ability. We want to ensure mastery and want to try whatever it takes to get a particular student there.

> I need to expand my awareness of researched-based interventions to help struggling students.

Recommendation 3. The Midwestern School District should provide teachers with training in how to obtain and use data. Teachers noted frequent difficulty in

obtaining data from the district. Others reported not knowing what to do with the data they were given. Several teachers also described the need for district assistance in making instructional changes based on their student data. Staff development on use of the data warehouse and understanding data would allow teachers to make good use of the information they have thus leading to improved student achievement. Participant comments listed below show data to be an area in which they need district support.

> We need greater access to the data warehouse possibilities to truly analyze the test results to know how to interpret student scores.
>
> I need help navigating docu-share to find information and need to learn to adjust charts on the computer so they are easier to read. Help with the technological glitches that sometimes slow down our work would be appreciated.
>
> We need to learn how to have professional conversations around real data and not heart felt opinions.

Recommendation 4. Student achievement scores in the Midwestern School District used in this study are impressive. Reading performance on district standards from students at grades 4, 8, and 12 show scores at or above 90% proficiency with the exception of one standard, Oral Presentation (86% proficiency) reported at grade 12. These scores are inspiring and attributed to the dedication of the entire district in raising achievement. Math performance from students of the same grade levels, are not as high with proficiency scores reported to be 80-86%. It would be beneficial for the district to develop additional supports for students who struggle in the area of math in an attempt to bring reading and math proficiency performance closer together.

Recommendation 5. Administrators should provide continual staff development regarding the PLC process and what team members should be doing during meeting times. Teachers old and new need to understand the purpose of PLCs, how to establish

team roles, responsibilities and norms, and how to be a productive member of the team. This would ensure that all teachers feel comfortable with the PLC process and understand the role they play within their team. Participants shared concerns about the PLC process by stating,

> My PLC is slightly dysfunctional. I wish someone would notice and help out.
>
> PLCs are different in each school within our district. It is frustrating to hear from teachers in other schools that they are able to work to improve student learning while we must discuss our meager efforts to improve student learning because we are shackled with a format that does not help anyone.
>
> Even though my PLC is doing great—I hear stories of it not working in my building. In fact most people are not using the time for PLC work, but really using the time for other teacher duties.

A standard set of forms for each school level would also ensure that all buildings are requesting the same information from their staff. Teachers participating in this study felt that they spent much time during each PLC team meeting filling out forms. Having a standard set of forms that guide PLC teams through the SMART goal cycle would be beneficial to all teachers in the district.

> Filling out the forms the administration requires is frustrating and takes way too much of our time.
>
> We need to decrease the required paperwork side of PLC time so we have more time to develop strategies for our students.
>
> Every PLC we are given the same form to fill out. I feel like the time would be better spent if our administration would help us focus our energy with different questions over the course of the year.

Future Research

Professional Learning Communities have been recognized by educational experts and researchers as the newest alternative to school reform. The literature supports decreased teacher isolationism and increased collaboration between educators focusing

on student learning (DuFour & Eaker, 1998). In fact, the implementation has been noted as the most promising strategy for improving student achievement (DuFour, 2007). The literature provides much research on the effectiveness of PLCs however this study adds to the research by including teacher perceptions of the PLC process linked with student achievement data at the classroom level.

This study should be replicated by the Midwestern school district in the future in order to gauge the evolution of the perceptions of teachers regarding the PLC process as they continue to work to raise student achievement. It would be beneficial to survey all teachers in the district to determine how they implement PLCs and what they feel are the strengths and needs of this process. A longitudinal study could be conducted and data collected to determine if teacher perceptions of the PLC process change over time or as they gain more experience.

Each theme of this study could continue to be explored in the Midwestern school district to develop a greater understanding of teacher perceptions based on their ability to assure students learn at high levels, work collaboratively with their PLC team and focus on academic results. Results of this study based on the three themes of PLCs show teachers perceive their personal skill level in assuring students learn at high levels ($m = 4.32$) as a strength in this new way of teaching and learning. Team skill levels in creating a culture of collaboration ($m = 4.28$) were reported as higher than focusing on academic results ($m = 4.24$). Additional research could be done to understand why teachers rated these themes so differently.

Areas of significant difference found in this study could also be explored at greater depth. Elementary teachers in this study perceived their skill level within all three

themes to be significantly higher than secondary teachers. Additionally, teachers with 11-20 years of experience perceived their skill level in assuring students learn at high levels to be significantly higher than teachers having 1-10 years of experience. Additional research could be done to determine why teachers within these categories had significantly different perceptions of their skill levels. This study could also be replicated utilizing a variety of research methods. Observations of PLC team meetings, detailed analysis of SMART goals and instructional interventions, use of quantitative data or qualitative teacher interviews would allow the Midwestern school district to determine why some PLC teams are more effective that others.

Additional research conducted at a later time in the Midwestern school district would allow more years of Criterion-Referenced Tests scores to be linked to individual teachers perceptions. The current study was only able to link 2 years of data to each teacher response. Adding additional years of assessment data would increase the opportunity to determine if there is a relationship between teacher perceptions of the PLC process and student achievement. Data collected through all future research should be used as a basis when designing future staff development.

Further research could be conducted in other school districts that have implemented Professional Learning Communities. This would determine if teacher perceptions of the PLC process in the Midwestern school district are similar to others throughout the Midwestern state or even across the United States. These studies could validate the findings of the current study. Comparing teacher perceptions of the PLC process and student achievement scores within multiple districts would allow each

district to determine the overall effectiveness of their Professional Learning Communities.

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Appendix A

Improving Student Achievement Through

Professional Learning Communities Survey

Improving Student Achievement Through Professional Learning Communities

Demographics

The purpose of this study is to determine how teachers in a Midwestern school district assess their personal skill level in working collaboratively and focusing on academic results while participating in a Professional Learning Community (PLC). Student achievement data, reported through criterion-referenced test scores (CRTs), will be examined from teachers displaying both positive and negative perceptions of the PLC process. This will determine if there is a relationship between PLC perceptions and student achievement scores.

The overarching question for this research project will be: Do educator perceptions of their personal skill level in working collaboratively and focusing on academic results while implementing a Professional Learning Community have an effect on student achievement?

Your participation in this survey is completely voluntary and your responses will be confidential. Any information obtained during this study, which could identify you, will be kept strictly confidential. You may choose to exit the survey by closing the browser window at any time without harming your relationship with the researcher, the University of Nebraska-Lincoln, or the Midwestern school district.

1. I agree to participate.
    - Yes

2. What is your highest level of education?
    - Bachelors Degree
    - Masters Degree
    - Doctoral Degree
    - Post-doctoral Study

3. What level do you primarily teach?
    - Elementary
    - Middle
    - High

4. What is your primary teaching responsibility?
    - Elementary (all subjects)
    - Grade 6 (most subjects)
    - English
    - Math
    - Other
5. How many years of teaching experience do you currently have?

6. What is your gender?
    - Male
    - Female

7. How many members are in your current Professional Learning Community team?

Personal Skill Level in Assuring High Levels of Learning

8. Since Professional Learning Communities have been implemented in your building, rate your personal skill level in assuring that all students learn at high levels.

	Strongly Disagree	Disagree	Undecided	Agree	Strongly Agree	Not Applicable
I know the essential objectives all students need to learn in my classroom.	1	2	3	4	5	
I know when each student has mastered the essential objectives.	1	2	3	4	5	
I have a plan for responding to students who experience difficulty.	1	2	3	4	5	
My personal response for students who struggle is supported through research-based intervention.	1	2	3	4	5	
My personal interventions require students to devote extra time to skills to assure mastery.	1	2	3	4	5	
I provide enrichment for those students who have already mastered the content.	1	2	3	4	5	

9. What personal strengths do you bring that allow students to learn at high levels?

10. What skills do you feel you still need to acquire to help students achieve at high levels?

Team's Skill Level in Creating a Culture of Collaboration

11. Since Professional Learning Communities have been implemented in your building, rate your PLC team's skill level in creating a culture of collaboration.

	Strongly Disagree	Disagree	Undecided	Agree	Strongly Agree	Not Applicable
My PLC team clarified roles and responsibilities.	1	2	3	4	5	
My PLC team clarified norms.	1	2	3	4	5	
My PLC team collectively decided upon essential outcomes linked to state/district standards.	1	2	3	4	5	
My PLC team created common formative assessments related to the essential outcomes.	1	2	3	4	5	
My PLC team created common summative assessments related to the essential outcomes.	1	2	3	4	5	
My PLC team determined common standards of mastery for proficiency of the essential outcomes.	1	2	3	4	5	
My PLC team examines the results from our common assessments.	1	2	3	4	5	
My PLC team develops new teaching strategies based on the common assessment results.	1	2	3	4	5	

12. What are the strengths of your PLC team that have helped to create a culture of collaboration?

13. What skills do you feel your PLC team still needs to acquire to create a culture of collaboration?

Team's Skill Level for Academic Results

14. Since Professional Learning Communities have been implemented in your building, rate your PLC team's skill level in focusing on academic results.

	Strongly Disagree	Disagree	Undecided	Agree	Strongly Agree	Not Applicable
My PLC team is able to honestly confront the brutal facts regarding our students' achievement data.	1	2	3	4	5	
My PLC team is able to determine our students' current level of achievement.	1	2	3	4	5	
My PLC team focuses on student learning rather than on teaching.	1	2	3	4	5	
My PLC team discusses evidence of student academic progress at each PLC team meeting.	1	2	3	4	5	
My PLC team members are able to hold each other accountable for the results that lead to continuous student improvement.	1	2	3	4	5	

15. What are the strengths of your PLC team that allow you to focus on academic results?

16. What skills do you feel your PLC team still needs to acquire to assist in focusing on academic results?

SMART Goal Information

Please provide data regarding your PLC team's most recently completed SMART goal along with successful strategies utilized that lead to increased student achievement.

17. SMART Goal and baseline data:

18. Goal completion data (e.g. percentage of students meeting or exceeding SMART goal):

19. Successful strategies utilized:

20. Do you have any additional comments or other information you would like to share?

Appendix B

Research Question One

Personal Strengths in Assuring Students Learn at High Levels

Complete Listing of Original Themes

Research Question One
Personal Strengths in Assuring Students Learn at High Levels
Complete Listing of Original Themes

Training

Enrichment

Experience

Skill

Relationships

Expectations

Strategy

Appendix C

Research Question One

Personal Needs in Assuring Students Learn at High Levels

Complete Listing of Original Themes

Research Question One
Personal Needs in Assuring Students Learn at High Levels
Complete Listing of Original Themes

Assessment

Collaboration

Willingness

Training

Motivation

Strategy

Curriculum

Time

Skill

Experience

Relationships

Enrichment

Appendix D

Research Question Two

PLC Team's Strengths in Creating a Culture of Collaboration

Complete Listing of Original Themes

Research Question Two
PLC Team's Strengths in Creating a Culture of Collaboration
Complete Listing of Original Themes

Collaboration

Experience

Strategy

Relationships

Skill

Data

Trust

Time

Expectations

Training

Curriculum

Communication

Appendix E

Research Question Two

PLC Team's Needs in Creating a Culture of Collaboration

Complete Listing of Original Themes

Research Question Two
PLC Team's Needs in Creating a Culture of Collaboration
Complete Listing of Original Themes

Willingness

Communication

Paperwork

Curriculum

Time

Organization

Teaching Styles

Relationships

Assessments

Experience

Student Involvement

Trust

Strategy

Collaboration

Data

Technology

Skill

Enrichment

Groups

Goals

Appendix F

Research Question Three

PLC Team's Strengths in Focusing on Academic Results

Complete Listing of Original Themes

Research Question Three
PLC Team's Strengths in Focusing on Academic Results
Complete Listing of Original Themes

Data

Experience

Expectations

Communication

Trust

Willingness

Collaboration

Assessment

Skill

Relationships

Curriculum

Achievement

Time

Goals

Appendix G

Research Question Three

PLC Team's Needs in Focusing on Academic Results

Complete Listing of Original Themes

Research Question Three
PLC Team's Needs in Focusing on Academic Results
Complete Listing of Original Themes

Organization

Training

Time

Strategy

Assessment

Technology

Trust

Relationships

Groups

Teaching Styles

Goals

Curriculum

Achievement

Skill

Willingness

Motivation

Collaboration

Communication

Data

Appendix H

Strategies Utilized By Teachers Meeting SMART Goals

Strategies Utilized By Teachers Meeting SMART Goals

Math Club

Extra practice at home

One-on-one tutoring

Response To Intervention: Tier 1 Math and Reading Interventions

Mini-lessons created based on student needs

Teach test taking skills

Reciprocal teaching

Guided reading

Reader's Theater

Educating students regarding use of rubrics

Re-teaching focused on skill deficits

Cyclical review of needed objectives

Re-testing conducted during the school day

Regrouping student according to need

Re-organizing daily schedule to re-teach and re-test

Pre-teach concepts to struggling students

Create activities to get students excited about learning

Clear communication with parents

Celebrate student learning

Provide multiple opportunities to practice concepts

Predicting and clarifying vocabulary before reading

Collaborative scoring and planning

Immediate, descriptive feedback to students

Cooperative learning activities

Exit activity

Daily reviews

Frequent and common formative assessments

Small group instruction

Modeling, modeling and more modeling

Enrichment activities

Experiential, hands on learning activities

Additional time to master concepts

Appendix I

Participant Notification E-mails

February 2010

Dear Lincoln Public School Educator,

A few days from now you will receive an e-mail request to fill out a brief electronic survey for an important research project being conducted within Lincoln Public Schools.

The research project is titled Improving Student Achievement Through Professional Learning Communities. This research project will explore teachers' perceptions regarding the use and implementation of professional learning communities in Lincoln Public Schools. Criterion-referenced test scores in the areas of reading comprehension and math will also be studied to determine if teacher perceptions of the PLC process impact student achievement. SMART goal data will also be requested within the survey. Research will be collected through an electronic survey. This survey will take approximately 10-15 minutes to complete.

I am writing to you in advance so that you will know ahead of time that you will be contacted to complete the survey. The study is an important one that will help Lincoln Public Schools determine Professional Learning Community effectiveness and identify any necessary staff development opportunities for teachers.

Thank you for your time and consideration. It's only with the generous help of people like you that this research project can be successful.

Sincerely,

Mindy Roberts, Principal Investigator
Telephone: (402) 436-1222
Email: mroberts@lps.org

February 2010

Dear Lincoln Public School Educator,

I am conducting a research project titled Improving Student Achievement Through Professional Learning Communities. This research project will explore teachers' perceptions regarding the use and implementation of professional learning communities. The research will be collected through an electronic survey. Research questions were developed based on the three themes of professional learning communities: (1) assuring that all students learn at high levels, (2) working collaboratively in teams and (3) focusing on academic results. SMART goal data will also be requested within the survey. This survey will take approximately 15 minutes to complete. Criterion-referenced test scores in the areas of reading comprehension and math will also be studied to determine if teacher perceptions of the PLC process impact student achievement.

Your participation in this survey is completely voluntary and your responses will be confidential. You are free to decide not to participate in this research project but I would greatly appreciate your help. Any information obtained during this study, which may identify you, will be kept strictly confidential. Survey data will be kept for 5 years after the completion of the study. Confidential data will be kept for approximately 1 year after the completion of the study or until the researcher has defended the dissertation. Confidential data will then be destroyed. The information obtained in this study may be published in professional journals or presented at professional meetings, but the data will be reported as aggregated data.

Responding "yes" to the "I agree to participate" question on the first page of the survey will indicate your consent to participate. There are no known risks involved in participating in this study. You are free to decide not to participate in this study. You may choose to exit the survey at any time by closing the browser window at the top of each survey section without harming your relationship with the researchers, the University of Nebraska – Lincoln, or Lincoln Public Schools. Please contact me with any concerns, questions, or comments you have about this study or the survey at (402) 436-1222 or at mroberts@lps.org. You may also contact Dr. Isernhagen at (402) 472-1088 or at jci@unlserve.unl.edu. Sometimes study participants have questions or concerns about their rights. In that case, you should call the University of Nebraska-Lincoln Institutional Review Board at (402)-472-6965.

Knowing that your participation in this study is completely voluntary, please accept our sincere thanks for your willingness to share your perceptions and opinions with me. Click on the link below to access the survey and acknowledge that you have read the informed consent and agree to participate. Please keep this e-mail for your records.

http://www.surveygizmo.com/s/220584/improving-student-achievement-through-professional-learning-communities-mindy-roberts-

Sincerely,

Mindy Roberts, Principal Investigator
Telephone: (402) 436-1222
Email: mroberts@lps.org

Jody Isernhagen, Secondary Investigator
Telephone: (402) 472-1088
Email: jci@unlserve.unl.edu

February 2010

Dear Lincoln Public School Educator,

Last week you were sent an e-mail requesting you to fill out a brief electronic survey for an important research project being conducted within Lincoln Public Schools titled Improving Student Achievement Through Professional Learning Communities. Teachers in Lincoln Public Schools have worked within Professional Learning Communities (PLCs) for the past four school years and were selected to be part of this study due to this previous experience.

If you have already completed the electronic survey, please accept my sincere thanks. If not, please do so today. I am especially grateful for your help because it is only by asking teachers like you to share your perceptions that we can continue to improve PLC effectiveness and increase student achievement. Remember that SMART goal data will be requested within the survey.

If you have deleted the original e-mail request to participate this important project please use the link below and it will take you directly to the survey.

http://www.surveygizmo.com/s/220584/improving-student-achievement-through-professional-learning-communities-mindy-roberts-

Sincerely,

Mindy Roberts, Principal Investigator
Telephone: (402) 436-1222
Email: mroberts@lps.org

February 2010

Dear Lincoln Public School Educator,

Two weeks ago you were sent an e-mail requesting you to fill out a brief electronic survey for an important research project being conducted within Lincoln Public Schools titled Improving Student Achievement Through Professional Learning Communities. Teachers in Lincoln Public Schools have worked within Professional Learning Communities (PLCs) for the past four school years and were selected to be part of this study due to this previous experience.

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http://www.surveygizmo.com/s/220584/improving-student-achievement-through-professional-learning-communities-mindy-roberts-

Sincerely,

Mindy Roberts, Principal Investigator
Telephone: (402) 436-1222
Email: mroberts@lps.org

Appendix J

IRB Approval Notification

University of Nebraska Lincoln

January 5, 2010

Mindy Roberts
Department of Educational Administration
1620 Garret Ln Lincoln, NE 68512

Jody Isernhagen
Department of Educational Administration
132 TEAC UNL 68588-0360

IRB Number: 20100110512 EX
Project ID: 10512
Project Title: Improving Student Achievement Through Professional Learning Communities

Dear Mindy:

This letter is to officially notify you of the approval of your project by the Institutional Review Board (IRB) for the Protection of Human Subjects. It is the Board's opinion that you have provided adequate safeguards for the rights and welfare of the participants in this study based on the information provided. Your proposal is in compliance with this institution's Federal Wide Assurance 00002258 and the DHHS Regulations for the Protection of Human Subjects (45 CFR 46) and has been classified as exempt.

You are authorized to implement this study as of the Date of Final Approval: 01/05/2010. This approval is Valid Until: 12/31/2015.

1. The approved informed consent email has been uploaded to NUgrant with the IRB number included (file with -Approved.pdf in the file name). Please make sure to include the IRB number in the actual email that is sent to participants. If you need to make changes to the informed consent email, please submit the revised message to the IRB for review and approval prior to sending it.

We wish to remind you that the principal investigator is responsible for reporting to this Board any of the following events within 48 hours of the event:
• Any serious event (including on-site and off-site adverse events, injuries, side effects, deaths, or other problems) which in the opinion of the local investigator was unanticipated, involved risk to subjects or others, and was possibly related to the research procedures;

• Any serious accidental or unintentional change to the IRB-approved protocol that involves risk or has the potential to recur;
• Any publication in the literature, safety monitoring report, interim result or other finding that indicates an unexpected change to the risk/benefit ratio of the research;
• Any breach in confidentiality or compromise in data privacy related to the subject or others; or
• Any complaint of a subject that indicates an unanticipated risk or that cannot be resolved by the research staff.

This project should be conducted in full accordance with all applicable sections of the IRB Guidelines and you should notify the IRB immediately of any proposed changes that may affect the exempt status of your research project. You should report any unanticipated problems involving risks to the participants or others to the Board.

If you have any questions, please contact the IRB office at 472-6965.

Sincerely,

Mario Scalora, Ph.D.
Chair for the IRB