WHATEVER IT TAKES:

A MIXED METHODS STUDY EVALUATING THE IMPLEMENTATION OF PROFESSIONAL LEARNING COMMUNITIES ACROSS A DISTRICT

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AUTHORIZATION TO SUBMIT

DISSERTATION

This dissertation of N. Shalene French, submitted for the degree of Doctor of Education with a major in Education Leadership and titled "Whatever It Takes: A Mixed Methods Study Evaluating the Implementation of Professional Learning Communities Across a District," has been reviewed in final form. Permission, as indicated by the signatures and dates given below, is now granted to submit final copies.

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DEDICATION

To the children and to the courageous and inspired educators who choose to teach.

ABSTRACT

Professional Learning Communities (PLCs) provide the basis for meeting the challenges and expectations in today's educational environment. Effective PLCs provide the framework for school improvement and ultimately impact student academic success. School leadership is fundamental in this process (Bennis, 2009; Buffum, Mattos, & Weber, 2009; Carter, 2007; Day, Leithwood, & Sammons, 2008: DuFour & Eaker, 1998; Fullan, 2001; Leithwood, Harris, & Hopkins, 2008; Leithwood, Mascall, Strauss, Sacks, Memon, & Yashkina, 2007; Marzano & Waters, 2009; Spears, 2005; Steiner, Hassel, & Hassel, 2008) and the building principal is the central figure. This project explored district-wide implementation of school level PLCs and the role school administration played in implementing a PLC culture. This mixed-methods study examined how district level administrative support helped establish a PLC culture of continuous improvement through quality professional development, role modeling, and observed expectations. Faculty members and administrators from a geographically diverse Eastern Idaho district participated in this PLC research study in an effort to answer the following questions: To what extent are the foundational principles of PLCs established throughout the district? What differences between elementary and secondary schools exist in the implementation of PLCs? What differences in teacher and principal perception exist regarding the implementation of PLC in a building?

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Introduction

With the impact of the No Child Left Behind (2001) legislation and the current financial crisis looming across the United States, public education is under intense scrutiny. As educators are held to seemingly insurmountable expectations, the pressure to improve standardized test scores has become a topic of heated debate. This juxtaposition creates a challenging situation for all educational leaders. How can districts and schools continue to demonstrate student growth while at the same time deal with teacher morale and job satisfaction? Is there a way to infuse educators with the belief that their life's work is more meaningful and essential than what can be measured by a standardized test score? What is the role of administration? Are principals equipped to lead school communities through these unprecedented changes? Can a district's or school's culture make not only positive changes, but sustainable changes in light of these challenges? More importantly, will educators have the requisite skills to do *whatever it takes* to help all students achieve?

Education is at a tipping point. The decisions and direction political leaders and local education agencies pursue will significantly impact children now and in future generations. The collective decisions of a school community have the power to create dramatic change resulting in an instantaneous impact on public school children today and laying the groundwork for educational reform. For decades, researchers have identified the synergistic power of meaningful

teacher collaboration as a catalyst for change (DuFour & Eaker, 1998). These collaborative efforts, identified as Professional Learning Communities (PLCs), provide the basis for meeting the challenges and expectations in today's ever-shifting educational environment (Darling-Hammond & McLaughlin, 2011; Doolittle, Sudeck, & Rattigan, 2008).

Since the 1983 publication of *A Nation at Risk* and the reauthorization of the *No Child Left Behind Act of 2001*, educators have sought research-based programs as a panacea for today's high-stakes environment. PLCs have proven to be more than a panacea; research indicates PLCs are the framework for school improvement which positively effects student achievement and teacher efficacy (DuFour, 2011; Fulton & Britton, 2011; Harris, 2010; McLaughlin & Talbert, 1993; Sigurðardóttir, 2010). Not only are Professional Learning Communities focused on student achievement, they are structured for continuous school improvement. The emphasis of PLCs is on building staff capacity for learning and change (Harris, 2010; Louis, Dretzke, & Wahlstrom, 2010; Wong, 2010).

However, implementation of PLCs does not just transpire. There must be a leader, more importantly, a leader with vision (Collins, 2001; Collins & Hansen, 2011; DuFour, DuFour, Eaker, & Many, 2010; DuFour & Eaker, 1992, 1998; DuFour & Marzano, 2011; Fisher, & Geary, 2013; Fullan, 2010; Hines, Luna, Lofthus, Marquardt, & Stelmokas, 2008; Leithwood et al., 2008; Leithwood, Louis, Anderson, & Wahlstrom, 2004; The Wallace Foundation, 2012, 2013a, 2013b). The principal is ultimately the force behind effective Professional Learning Communities. For PLCs to have the greatest impact on student achievement, DuFour and Eaker (1998) note,

> Principals must define their job as helping to create a professional learning community in which teachers can continually collaborate and learn how to become more

> effective…Principals can play a key role in creating the conditions that enable schools to become professional learning communities. (p. 184)

In today's educational environment, principals do play the central role in creating the conditions for a PLC as well as setting the expectations for improved student achievement. However, principals also need direction, guidance, support, and assurance as they construct an environment conducive to fostering a PLC culture.

Statement of the Problem

Changing the culture of a school is challenging. It takes time and considerable effort on the part of administrators, teachers, patrons, and students. Changing the culture of a district with almost 11,000 students and more than 500 teachers is a daunting task. It involves intensive professional development training for principals and teachers. The expectation that PLC foundational practices will be implemented at each site is implied. In addition, PLC practices must then be implemented to such a degree that they are resilient and sustainable over time despite staff and administrative turnover.

With the inherent challenges of altering the culture of a school, let alone a district, it seems unlikely that changes can be sustainable. This position was openly expressed at the 2011 Idaho Association of School Administrators' Project Leadership seminar. Dr. Roger Quarles, currently a faculty member at Boise State University and the former superintendent of the Caldwell School District in Caldwell, Idaho, lectured about the limited research indicating that changing a school culture was sustainable. As a former superintendent, he stated he did his best to hire the right principals and hoped through these appointments the school improvement efforts he had initiated would continue to some degree even after he vacated the position. Dr. Quarles lamented the fact that with every change in leadership, effective systems, already in place, are not guaranteed to remain (Idaho Association of School Administrators, 2011).

Yet, in spite of these obstacles, current research findings, though limited, indicate cultural change is possible and can be sustained over time. DuFour et al. (2010) declare that school improvement efforts are sustainable. This is possible when district leadership plays a pivotal role by insuring that PLC foundational principles have been firmly established at the building level. District leadership must cultivate an environment balanced between district control and school autonomy. District leadership must then be willing to hold principals responsible to implement school-based Professional Learning Communities focused on addressing the district nonnegotiable priorities regarding student achievement, results, and instruction (Marzano & Waters, 2009).

When school level collaborative teams uphold district priorities, student achievement increases (Marzano & Waters, 2009). As PLCs become an integral part of the school improvement effort, they also become sustainable over time. This happens because teachers receive consistent administrative support and guidance while being empowered to make decisions pertaining to the areas of student achievement and instruction (DuFour et al., 2010; DuFour & Marzano, 2011; Lezotte, 2012). This administrative support and guidance comes through a commitment to ongoing professional development focused on the nonnegotiable priorities and providing time for teachers to collaborate about the nonnegotiables as well as curriculum and common assessments. As PLCs evolve from merely a program of collaboration, they become embedded in the underlying culture of the school. Once this culture is firmly established, it is plausible that this type of systematic school reform can be sustained even with change in building level personnel.

Background

In 2001, major changes took place in education. With the advent of No Child Left Behind (2001) legislation, educators had to address academic disparities. Research has demonstrated that

PLCs are the framework for establishing a culture focused on student achievement while at the same time empowering educators to collaborate in an attempt to address ongoing challenges (Doolittle et al., 2008; DuFour, 2011; DuFour, DuFour, Eaker, & Karhanek, 2004; Fullan, 2013; Fulton & Britton, 2011; Malone & Smith, 2010). Research also indicates that school leadership is a crucial factor for improving student achievement and for creating a collaborative culture where PLCs can flourish (Wallace Foundation, 2013). This study examined the efforts of one school district as they trained and guided principals and staff in incorporating PLC foundational practices into school culture. The purpose of this study, therefore, was to identify what actions, based on sound research, districts and schools can take to insure school improvement efforts are implemented at such a level that these efforts can be sustained over time.

The Research Questions

Leadership and sustainable PLC practices were the focus of this mixed-methods research study. The aim of the study was to determine what actions district administration needs to take in order to implement PLC foundational principles and practices in each school throughout the district. An additional objective was to determine what actions principals need to take in order to implement PLC foundational principles and practices with their staff members. Implementing effective PLC practices is challenging (DuFour et al., 2004; DuFour et al., 2010; Reeves, 2004; Schmoker, 1999). Changes in school culture may disrupt this research-based school improvement effort or may even result in its discontinuation. Therefore, the fundamental questions of this study include: To what extent are the foundational principles of PLCs established throughout the district? What differences between elementary and secondary schools exist in the implementation of PLCs? What differences in teacher and principal perceptions exist regarding the implementation of PLC in a building?

The sub-questions derived from these main questions are:

1. What role does the district play in developing a PLC environment?
2. What is the perception of a PLC among principals?
3. What experience have principals had creating a PLC culture?
4. What PLC principles must be in place in order to effect change?
5. What PLC practices must be in place in order to effect change?
6. How are new administrators and building level personnel oriented to the PLC model?

Description of Terms

Autonomy refers to the independence each principal is allowed while meeting the expectations of district administration to lead within the prescribed boundaries identified by the district goals (Marzano & Waters, 2009)**.**

Collaboration represents a systematic process in which teachers work together interdependently in order to *impact* their classroom practice in ways that will lead to better results for their students, for their team, and for their school (All Things PLC, 2012)

Leadership teams are guiding coalitions which disperse the leadership load throughout the school by distributing responsibilities among the teacher leaders and PLC team members (Hall, 2007).

Nonnegotiables are goals "that all staff members must act on" (Marzano & Waters, 2009, p. 6). These goals must be established in the area of student achievement, results, and classroom instruction.

Practices of professional learning communities refer to research-based, effective teaching strategies focusing on student learning and achievement. Practices are action oriented: a predisposition to learn by actually doing; turning aspirations into actions and visions into realities (DuFour et al., 2010).

Principles of professional learning communities rest upon a shared mission of high levels of learning for all students (DuFour et al., 2010).

Professional learning communities (PLC or PLCs) are ongoing processes in which educators work collaboratively in recurring cycles of collective inquiry and action research to achieve better results for the students they serve. Professional learning communities operate under the assumption that the key to improved learning for students is continuous job-embedded learning for educators (DuFour et al., 2010).

Potential Significance of the Study

When research-based school improvement efforts are implemented, then pockets of greatness have the potential to spread to other schools and districts throughout a region and even a state system of public schools. The collective decisions and the direction of a school community could create dramatic change immediately which could impact student achievement and teacher efficacy. Using the PLC framework, children throughout a district would attend schools where educators collaborated with each other and were guided by a leader with vision; a leader who not only does things right, but does the right thing (Bennis, 2009). Building teacher leadership capacity at the school level could create the cultural expectation of excellence. With a change in school administration, this expectation of excellence would be considered a nonnegotiable for the incoming administrator. This study focuses on establishing foundational PLC practices, building leadership capacity, and providing ongoing training to ensure school improvement efforts are fully implemented.

Overview of Research Methods

This mixed-methods research study included the use of Likert scale surveys and two open-ended questions. The purpose of the study was to determine what level PLC principles and practices were initiated and to identify what actions districts and schools can take to insure

school improvement efforts are implemented. Participants in the study were administrators and certified staff from one school district in Idaho.

Using Qualtrics survey software, the survey was constructed and then emailed to participants to insure anonymity. The survey questions were based on the work of DuFour et al. (2010) *Learning by Doing; A Handbook for Professional Learning Communities at Work*. In order to answer research questions one and two, certified staff members and administrators at both the elementary and secondary school level were compared using the Mann-Whitney U. The Mann-Whitney U was also used to compare responses between schools receiving Title 1 funding and those schools that did not receive funding. In addition, Cohen's *d* was used to determine practical significance when the outcome was deemed significant. Descriptive statistical analysis was used for research question three in order to disaggregate responses to similar survey questions found on both the administrators' and certified staff surveys.

To evaluate the open-ended questions, responses were categorized by themes. Themes were sorted for initial coding and then grouped to reflect commonalities. Patterns and salient themes were determined. Furthermore, "recurring ideas or language, and patterns of belief" (Marshall & Rossman, 2011, p. 214) were identified and categories of meaning emerged.

Chapter II

Review of the Literature

Introduction

In 1983, the National Commission on Excellence in Education published, *A Nation at Risk*. In this report, the members of the National Commission were gravely concerned that national security was in danger because of the mediocre education found in American public schools. This report created a sense of urgency to change education. Multiple school improvement efforts began to emerge throughout the United States. By 1985, more than 300 national and state task force initiatives were investigating the condition of public education in America (DuFour & Eaker, 1998). Still burdened with the 19th century manufacturing mindset for education where children were sifted and sorted based on an arbitrary expectation, many school reform efforts failed to produce lasting results. Schools were tied to the bureaucratic, standardized factory model. This 19th century model became woefully inadequate when it was apparent public schools needed to overcome the troubling inadequacies in the educational process and the overall way education was being conducted (National Commission on Excellence in Education, 1983). Children in the 21st century were deserving of an education that prepared them for citizenship in a world where geographical borders have faded.

Change Agent

In order to compete globally, public schools needed to ensure all children received rigorous and relevant content. Beyond global competition, the citizens of the United States had a moral obligation to provide children with a quality education which would be foundational in creating a literate citizenry (Rory, 2005). This moral obligation will continue to influence educators into the future. If educators are to meet the current challenges, local as well as national, "they *must* abandon an outdated model that is contrary to the findings of educational

research…They *must* embrace a new conceptual model for schools" (DuFour & Eaker, 1998, p. 23). The authors of A Nation at Risk (1983) contend educational reform should be focused on the goal of creating a society where learning is the priority. Today's global economy is one of accelerating competition and constant change in workplace conditions. Grave risks, yet endless opportunities abound for those prepared to meet them. A learning workforce and a learning citizenry will therefore be more prepared to take advantage of those global opportunities presented to them. With the advent of these findings, political leaders were pressed to make significant legislation in order to change prevailing educational beliefs.

Substantial changes in public education were enacted at the commencement of the 21st century beginning in October 2001. At this time President George W. Bush created the Commission on Excellence in Special Education in order to study issues regarding special education programs at the local, state, and federal levels (Fernley, LaRue, & Norlin, 2007). The Commission found that during the past decade, the number of students eligible to receive special education services identified under the Specific Learning Disability (SLD) category increased by 36%. The goal of the Commission was to improve the performance of students with disabilities. The Commission recommended a

> redesign in the SLD evaluation and eligibility criteria to focus on assessing a child's response to early educational interventions within a school's general programs… and to provide scientifically sound educational interventions to students not currently eligible for special education, but who show early signs of reading or other academic deficits. (1:5)

Not only was the Federal Government investigating the discrepancies in Special Education, but through a bipartisan effort the United States Federal Government reauthorized the Elementary and Secondary Education Act of 1965 by January of 2002. This act, known today in

education as No Child Left Behind (NCLB), required public school officials to focus on standardized testing and also began forcing educators to place emphasis on individual student learning. In addition, the Individuals with Disabilities Education Act 2004 (IDEA, 2004) was reauthorized as well (Fernley et al., 2007). These federal laws made it mandatory for states to implement research-based, data-driven educational systems responsive to all students' academic needs. Instead of risking the misidentification of students or waiting for students to fail before they could receive academic assistance, provisions were written in NCLB which involved "a move toward the 'medical' model used by scientists to assess the effectiveness of therapies, treatments and medications" (1:1).

For comparison, consider the premises of the medical model where decisions are made quickly, succinctly, and efficiently in order to provide the best care possible. The assessment about the treatment plan is data-based and the decisions made at each intervention are closely monitored and adjusted in an effort to treat the patient accurately. Compare this analogy to an academic emergency. There is a heightened sense of urgency when a child is experiencing a medical emergency, but this is not necessarily the case when a child is experiencing an academic emergency. Like the medical model, steps based on academic data must be taken when a student needs academic intervention. When a child breaks an arm, medical help is immediately sought because of the damaging effects this could cause for the duration of the child's life. However, when a child cannot read, this same level of urgency in seeking help is essential considering the disabling effects illiteracy has during an individual's lifetime (Buffum et al., 2009).

Buffum, Mattos, and Weber, (2009) referred to this heightened awareness for responsive academic intervention as Learning CPR. They contend that "students who fail within our educational system face such severe and sobering consequences, it is incomprehensible that most traditional schools respond to students at risk with a defeated or laissez-faire attitude" (p. 62). A

child who is suffering from a medical emergency is attended to quickly and emergency personnel do not wait for the patient to take advantage of the opportunity; assistance is immediately administered. Students at-risk academically must also be administered to quickly. Educators cannot wait for the student to decide to take advantage of the opportunity to receive extra support. Too much is at risk. A child's academic well-being is as vital as his physical well-being; hence, the provisions required by No Child Left Behind which pattern academic interventions after the medical model: a model which provides responsive intervention quickly, succinctly, and efficiently throughout the duration of the emergency.

All students, from elementary through high school, benefit from an academically responsive school community. However, an academically responsive school must adhere to more than a stringent set of protocols; it must become more than a systematic approach to academic intervention. A district and school's educational environment must be founded upon a pervasive belief held by each member of the school community that all children can learn. It must be interwoven throughout the school culture (Buffum, Mattos, & Weber, 2010; Sansosti, Noltemeyer, & Goss, 2010).

Taking Responsibility When Students Do Not Learn

The need for responsive interventions in education has become a necessity. The Idaho State Department of Education (2011), using data from the National Center for Education Statistics (NCES), reported that schools across the United States are struggling to meet Adequate Yearly Progress graduation goals. Nationwide, fewer than 70% of high school students graduate. More alarming is the fact that more than 2,000 American high schools have graduation rates below 50% (Alliance for Excellence in Education, 2012). The NCES also reported more than six million struggling readers in grades 7-12 in schools across America with at least half of the

middle and high school students missing the necessary reading skills to master curriculum standards.

Additional studies indicate that almost two thirds of 8th grade students and two thirds of high school seniors read below the proficient level on the National Assessment of Educational Progress (Brozo, 2009). In order to address student learning deficiencies, a school community must be committed to improving the educational outcome for all their students. Buffum et al. (2009) assert two basic assumptions underlying the mission of high levels of learning for all students: (a) educators must believe that all students are capable of high levels of learning, and (b) educators willingly accept responsibility for making high levels of learning a reality for every child. This will require more than a standard approach to intervention. In order to effectively implement the government mandated legislation, the first course of action will be to establish a solid professional learning community committed to providing responsive intervention quickly, succinctly, and efficiently throughout the duration of the academic emergency. Assisting academically at-risk students must be considered nonnegotiable (Marzano & Waters, 2009).

The actual classroom, where students are instructed by a highly-qualified teacher, is where the majority of preventative measures will take place. It also happens to be the weakest link in secondary schools (Brozo, 2009). This weakness stems from the fact that secondary certified teachers receive extensive training in their content areas, but are ill-prepared to intervene when their students are not learning. DuFour, DuFour, Eaker, and Karhanek, (2004) contend that even though the United States may have been the first nation to embrace the belief of a free, universal public education for all children, in actuality, children have only been guaranteed the right to attend school, not the right to learn. Expecting teachers to arise victorious in this ongoing quest to improve the lives of the children they serve will require more than an occasional in-service training. Malone and Smith (2010) found that

> …the inherited model of schooling which is shaped by [the] industrial society (where teachers work in the privacy of their classrooms, in isolation from each other, with students as passive learners) is no longer seen as adequate to individuals living in a knowledge society. To meet the emerging needs of this knowledge/learning society, schools and teachers are being challenged to turn schools into "active learning communities" for teachers and students in which they develop [the] skills, knowledge and attitudes needed to become lifelong learners in such a society. (p. 106)

Teachers at both the elementary and secondary level must become active participants in professional learning communities. As part of these communities, teachers need to be immersed in quality training focused on student learning and achievement.

Professional Learning Communities

School leaders can effectively address the challenges facing educators today by creating a professional learning community culture; a culture where all the teachers and the administrators continuously work together as they seek and share learning. They are then prepared to go one step further and act on what they learn (SEDL, 1997). Professional learning communities or the professional community of learners is a key to sustainable school improvement and enhanced teacher efficacy. With training, organization, and support, teachers are empowered to seek and then apply solutions to challenges and problems found in their own settings which will ultimately produce demonstrable achievement (Hargreaves & Shirley, 2009). The research and design of professional learning communities constantly gives attention to six attributes for this type of organization: (a) shared values, mission, and vision, (b) collective creativity or inquiry, (c) supportive and shared collaborative teams, (d) supportive conditions for action orientation and experimentation, (e) continuous improvement, and (f) results oriented where improvement is assessed on results rather than intentions (Buffum et al., 2009; Doolittle et al., 2008; DuFour &

Eaker, 1998; DuFour et al., 2004; Eaker, DuFour, & DuFour, 2002; Fullan, 2008; SEDL, 1997; Sigurðardóttir, 2010).

Fullan (2008) argues that in order to obtain meaningful results, school leadership must infuse their culture with the six theories of change (Figure 1). These theories are interwoven throughout effective professional learning community environments. For example, when comparing Fullan's Six Theories of Change to the work of DuFour et al. (2010) *Learning by Doing; A Handbook for Professional Learning Communities at Work*, it is evident that to build a solid foundation for a PLC, teachers must feel valued, safe, included, and supported in meaningful ways. DuFour et al. (2010) are emphatic that significant school improvement will be realized by creating a culture that values people. Effective PLCs exemplify trusting, working relationships where teachers feel empowered to participate in school improvement and are continuously learning from and with each other.

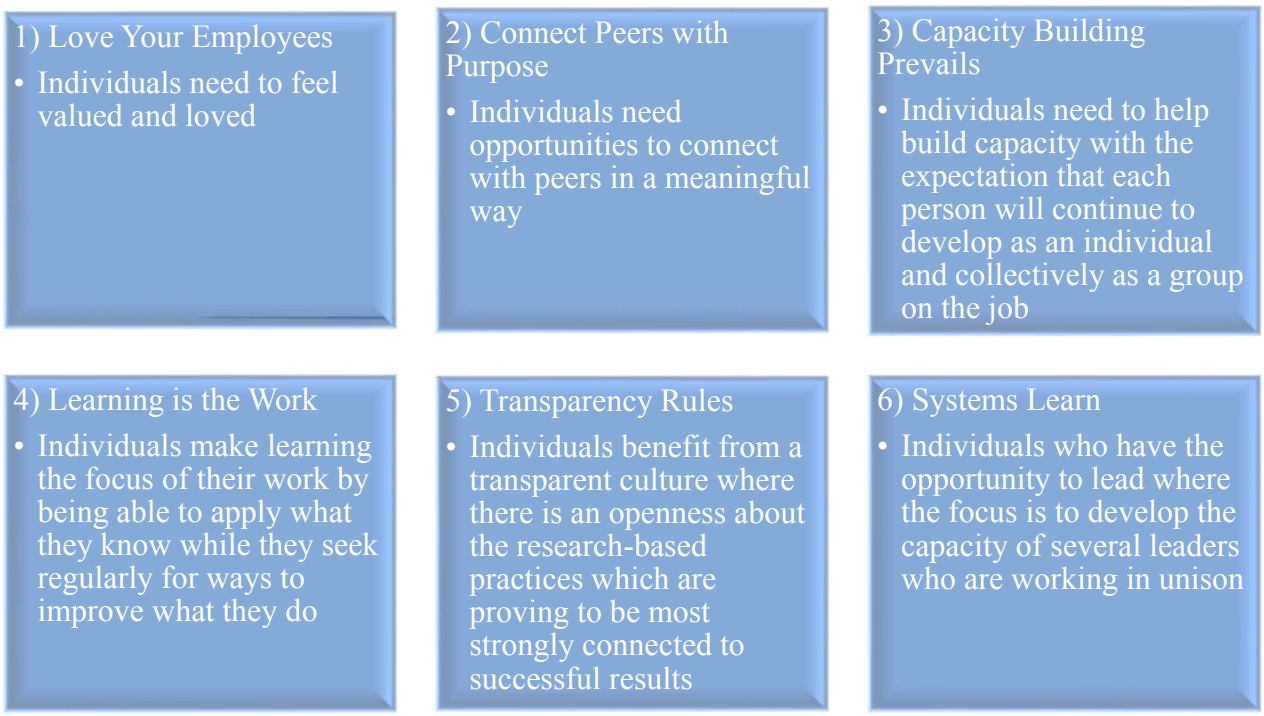
> There are those who suggest an organization committed to results will be inattentive to the needs of the people within it, willing to sacrifice individuals on the altar of the bottom line…Professional learning communities are committed to both results and relationships. They recognize that the best way to achieve the collective purpose of the group is through collaborative relationships that foster the ongoing growth and development of the people who produce the results. They recognize that the very key to school improvement is people improvement, and they commit to creating cultures that help individuals become more proficient, effective, and fulfilled by virtue of the fact that they work in that school or district. (DuFour et al., 2010, p. 201)

Ultimately, the teacher is the fulcrum for improving student learning. If the classroom teachers feel supported and valued, if the teacher has an opportunity to work collaboratively, and if the

teacher is able to grow professionally, then systemic change to a prevailing school culture is possible.

Figure 1

Six Theories of Change



Debates over educational policy are unresolved if the main agents of instruction are unable to perform their functions well. “No microcomputer will replace them, no television systems will clone and distribute them, no scripted lessons will direct and control them, no voucher system will bypass them” (DuFour & Eaker, 1998, p. 206). By harnessing the intellectual and creative nature of our educational professionals, improving teacher quality can be accomplished through PLCs. Professional Learning Communities create a synergistic organization where educators combine their efforts for greater results. By embedding a culture of professional learning communities, school leaders will be able to effectively and efficiently address the challenges inherent in education (DuFour et al., 2004; DuFour et al., 2010; Reeves,

2004; Schmoker, 1999). Including teachers in the conversation regarding education reform and school cultural changes is more efficient and viable than a top-down or authoritarian approach. Through PLCs, teachers are empowered to help direct and guide the school improvement effort which in turn will create more job satisfaction and provide a greater sense of purpose to their work. More importantly, children will benefit academically and socially from an educational environment where teachers believe in doing whatever it takes to improve student achievement and have the means to accomplish this goal (DuFour et al., 2004). In addition, this community of educators creates an educational environment where positive reform can be sustained.

Gillespie (2010) refers to past studies about schools operating as learning communities. These PLCs have yielded firsthand evidence that teacher collaboration leads to an increase in student achievement. The results from a 1995 nationwide study, which included 11,000 students in 820 schools, revealed that educators working in a collaborative environment saw changes in classroom pedagogy, which in turn, lead to an increase in student engagement in higher level tasks. In another study conducted by Thompson, Gregg, and Niska (2004), principals and staff of six different middle schools were surveyed. The results of their research indicated that all students were learning which was evident from the various assessments administered throughout the school year. Assessments included test scores, portfolios, and students' work. Teachers believed an increase in student achievement was attributable to a decrease in teacher attrition and the flexibility in creating more academically responsive student schedules.

For decades, educators, practitioners, and researchers have advocated for responsive education for all youth. This is evident through educational associations such as the Association for Middle Level Education and the National Association of Secondary School Principals. The research practices supported by Professional Learning Communities, High Schools That Work, and Making Middle Grades Work reinforce the idea of responsive education for all adolescents.

A myriad of research has been conducted to identify best practices to improve education at all levels (Association for Middle Level Education, 2010; National Association of Secondary School Principals, 2006; Office of Superintendent of Public Instruction, 2007: Southern Regional Education Board, 2011). The underlying theme of this research requires that schools develop student-centered cultures in order to support learning for all students:

> If schools are to fulfill their mission of helping all students learn at high levels, they must monitor each student's learning on a timely basis and create procedures to ensure that students receive additional time and support when they experience difficulty in learning…this time and support should be provided in a systematic way rather than left to the discretion of individual teachers, …the system should include a number of interventions based on increasing levels of support, and …students should be directed rather than invited to avail themselves of the support system. (DuFour et al., 2004, p. 149)

A school community can implement systematic levels of interventions and supports by first reflecting upon their basic practices and philosophy of education. Teachers who have worked in isolation can no longer continue working as such. Content teams, grade level teams, or departments are required to work together to address the areas of student achievement and instruction. This opportunity to collaborate results in more effective teaching aligned to clear and concise curriculum standards where teachers hold each other accountable to teach common, essential standards (Carter, 2007; Schmoker, 2006). In addition, teachers must effectively use assessment results or other forms of data as a means to guide instruction and improve student outcomes. Data cannot be ignored; otherwise educators may continue to promote incompetency and inefficiency (Schmoker, 1999). If educators are unresponsive and/or unaccountable to the needs of their students, then a widening educational disparity will ultimately result.

In order for a school to employ a medical model to address academic emergencies and do whatever it takes to help all children learn, they must first come together as a professional learning community: a community where both teachers and administrators are willing to create a culture of support and where the mantra of high expectations is requisite of both the students and the faculty members. This can be done if the school culture is one of collective commitment built by staff members who

1. have a common mission
2. are willing to question the status quo
3. work together as a team
4. are willing to act
5. seek for continual improvement
6. use results to make sustainable changes (DuFour & Eaker, 1998).

Having a collective purpose can unify a faculty as they accept the challenge to meet the academic needs of each child they serve.

Leadership Matters

Leithwood, Harris, and Hopkins (2008) conducted in-depth studies of school leadership and concluded that creating a culture of learning for all children hinges to a great extent upon school leadership. Further evidence indicates that leadership has significant effects on the quality of a school community and on student learning. The significance of strong leadership has been cited multiple times in both the studies on excellent businesses and on effective, student-centered schools (Bennis, 2009; Collins, 2001; Collins & Hansen, 2011; Day et al., 2008; DuFour & Eaker, 1992, 1998; Fullan, 2001, 2008, 2010; Leithwood et al., 2007; Leithwood et al., 2008; Steiner et al., 2008; Schmoker, 1999, 2006; The Wallace Foundation, 2012, 2013a, 2013b). After Leithwood, Mascall, Strauss, Sacks, Memon, and Yashkina (2007) extensively reviewed the

research on school leadership, they concluded there is not a single documented case of a school successfully turning around its student achievement without talented leadership. They cite one reason for this is that leadership serves as a catalyst for unleashing the potential capacities that already exist in the school community. Reeves (2004) believes adults need to understand that no child in any school should be held to a greater accountability than the adults in the system. Likewise, it is an ethical principle of leadership that no teacher or staff member should be held more accountable than the leaders in the system.

In a mixed-methods PLC study conducted in two South Carolina schools, the role of the principal was identified as essential in implementing PLC practices and creating an environment based on trust. The leadership section of the survey indicated that both teaching staffs believed leadership consistently impacts and sustains their professional learning community. The researcher concluded that upon closer examination of the survey results, it was possible that schools not functioning as PLCs most likely had leadership with a limited understanding. The school administrators failed to promote a shared vision, shared decision making, collaboration, and a focus on student learning (Moore, 2010).

By fully implementing a PLC for school improvement, principals create a supportive learning environment for every member of the school community. It is the principal who actually determines whether or not the school culture will emanate effective PLC practices and principles; practices and principles focused on student achievement. Principals must provide strong leadership – one with vision and direction. They will insist certain practices are nonnegotiable and will empower those around them with both autonomy and responsibility (DuFour & Eaker, 1992; Marzano & Waters, 2009).

In order to build an academically responsive school culture, administrators must actively hold themselves accountable by focusing on student learning, results, and instructional practices,

the nonnegotiables of education. They must be willing to equip and support professional learning communities so educators are able to solve problems, are confident to share and reflect upon their practices, and are secure in their efforts to continually make improvements. Before a medical model approach can be implemented (Buffum et al., 2009, 2010; Reeves, 2004), principals must first cultivate a common belief system where collaboration fosters academic excellence. It is the principal's responsibility to insure all teachers are invited and accept their role in the school's professional learning community. In order for PLCs to have the greatest impact on student achievement, principals must redefine their job as fostering a professional learning community in which teachers can continually work together and learn from each in an effort to become more effective practitioners (Lambert, 1998). Principals must be willing to play a key role in creating the conditions which will enable schools to become professional learning communities (DuFour & Eaker, 1998).

Action Research

Approaches in which a principal can play a key role in creating a PLC culture was evident by the results manifested during an action research school improvement initiative. One of the actions taken to create PLC conditions began with reviewing the class schedule. Since teacher collaboration is a vital part of PLCs, it is imperative teachers are given the time and the opportunity to meet together to discuss instructional strategies and student achievement. The existing schedule was revamped to afford opportunities for daily interaction by implementing common preparatory time for content teachers (Eaker et al., 2002). Although this seems like a simple task, arranging a secondary schedule so content teachers have the ability to meet daily has far-reaching implications in regards to an individual student's schedule. Even though it was challenging, the outcome from changing the master schedule was vital for creating the foundation for a PLC.

Another way in which a principal can play a key role in creating a PLC culture is to provide teachers multiple opportunities to fill leadership roles (Lambert, 1998). A major component of middle school philosophy is interdisciplinary teaming (Association for Middle Level Educators, 2010) in which a core group of students are scheduled with specific content teachers. These teams are lead by a teacher leader who functions similarly to a department chairperson. When the building administrator began establishing a PLC foundation, each team leader's time of service was considered and changes were subtly instituted. Team leaders could serve for two years in an effort to allow other teachers an opportunity to serve in this capacity. The leaders of each of the interdisciplinary teams were required to attend bi-weekly meetings. At these meetings, part of the agenda was reserved for leadership training segments in an effort to support teacher leaders in their leadership role.

In addition to interdisciplinary teams, the principal eventually incorporated school improvement teams (Southern Regional Education Board, 2011). These teams were identified as Focus Teams because they had a specific focus to address areas in needs of improvement as identified by the provisions set forth in the No Child Left Behind Act. This allowed leadership opportunities for additional teachers in an effort to guide the school community to address these shortcomings. The direct outcome of this empowering practice was evident in the progressive action teachers pursued to improve student achievement and engaging instructional practices.

Principals are central for creating the conditions for a PLC as well as setting the expectations for improved student achievement. They can play a key role in creating a PLC culture in many different ways. Once school leaders and educators commit to the fact that all students can and will learn, they have the core foundation to begin to function as a professional learning community focusing on four critical questions:

1. Exactly what is it we want all students to learn?

2. How will we know when each student has acquired the essential knowledge and skills?
3. What happens in our school when a student does not learn?
4. How can we extend and enrich the learning for students who have demonstrated proficiency? (DuFour et al., 2004)

When the school's academic atmosphere is laced with a sense of urgency and teachers are empowered to provide a quality education to all students, then teaching professionals are equipped to do whatever it takes to provide academic intervention. PLCs must become a natural part of the school culture; they must become the framework for creating a sustainable, student-centered environment.

Summary

Reflecting on the various school improvement ideologies, theories, and/or programs, the one approach regarding school improvement which seems to have the most significant impact on student achievement and teacher empowerment is the implementation of PLCs. PLCs are the most promising strategy for sustainable school improvement and for developing the capacity of school personnel to address the academic needs of the children (Eaker et al., 2002). PLCs provide a framework for implementing school improvement teams, addressing federal mandates such as No Child Left Behind, and creating a culture of high expectations.

With the implementation of PLCs, district and school leadership will have the foundation to build a responsive culture where teachers (a) receive meaningful professional development, (b) are supported in their efforts to provide a high-quality education to all students, (c) establish measureable goals, (d) use data to guide decisions, and (e) have a greater sense of professional efficacy (DuFour & Eaker, 1992, 1998; Marzano & Waters, 2009; Richmond & Manokore, 2011). More importantly, the culture of the school will be enhanced by the level of collegiality as

well as the emphasis on professional growth, both of which are vital to meeting the needs of each student and are valued by teachers (Richard & Manokore, 2011). Through strong school leadership and the establishment of PLCs, the school culture will be defined as a learning environment where educators are academically responsive to student needs. It will be a culture where school personnel are allowed to address student achievement by focusing on areas which include data, instructional strategies, literacy across the curriculum, and behavioral supports (Southern Regional Education Board, 2011).

PLCs empower teachers and administrators to set the course for continuous improvement focused on student achievement and instruction. Although autonomy is essential for professional growth, some aspects of education are deemed nonnegotiables and PLCs fall into this category. Principals, through the power of their PLCs, have the ability to make site-based decisions in the best interest of their school community. This may include scheduling, school level leadership development, approaches to academic intervention, or other school improvement efforts like professional development specific to the location. PLCs include all aspects of doing whatever it takes to help all students be successful. They encompass sustainable measures such as building leadership capacity, providing teachers with a greater sense of purpose and meaning, and requiring the necessary transparency to advance learning and accountability. PLCs are the most beneficial and sustainable system-wide school improvement approach (DuFour et. al., 2004; DuFour et. al., 2010; DuFour & Marzano, 2011).

Chapter III

Research Design and Methods

Introduction

The purpose of this study is to identify what actions districts and schools can take to insure school improvement efforts, based on sound research, are implemented. Research has demonstrated that PLCs are the framework for establishing a culture focused on student achievement while at the same time empowering educators to collaborate in an attempt to improve instruction and address ongoing challenges (Doolittle et al., 2008; DuFour, 2011; DuFour et al., 2004; Fulton & Britton, 2011; Malone & Smith, 2010). A sustainable PLC is possible if school leadership immerses their staff members in research-based PLC practices.

Data obtained for this study are from a 2012 certified staff survey and an administrative survey. Certified staff and principals completed a Likert scale survey along with two open-ended questions after receiving initial PLC training from Solution Tree Press during the months of August and September of 2012. The purpose of the survey was to determine the understanding of PLCs and the depth of PLC implementation. Survey questions were guided by the work found at All Things PLC.com sponsored by Solution Tree Press; *Learning By Doing: A Handbook for Professional Learning Communities At Work, 2nd ed.* (DuFour et al., 2010); and *Whatever It Takes: How Professional Learning Communities Respond When Kids Don't Learn* (DuFour et al., 2004).

Mixed-Methods Research Strategy – The Triangulation Design

A mixed-methods triangulation design was chosen to strengthen and offset any weaknesses of using either a quantitative or qualitative approach. Cresswell (2008) explains

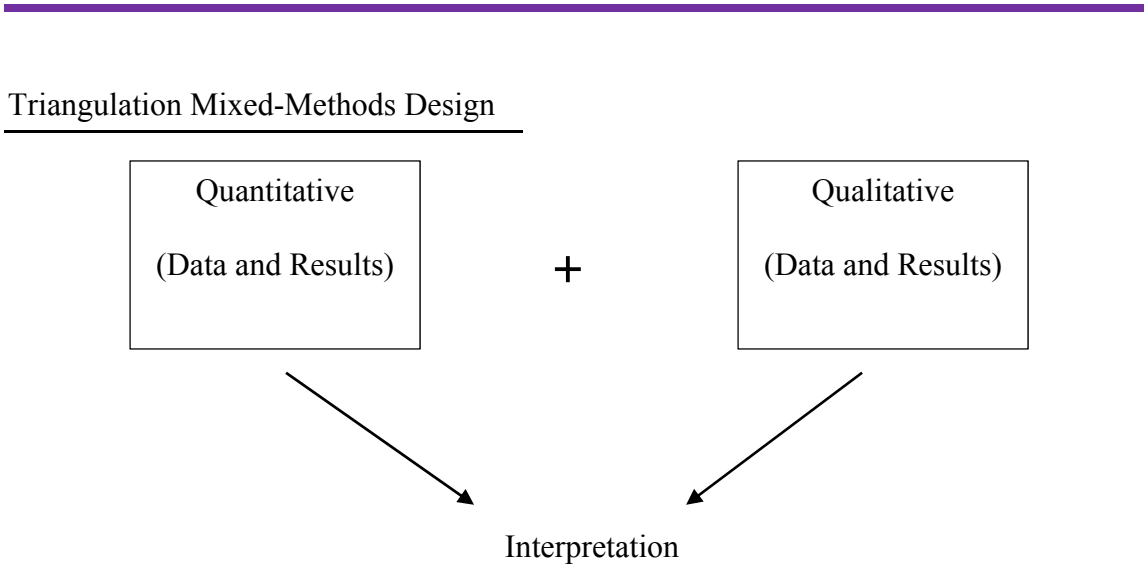
> quantitative scores on an instrument from many individuals provide strengths to offset the weaknesses of qualitative documents from a few people. Alternatively, qualitative, in-

depth observation of a few people offers strength to quantitative data that does not adequately provide detailed information about the context in which individuals provide information (e.g., the setting). (p. 577)

A visual model (see Figure 2) of the Triangulation Mixed-Methods Design provides a structure to this study how both quantitative and qualitative data were used in this study.

Figure 2

Triangulation Mixed-Methods Design



(Cresswell, 2008, p. 557)

Using the Qualtrics Survey software, all certified staff received an online survey (Appendix A) directed towards the teachers' perception and understanding of PLCs and the influence of PLCs on the school's existing culture. All district building administrators received an online survey (Appendix B) focused on their perceptions of the overall effective implementation of PLCs in their particular buildings. The survey also contained two open-ended questions designed to elicit in-depth answers to the research questions: What extent are the

foundational principles of PLCs established throughout the district? What differences between elementary and secondary schools exist in the implementation of PLCs? What differences in teacher and principal perceptions exist regarding the implementation of PLC in a building?

Between the months of February and April 2012, all district administration participated in a book study of *Learning By Doing; A Handbook for Professional Learning Communities at Work* (DuFour et al., 2010). During the month of August 2012, principals, along with their leadership team, attended The Professional Learning Communities at Work Coaching Academy presented by Solution Tree Press and facilitated by a Solution Tree Press consultant. School leadership teams attended the 2012 Coaching Academy August 8, 9 and September 19, 20. All participants completed the survey within a two week window starting October 8, 2012 and ending October 26, 2012.

Descriptive statistical analysis was used to disaggregate the survey responses and determine frequency. Prior to conducting the research survey, each survey question underwent a Content Validity Index check. Along with the validity index check, Cronbach's Alpha was used to compare internal consistency and validity. At the completion of the survey, certified staff members and administrators at both the elementary and secondary school level were compared using the Mann-Whitney U. The Mann-Whitney U was also used to compare responses between schools receiving Title 1 funding and those schools that did not receive funding. In addition, Cohen's *d* was used to determine practical significance when the outcome was deemed significant.

To evaluate the open-ended questions, responses were categorized by themes. Themes were sorted for initial coding and then grouped to reflect commonalities. Patterns and salient themes were determined. Furthermore, "recurring ideas or language, and patterns of belief"

(Marshall & Rossman, 2011, p. 214) were identified and categories of meaning emerged.

Participants

Participants were chosen from a public school district in the northwest region of the United States. This school district has undergone significant growth in student population since 2000. Based on data from the U.S. Census Bureau (2010), this area has experienced an increase in population between 12% to 123%. The district is located in two bordering counties, and comprises a portion of several towns and two cities. It also includes the unincorporated county areas to the north, south, and east of these city centers. Student enrollment has increased 41% from 7,658 students in 2000 to 10,800 in 2013. Student enrollment for the 2013-2014 school year is projected to be over 11,000. In addition, the district will open another new elementary school in the fall of 2013.

With a student population of approximately 10,800, this district is ranked as one of the top 10 largest school districts in the state. All of the schools and programs are fully accredited. The district employs over 1,300 people, of whom, nearly 550 are certificated personnel. Roughly 65% of all students are transported by bus to and from school, with instruction taking place in 22 locations throughout the district with comprehensive Special Education programs operating throughout all locations.

These locations include:

- 13 elementary schools for grades PreK-6
- online home schooling, serving grades K-8 and grades 9-12
- two comprehensive middle schools for grades 7-8
- an alternative middle school for grades 7-8
- two comprehensive high schools for grades 9-12

- a professional technical high school for grades 9-12
- an alternative high school for grades 9-12
- an academy for special needs students in grades 7-12,
- an online high school for students seeking credit acceleration or recovery.

All participants were adults (over the age of 18) and were competent to give consent. The researcher gained consent from the district Superintendent to involve all district certified staff and administrators in this research study (Appendix C). In addition, consent was obtained from building administrators (Appendix D). Informed consent was also obtained through the survey tool. The first page of the tool described the outline of the survey and allowed each participant to give their consent.

Research Questions

The aim of the study was to determine what actions district administration needs to take in order to implement PLC foundational principles and practices in each school throughout the district. An additional objective was to determine what actions principals need to take in order to implement PLC foundational principles and practices with their staff members. The fundamental questions of this study are: To what extent are the foundational principles of PLCs established throughout the district? What differences between elementary and secondary schools exist in the implementation of PLCs? What differences in teacher and principal perceptions exist regarding the implementation of PLC in a building?

The sub-questions derived from these questions are:

1. What role does the district play in developing a PLC environment?
2. What is the perception of a PLC among principals?
3. What experience have principals had creating a PLC culture?
4. What PLC principles must be in place in order to effect change?

5. What PLC practices must be in place in order to effect change?
6. How are new administrators and building level personnel oriented to the PLC model?

Data Gathering

Creswell (2008) contends that quantitative research must adhere to the following: (a) research seeks observable, measurable data on variables; (b) data collection involves the study of a large sample size; (c) data collection involves the gathering and interpretation of numeric data; and (d) data collection uses instruments identified prior to the start of the study.

Information gathered for this research study on PLCs included all four of these methods to varying degrees. Participants were asked to complete a Likert scale survey. Prior to administering the survey, it underwent a Content Validity Index check as well as an internal validity check using Cronbach's Alpha (Cronbach, 1951; Yudulgul, 2008). Participants completed the survey regarding their perceptions of the PLC process being implemented in their respective schools using Qualtrics Survey software (Bertram, n.d.). Over 300 participants (administrators $n \geq 25$; certified staff $n \geq 280$) were included in this study. Data was then analyzed using the Mann-Whitney U and Cohen's *d* (Tanner, 2012). Analysis was conducted using SPSS.

In addition to completing a Likert scale survey, teachers and administrators responded to open-ended questions in an attempt to address the challenges inherent when implementing systemic change (i.e. PLC principles and practices). This qualitative data was disaggregated into themes and triangulated with the quantitative data. Creswell (2008) defines triangulating mixed-methods design as a matter of concurrently collecting both qualitative and quantitative data and then using the results to better understand the problem. Issues considered outliers because they fell outside of the identifiable themes were grouped into a separate category and reviewed to identify those topics which appeared repeatedly and consistently. Qualitative data was examined

for reference to the perceptions and understandings of PLC practices evident in their schools. Qualitative data was compared to the quantitative data to validate the evidence generated from the surveys.

Role of the Researcher

The study of PLCs is useful in the field of education because of the complex challenges resulting from punitive accountability measures. This mixed-methods study provides an increased understanding of PLCs and the impact they have on improving school culture. The researcher completed the National Institutes of Health (NIH) certification requirements to protect the rights of the participants in this research study (Appendix E). In addition, Human Research Review Committee (HRRC) approval was attained (Appendix F) to provide further oversight and protection of the rights of the participants. The researcher has upheld the requirements of both HRRC and NIH with complete fidelity. The study was conducted ethically and participants' answers were treated confidentially and with respect. A high standard of trustworthiness was upheld during the nine months this study was conducted. The primary role of the researcher was in the implementation and initial delivery of the district directed PLC model for school improvement. The researcher continued this role by supporting and aiding in the development of ongoing professional-development as information was obtained through responses solicited through this research study. The researcher collected and analyzed the results of this study both quantitatively and qualitatively. During this study, the district contracted with Solution Tree for in-depth PLC training. Although Solution Tree provided professional development services, the researcher is not beholding to the company nor receiving any personal benefit.

Reliability and Validity

Reliability and validity are necessary means to insure the data being reported is trustworthy and accurately communicated. Reliability refers to how a certain test, procedure, or

survey instrument will produce similar results in different circumstances assuming all variables remain constant. Validity, on the other hand, is more difficult to ascertain. Validity refers to how close the researcher has actually measured what was intended to be measured (Roberts & Priest, 2006).

In order to gather accurate data for this research on PLCs, the survey underwent a rigorous content validity review. Polit and Beck (2006) define content validity as the (1) degree to which a test, procedure, or tool has an appropriate sample of items being measured; (2) whether or not the items sampled adequately represent the area of the content addressed by the instrument; and (3) the extent to which a test, procedure, or tool adequately samples the topic when measuring phenomena. Content validity can be summarized as the "extent to which the questions on the [survey] and the scores from these questions are representative of all the possible questions that a researcher could ask about the content" (Creswell, 2008, p. 172).

The content validity review process of all survey questions was completed by educational professionals from various schools and districts around the state of Idaho. Finding individuals willing to participate in the validity survey proved to be challenging. Even though individuals offered to assist, many failed to complete the survey and one participant appeared to complete the survey reflecting on their PLC experience, not on whether the questions were valid. Overall, participants who completed the validity check were knowledgeable of PLC practices and were considered experts in the field of education.

An Item Content Validity Index (I-CVI) was calculated using a recommended table of values to identify the proportion of experts required to establish content validity beyond the 0.05 level of significance (Lynn, 1986; Polit & Beck, 2006). Using Qualtrics Survey software, participants rated proposed survey questions on a scale of one to four: Not Relevant, Somewhat Relevant, Quite Relevant, and Highly Relevant. At the completion of the validity survey, Scale

Content Validity Index (S-CVI) was calculated to determine the strength of the survey by eliminating questions found to be weak or unrelated to the topic.

In addition to content validity as a measure of what was intended to be measured, Cronbach's Alpha is used to estimate internal consistency and is used most often when an instrument or test is administered one time. Named for the statistician Lee Cronbach, this commonly used measure of reliability is based on taking the score for each item and comparing it to the scale of scores for all the other items on the instrument (Cronbach, 1951; Tanner, 2012; Yudulgul, 2008). It is important to note, a quantitative measurement of reliability can be used for all forms of reliability with the resulting coefficient at 0.80 or higher (Gliem & Gliem, 2003; Werth & Werth, 2012). However, there are instances when a minimum score of 0.70 is acceptable for a newly developed scale. Nevertheless, research should rely upon scales which yield scores with a minimum reliability of .80. In research projects where important decisions are being made based on scale scores, reliability greater than 0.90 should be expected (Cronbach, 1951; Gliem & Gliem, 2003; Yudulgul, 2008).

Data Collection Procedure

Marshall and Rossman (2011) advise researchers to use solid rationale to be sure the choice of methods is based on the conceptual framework and will build on previous theoretical, empirical, and methodological understanding. At the proposal stage, the particular data collection procedure was selected to create meaningful research questions and in an effort to give meaning to the research project.

Collection of data for this mixed-methods study on PLCs was obtained by using Qualtrics Survey Software for both the certified staff members and administrators in the district. All participants were voluntary and were informed of their right to withdraw from the study at any time. All survey results were anonymous and only reported in an aggregate format (by reporting

only combined results). The data collected was stored in the HIPPA-compliant, Qualtrics-secure database and on the primary investigator's password protected home computer. In compliance with the Federalwide Assurance Code, data from this research project will be kept for three years, after which all data from the study will be destroyed (45 CFR 46.117).

Delimitations

Delimitations limit the extent of the study (Roberts, 2010). The following were delimitations of this study:

1. Participants included only administrators from one school district who have a wide variety of experiences creating a school culture.
2. It is assumed participants understand the PLC model (because of previous district training) well enough to answer survey questions.
3. Administrators participating in this study were required to take part in The Professional Learning Communities at Work Coaching Academy which is training offered through Solution Tree (2011) and they were expected to conduct similar PLC trainings at their respective schools during the 2012-2013 school year.
4. Participants in this study were required to participate in a district-wide book study using DuFour et al. (2010) handbook: *Learning By Doing: A Handbook for Professional Learning Communities at Work, 2nd Edition.* There is an assumption that all faculty members and administrators completed reading the book and participated in a book study discussion at each of the individual schools.

Limitations

Marshall and Rossman (2011) emphasize "All proposed research projects have limitations; none is perfectly designed" (p. 76). Limitations are possible weaknesses or problems with the research study as identified by the researcher. Creswell (2008) states 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. (p. 207)

The limitations of this study are:

1. The research study was only conducted in Idaho.
2. The research study was conducted in only one school district in Idaho.
3. The administrative survey results were collected only by administrators self-reporting their perceptions.
4. The certified staff survey results were collected only by teachers and counselors self-reporting their perceptions.
5. The themes and disaggregation of data was conducted by the researcher who defined the themes which is effected by bias based on researcher's own self-perceptions and understanding.
6. Perceptions of those who participated are biased based on the participant's own experiences and attitudes.

Chapter IV

Results

Introduction

Designed as a Triangulation Mixed-Methods study, the outcome of this research will provide an increased understanding of PLCs and the impact they have on improving school culture. The researcher analyzed perceptions of certified staff members and administrators in both elementary and secondary settings to determine their understanding of PLCs. District administration was also surveyed to determine their depth of understanding regarding the foundational principles and practices found within a PLC. Data was collected through a Likert scale survey using Qualtrics Survey software. Participants were asked a series of questions which related to the principles and practices of functioning PLCs. These questions were generated from the work found at All Things PLC.com sponsored by Solution Tree Press; *Learning By Doing: A Handbook for Professional Learning Communities At Work, 2nd ed.* (DuFour et al., 2010); and *Whatever It Takes: How Professional Learning Communities Respond When Kids Don't Learn* (DuFour et al., 2004). Survey questions were rated using a Likert scale survey with five possible ratings. Participants were asked to indicate their level of agreement with a given statement using a five-point scale:

1 = We have consensus and act in accordance with our consensus

2 = Our school has addressed this issue

3 = Uncertain

4 = This is true of some but not all the members of our school

5 = This is not true of our school

The purpose of this study was to identify what actions districts and schools can take to insure school improvement efforts using the research-based PLC model are implemented. This study examined the efforts of one school district as they trained and guided their principals and certified staff in incorporating PLC foundational practices into their district culture and into the cultures of each school. The overarching questions guiding this research are: To what extent are the foundational principles of PLCs established throughout the district? What differences between elementary and secondary schools exist in the implementation of PLCs? What differences in teacher and principal perceptions exist regarding the implementation of a PLC in a building? The following sub-questions also guided this study:

1. What role does the district play in developing a PLC environment?
2. What is the perception of a PLC among principals?
3. What experience have principals had creating a PLC culture?
4. What PLC principles must be in place in order to effect change?
5. What PLC practices must be in place in order to effect change?
6. How are new administrators and building level personnel oriented to the PLC model?

Timeline

In February 2012, the researcher, along with two associates, began initial PLC professional development training with all the administrators participating in the research study. Using the works of DuFour et al. (2010), PLC training was conducted through the month of April. District leadership made a commitment to implementing PLCs district wide and in the month of May purchased *Learning By Doing: A Handbook for Professional Learning Communities at Work* (DuFour et al., 2010) for all certified staff members. Principals were then instructed to conduct a book study with their staff members in an effort to introduce the PLC school improvement model.

In addition to the book study, each principal identified a school-based PLC leadership team. Elementary school level teams consisted of the principal and two lead teachers. Secondary school level teams consisted of the principal and three to four lead teachers. These teams received intensive PLC training and instruction from a Solution Tree Press consultant. This training was an opportunity to immerse the leadership teams in the foundational principles and practices of PLCs. The individual school leadership teams were then given the directive to share the PLC practices and principles with their respective staff members. In addition to this professional development, district leadership calendared early release time on Wednesdays throughout the 2012-2013 school year in an effort to provide teachers time to work together in collaborative groups. PLC professional development was also provided for building administrators on a bi-weekly basis during district administration meetings.

After the majority of the Solution Tree PLC training had been completed and principals had an opportunity to begin training their staff in PLC practices, the Certified Staff PLC Survey and the Administrators' PLC Survey were emailed to participants. The timeline (see Appendix G) for PLC training and the administration of the survey correlated resulting in meaningful feedback from participants. The survey was completed during a two-week window in October.

Survey Validity and Reliability

Content validity index. In order to insure a high level of validity, a content validity index (CVI) survey was sent to educators familiar with PLCs from various districts throughout Idaho. In an effort to complete the validity check, it took multiple attempts and several email requests (see Appendix H) to members of various school communities to recommend teachers and administrators who would be willing to participate. Overall, participants who completed the validity check were knowledgeable of PLC practices and their assistance was greatly appreciated.

The primary goal was to have at least six teachers complete the CVI for the certified staff survey and at least six administrators complete the CVI for the administrator survey. The initial email CVI survey request was sent out to potential participants on August 23, 2012. By September 25, 2012, both the administrator and certified staff surveys had underwent the CVI process and were edited. Those questions which were rated 80% or higher remained on the survey. Any question(s) below 80% was reviewed and either rewritten or eliminated. Any rewritten question(s) underwent another CVI check to insure the question(s) met expectations. The actual surveys were then edited to improve overall validity (Appendix I).

Cronbach's Alpha. In addition to the CVI check, both the certified staff survey and the administrator survey underwent a reliability check using Cronbach's Alpha. Cronbach's Alpha "estimates internal consistency" (Tanner, 2012, p. 398). The following table (Table 1) disseminates the results of the Certified Staff PLC Survey where N = 208 represents the number of valid surveys completed by staff members; N = 76 are the number of surveys excluded from the number of valid surveys because they were incomplete; N = 284 represents the total number of staff members who agreed to participate in the survey.

Cronbach's Alpha results were equal to 0.976. Based on the work of Gliem and Gliem (2003) and Werth and Werth (2012), there are times when a score of 0.70 is acceptable for newly developed scales. However, sound research should rely upon scales which yield scores with a minimum reliability of 0.80. The Cronbach's Alpha reliability score from the certified staff survey equals 0.976 which is an excellent score in regard to internal reliability. This high score may be attributed in part to the initial CVI.

Table 1

Cronbach's Alpha Results for Certified Staff PLC Survey

Cronbach's Alpha Results for Certified Staff PLC Survey
Case Processing Summary

		N	%
Cases	Valid	208	73.2
	Excluded[a]	76	26.8
	Total	284	100.0

a. Listwise deletion based on all variables in the procedure.

Reliability Statistics

Cronbach's Alpha	Cronbach's Alpha Based on Standardized Items	N of Survey Items
.976	.976	41

Source: SPSS (2013)

Cronbach's Alpha results for the Administrator survey are shown in Table 2. Where N = 22 represents the number of total surveys completed; N = 4 are the number of surveys excluded from the Cronbach's Alpha results because the surveys were incomplete; N = 26 represents the number of administrators who initially agreed to participate in the survey.

Table 2

Cronbach's Alpha Results for Administrators' PLC Survey

Cronbach's Alpha Results for Administrators' PLC Survey

Case Processing Summary

		N	%
Cases	Valid	22	84.6
	Excluded[a]	4	15.4
	Total	26	100.0

a. Listwise deletion based on all variables in the procedure.

Reliability Statistics

Cronbach's Alpha	Cronbach's Alpha Based on Standardized Items	N of Items
.954	.954	25

Source: SPSS (2013)

Once again the Cronbach's Alpha reliability statistics of 0.954 is above the minimum accepted score of 0.80 for sound research. This is an excellent score for internal consistency and reliability for the Administrators' PLC Survey.

PLC Survey Results

Research survey. The number of district employees receiving an invitation to complete the PLC survey totaled 548 individuals. This breaks down to the 515 certified staff invited to participate in the Certified Staff PLC Survey and the 33 administrators invited to participate in the Administrators' PLC Survey. The survey was sent to participants' district email addresses using Qualtrics Survey Software. The survey window was open from October 8, 2012, through October 19, 2012. Additional emails were sent during this timeframe to participants encouraging them to complete the survey and also thanking participants who completed the survey during the

survey window which was done anonymously through Qualtrics Survey Software (see Appendix J). At the close of the survey, a total of 284 certified staff members and 26 administrators (Table 3) had completed the respective surveys.

Table 3

Percentage of Participants Completing Survey

Participants	Total invited to Participate	Total completing Survey	%
Certified Staff	515	284	55.0%
Administrators	33	26	78.8%
Total Participants	548	310	56.6%

Quantitative findings. Foundational principles and practices are necessary in order for each school and the overall district to create a sustainable, student-centered culture. With this in mind, the survey questions were written to learn to what extent foundational practices had been implemented and to answer the following research questions: To what extent are the foundational principles of PLCs established throughout the district? What differences between elementary and secondary schools exist in the implementation of PLCs? What differences in teacher and principal perceptions exist regarding the implementation of a PLC in a building?

Participants were asked to complete a Likert scale survey. Survey questions were rated using a Likert scale survey with five possible ratings. Participants were asked to indicate their level of agreement with a given statement using a five-point scale:

1 = We have consensus and act in accordance with our consensus

2 = Our school has addressed this issue

3 = Uncertain

4 = This is true of some but not all the members of our school

5 = This is not true of our school

After the initial Solution Tree PLC training, the District Improvement Team convened and decided upon specific directions for school administrators to focus on during the 2012-2013 school year. The crux of this focus centered on student achievement. The District Improvement Team expected an emphasis on curriculum and instruction, as well as an emphasis on quality teacher collaboration by the school level PLC teams. Instruction, training, and examples were provided on how this was to be accomplished. Because of the District Improvement Teams' direction for the school PLC teams, specific questions from both the certified staff survey (Appendix K) and from the administrator survey (Table 10) were identified as core for establishing foundational PLC practices and supporting the actual work and expectations of the district PLC teams.

Quantitative results from the certified staff survey. After identifying these specific questions, the Mann-Whitney U test was used to analyze the ordinal data of the two independent groups comprised of elementary certified staff and secondary certified staff. The purpose was to determine if significant differences existed between these two groups. Cohen's *d* was also calculated for the data indicating a significant difference when $p < 0.05$. Cohen's *d* was treated as an absolute value and is interpreted as follows:

d = 0.4, or lower, the effect of the independent variable is "small"

d = 0.5 to 0.7, the effect size is "medium"

d = 0.8, or greater, the effect is "large" (Tanner, 2012, p. 167)

With this in mind, the overall results (Appendix L) yielded minimal differences between the two groups. Out of the 46 original questions, only eight resulted in a significant difference. When determining practical significance (Cohen's *d*), all eight questions yielded a "small" effect on the

independent variable. All questions that yielded a significant difference dealt with, to some extent, the school community's commitment to student learning.

When comparing certified staff members from Title 1 schools with non-Title 1 schools, the results were not significantly different (Appendix M). Using Mann-Whitney U to measure statistical difference, only question four and question eight (Table 4) had significant scores where $p < 0.05$. Cohen's *d* was calculated for these two questions only. The Cohen's *d* score also yielded a "small" effect on the independent variable.

Table 4

Significant Differences Between Elementary/Secondary Title 1 Participants

Survey Number	**Mann-Whitney U**	**p Score (p <0.05)**	**Cohen's *d***
4	225.0	0.037	0.23
8	230.0	0.023	0.25

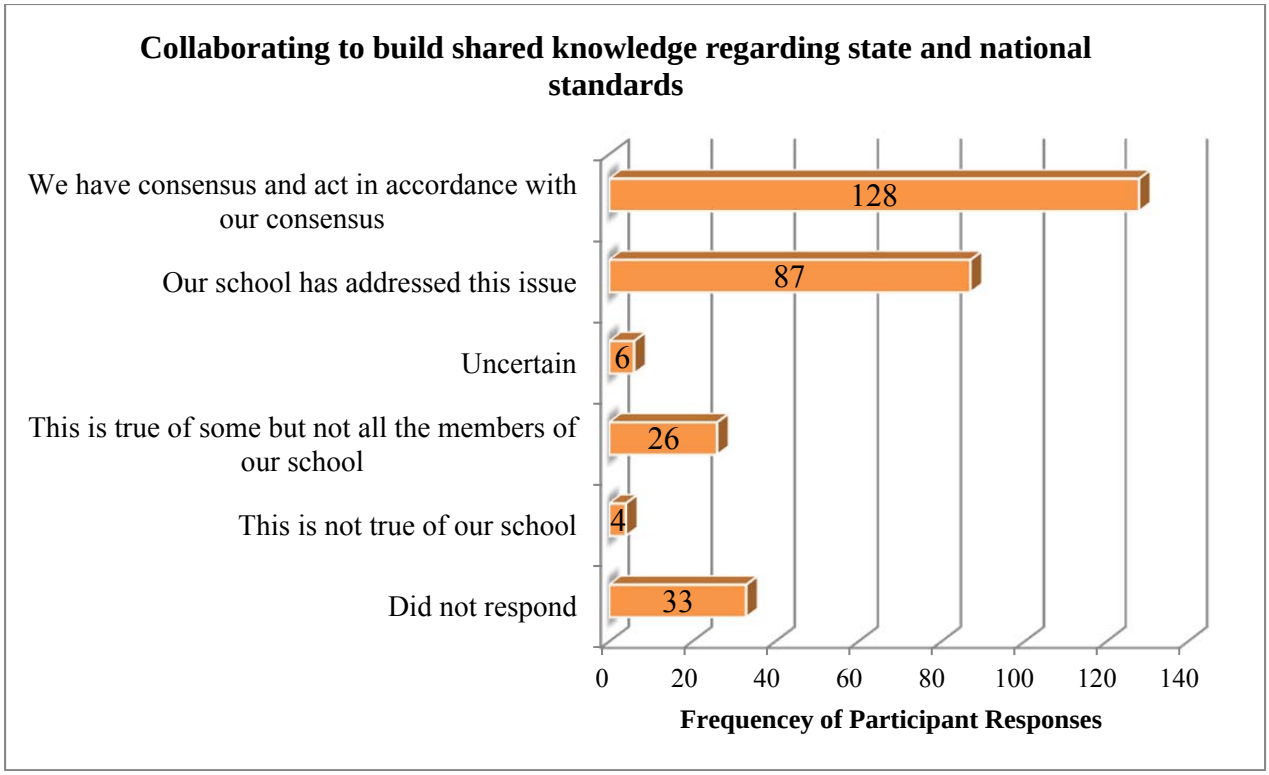
Source: SPSS (2013)

Research question one: to what extent are the foundational principles of PLCs established throughout the district? The PLC foundational principles of creating a culture of collaboration and having a unified purpose are essential to creating a sustainable PLC culture. Calculating the frequency of responses derived from the Likert scale, certified staff members appeared to recognize the importance of collaboration to implement curriculum standards and guides. For instance, question 16 asked participants to rate the level of collaboration in their school in regards to building shared knowledge on state and national standards. There were 284 participants who began the survey. A total of 251 (Figure 3) participants responded to this question. From those responding, 45% of certified staff members responding noted that their school community had consensus and acted according to their consensus while another 30.6%

responded that their school had addressed this issue. However, 9.2% of participants indicated this was true of some but not all members of their school. Six participants answered "Uncertain" while only four held it was not true of their school.

Figure 3

Certified Staff Survey Question 16



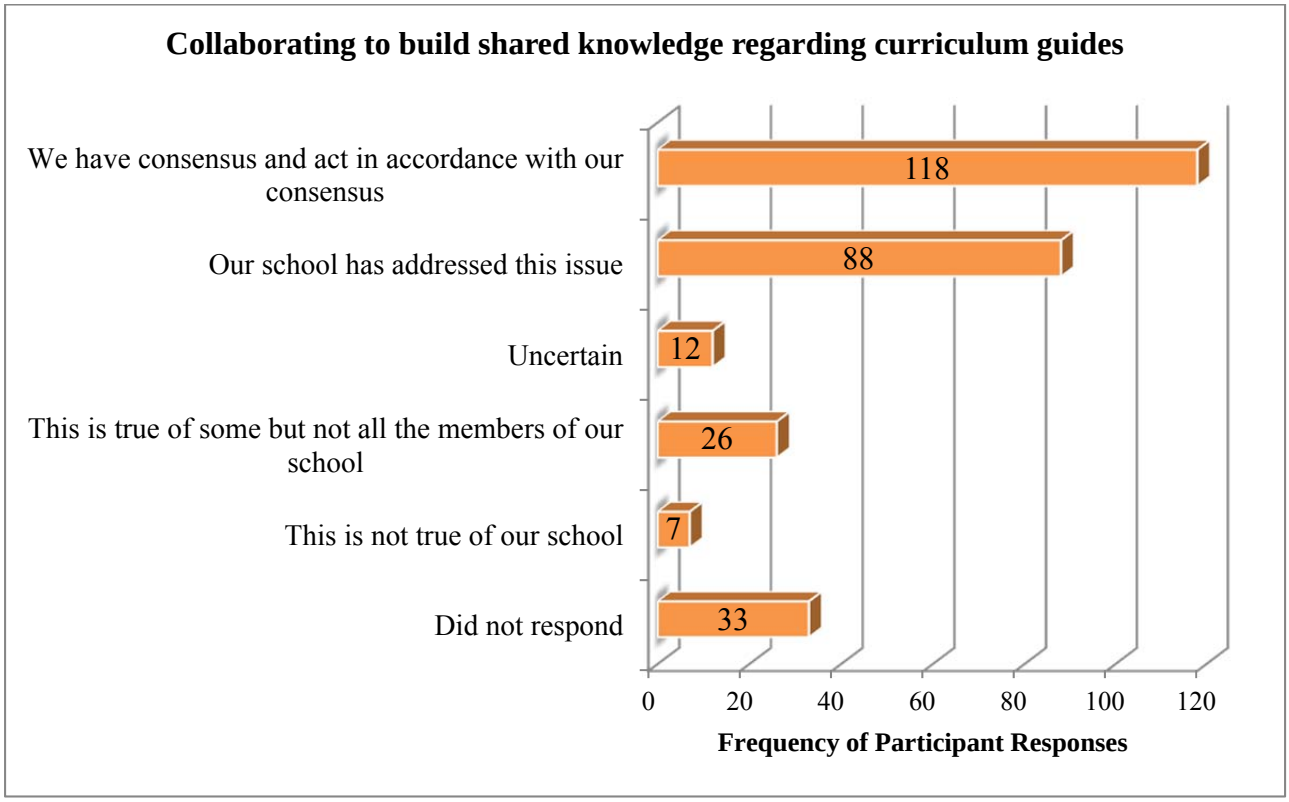
Source: SPSS (2013)

In addition, the frequency of responses to question 17 regarding participants' belief that they worked with colleagues to build shared knowledge regarding curriculum guides was also indicative of the foundational principle of creating a collaborative culture. A total of 251 (Figure 4) certified staff members answered this question. Participants' responses indicated that 41.5% responded that their school faculty has consensus and acts according to their consensus while another 31% noted their school had addressed this issue. Once again, however, 9.2% of participants held this was true of some but not all the members of their school. Twelve

participants answered “Uncertain” to this survey question and seven participants answered that it was not true of their school.

Figure 4

Certified Staff Survey Question 17



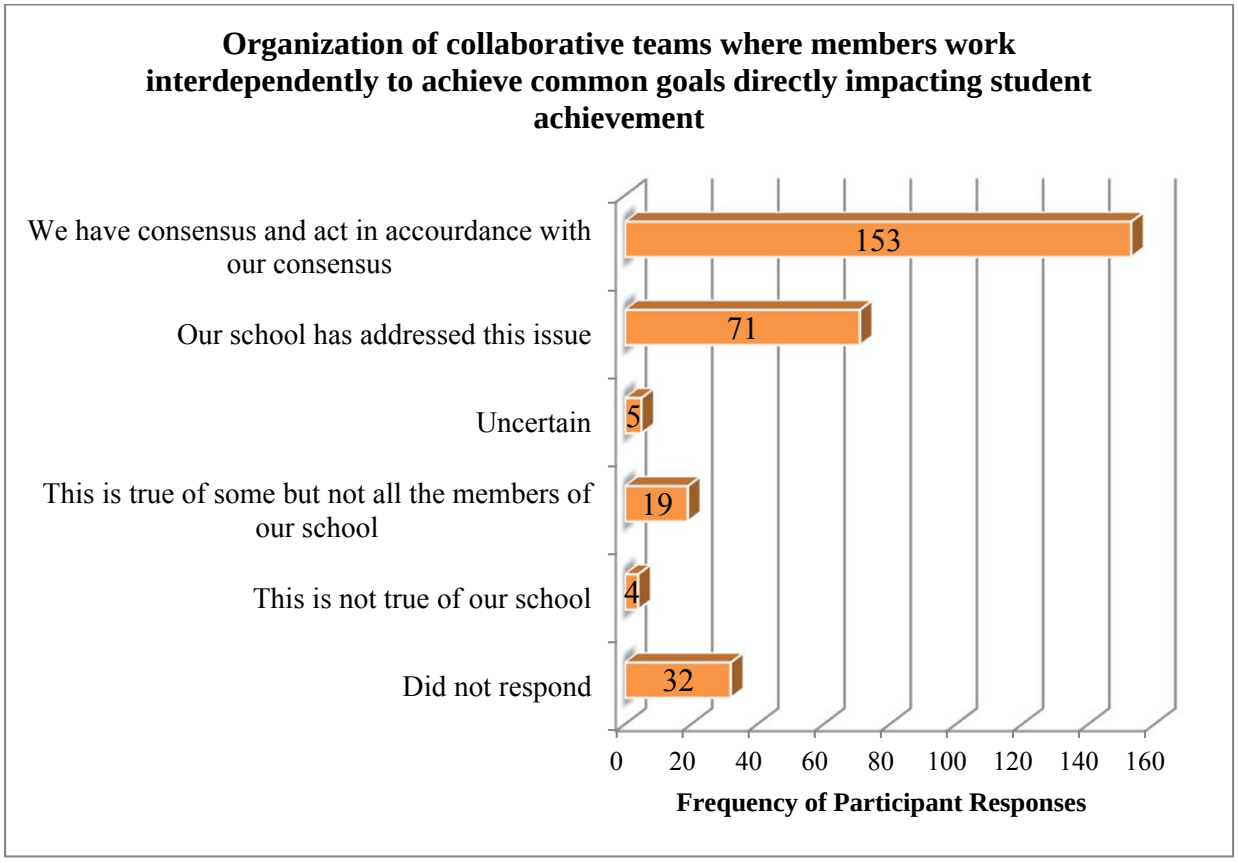
Source: SPSS (2013)

Another indicator that the PLC principle of creating a collaborative culture was the frequency of responses to question 25 regarding the organization of collaborative teams in which members work interdependently to achieve common goals directly impacting student achievement. A total of 252 (Figure 5) participants responded to this question. Of this total 53.9% noted their faculty had consensus and acted in accordance with their consensus. Another 25% indicated that their school has addressed this issue while 6.7% of participants held this was

true of some but not all members of their school. Less than 2% of participants were "Uncertain" or did not believe it was true of their school.

Figure 5

Certified Staff Survey Question 25



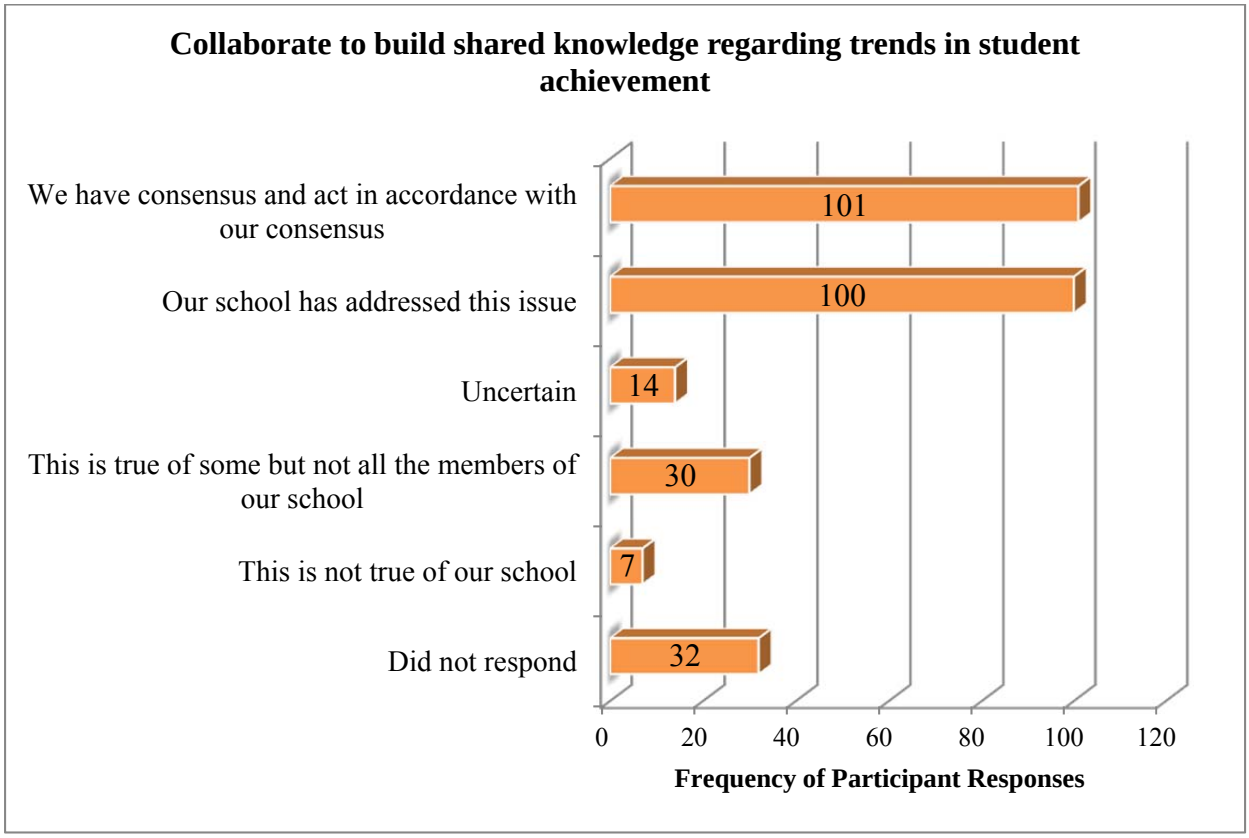
Source: SPSS (2013)

Question 18 asked participants to rank the level they collaborate with their colleagues to build shared knowledge regarding trends in student achievement. This is an important question in light of the fact that it is in direct correlation with the District Improvement Team's goal for every school. From the 252 participants responding to this question (Figure 6), 35.6% noted their school had consensus and acted accordingly, while 35.2% responded that their school had addressed this issue. Another 10.6% indicated this was true of some but not all the members of

their school. A total of 14 participants or 4.9% were “Uncertain”, while another 2.8% indicated this was not true of their school.

Figure 6

Certified Staff Survey Question 18



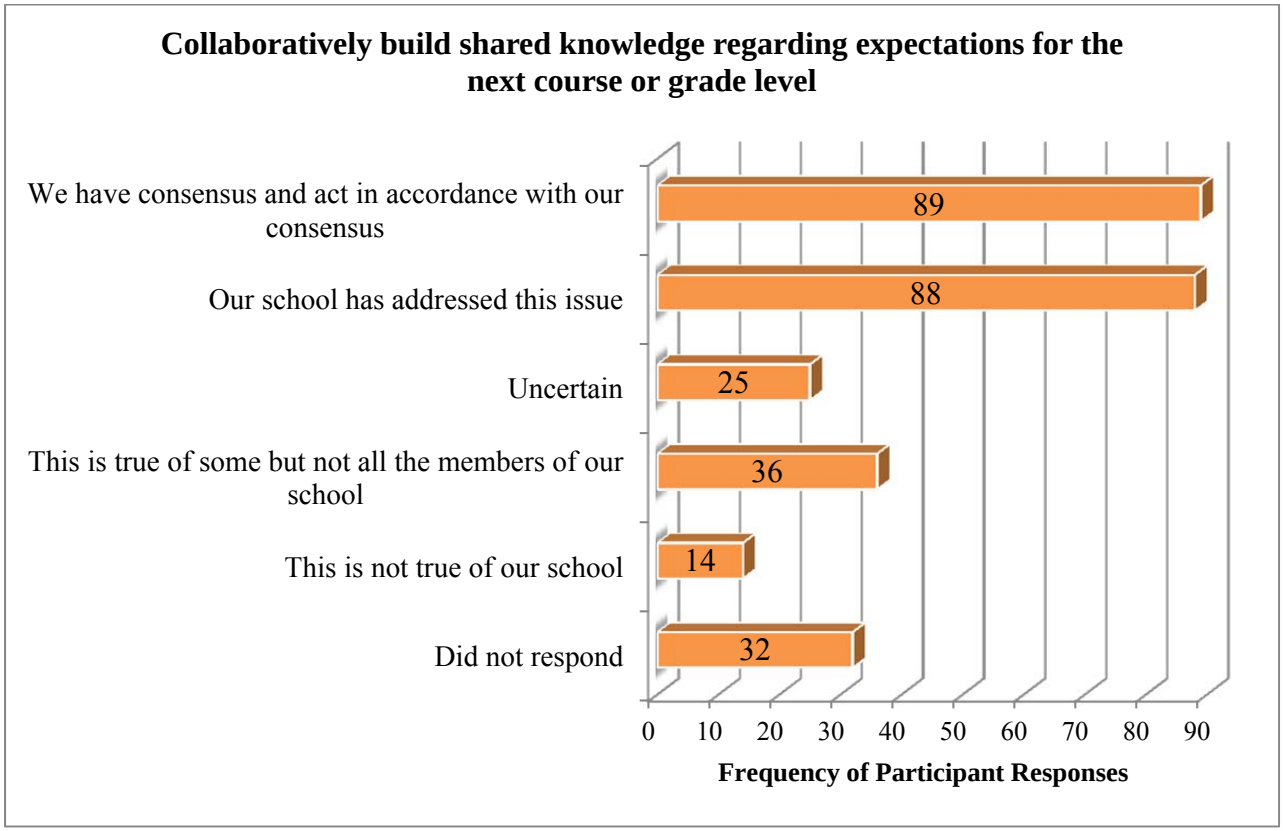
Source: SPSS (2013)

Question 19 asked participants to rate working with colleagues to build shared knowledge regarding the expectations for the next course or grade level. This question refers to the importance of having a vertically aligned curriculum which is necessary for improving student achievement (Carter, 2007). Of the 252 responses (Figure 7) to this question, 31.3 % held their faculty had consensus and acted accordingly while 31% noted their school had addressed this issue. Another 12.7% indicated this was true of some but not all the members of their school.

Interestingly, 25 participants (8.8%) chose "Uncertain" while another 14 participants (4.9%) did not believe it was true of their school.

Figure 7

Certified Staff Survey Question 19



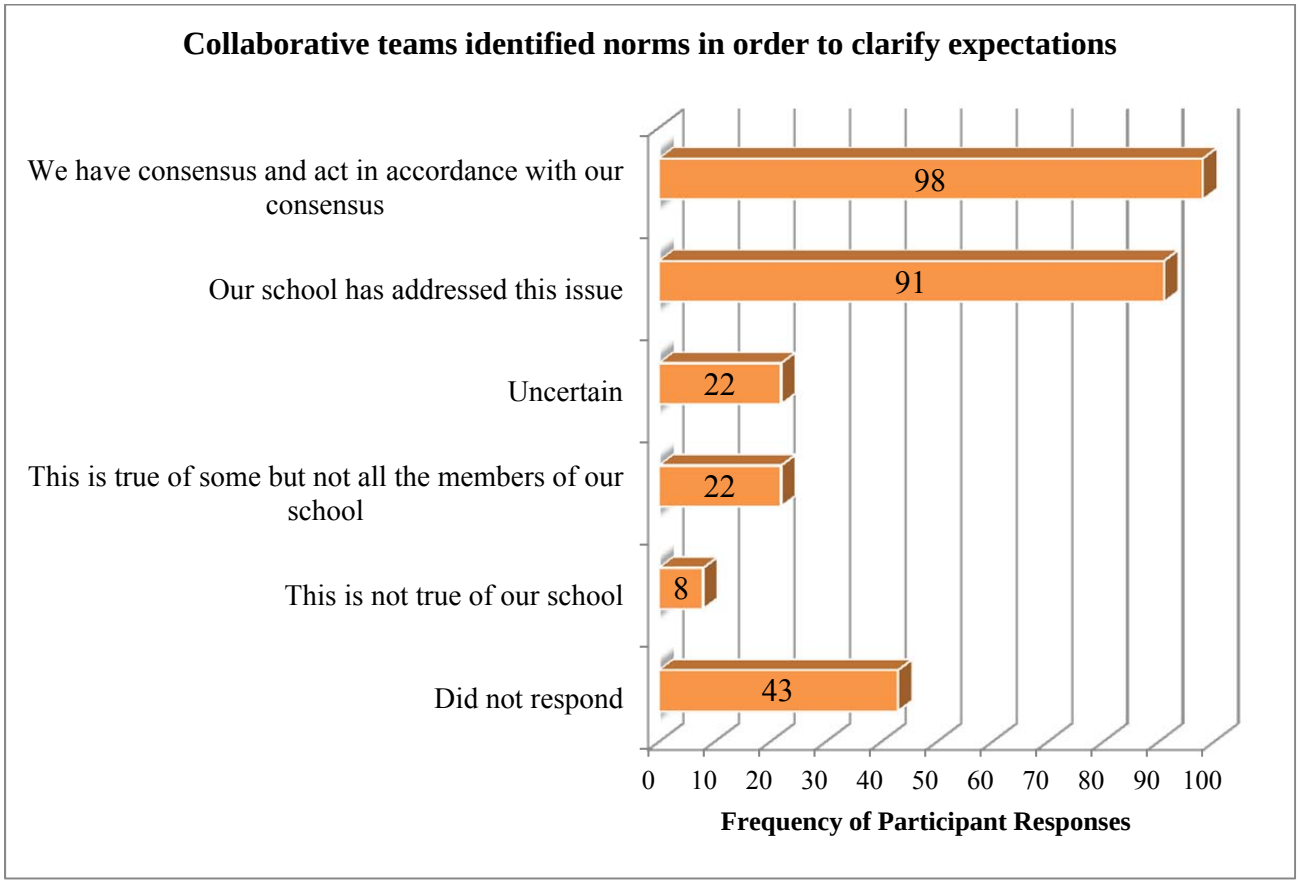
Source: SPSS (2013)

In addition to the PLC practice of collaboration as it relates to an emphasis on curriculum and instruction, certified staff members responded positively to the importance of establishing norms and expectations of their team members. Of the 241 certified staff members responding (Figure 8) to this question, 34.5% noted they honor the commitments they have made and indicated their school community has consensus and acts accordingly. The percentage of staff members who held their school had addressed this issue was 32%. However, the percentage of responses to "Uncertain" (7.7%), "This is true of some but not all of the members of our school"

(7.7%), and "This is not true of our school" (2.8%) indicate that approximately 20% of the participants do not view this as a practice specifically addressed in their schools.

Figure 8

Certified Staff Survey Question 31



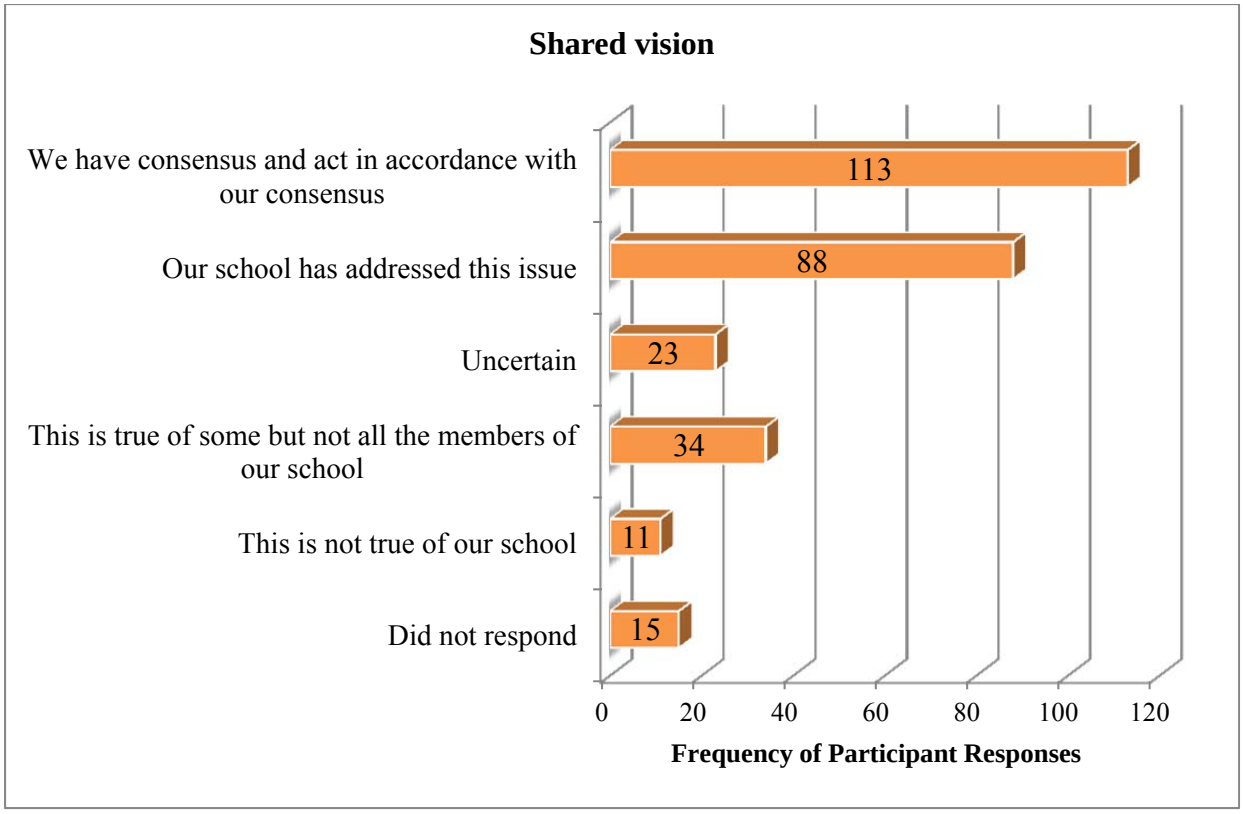
Source: SPSS (2013)

Collaboration is an essential part of PLCs; however, certain principles are critical to creating a sustainable PLC culture. The foundation of PLCs "rests upon the four pillars of mission, vision, values, and goals" (DuFour et al., 2010, p. 30). To create a sustainable PLC, these four pillars must be established and the school community must be willing to identify their shared sense of purpose. In question six, participants were asked to rate the level of their school having a shared vision. Out of the 269 responses (Figure 9) to this question, 39.8% indicated their faculty had reached consensus and acted accordingly while another 31% noted they had

addressed this issue. Add to this 12% responded that this was true of some but not all the members of their faculty while 8.1% were "Uncertain" and another 3.9% indicated this was not true of their school.

Figure 9

Certified Staff Survey Question 6



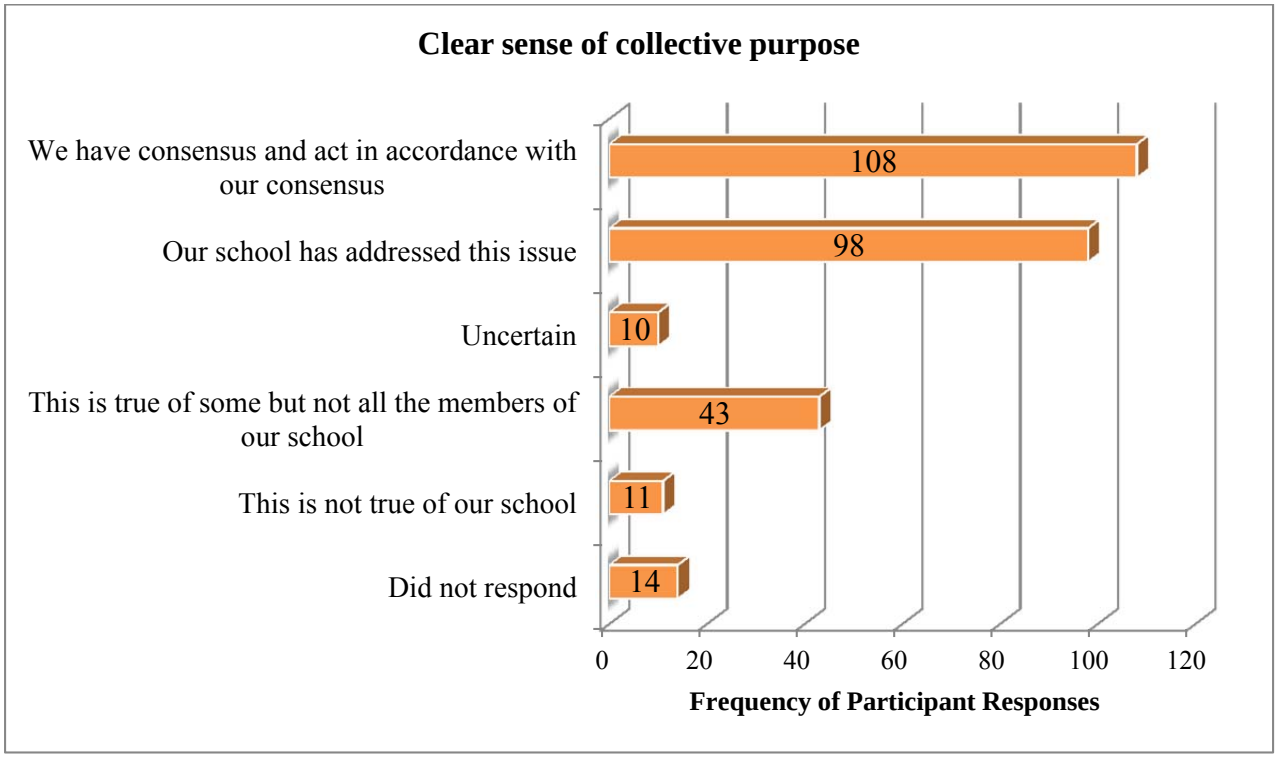
Source: SPSS (2013)

In conjunction with PLC foundational principles of mission, vision, values, and goals, participants were asked to rank their schools PLC practice of having a shared sense of purpose. A total of 270 certified staff members responded to this question. Of those responding (Figure 10), 38% of participants indicated that their schools had consensus and acted in accordance with their consensus and another 34.5% of respondents held that their school community had addressed this issue. However, 15% noted this was true of some but not all the members of the

school community. There were 3.4% who were "Uncertain" and another 3.9% who responded that it was not true of their school.

Figure 10

Certified Staff Survey Question 4



Source: SPSS (2013)

Research question two: what differences between elementary and secondary schools exist in the implementation of PLCs? Some significant differences occur between the elementary and secondary certified staff members when responding to the level of implementation of PLCs in their respective schools. From the comparison between elementary and secondary certified staff members, eight questions (Table 5) had results which were noted as significantly different (Appendix L). All questions which yielded results that were significantly different deal, to some extent, with the school community's commitment to student learning.

When determining practical significance (Cohen's *d*), all eight questions yield a "small" effect on the independent variable (Table 6).

Table 5

Elementary and Secondary Certified Staff Survey Questions Yielding Significant Differences

#4	At our school we have a clear sense of our collective purpose
#6	At our school we have a shared vision
#8	It is evident in our school that learning for all is our core purpose
#18	We work with colleagues to build shared knowledge regarding trends in student achievement
#22	We monitor the learning of each student's attainment of all essential outcomes on a timely basis through a series of frequent, team-developed common formative assessments that are aligned with high-stakes assessments students are required to take
#38	Collaborative teams of teachers regard ongoing analysis of evidence of student learning a critical element in the teaching and learning process
#40	Teachers use evidence of student learning to respond to students who are experiencing difficulty
#41	Teachers use evidence of student learning to enrich and extend the learning of students who are proficient

Table 6

Survey Questions Resulting in a Significant Difference

Survey Number	Mann-Whitney U	p Score (p <0.05)	Cohen's *d*
4	6298.5	0.000	0.28
6	6086.5	0.000	0.29
8	6260.5	0.000	0.30
18	5949.5	0.000	0.23
22	6320.0	0.007	0.17
38	5337.0	0.000	0.23
40	5320.5	0.000	0.24
41	4862.5	0.000	0.28

Source: SPSS (2013)

Quantitative results from the administrator survey. Administrative survey questions (Appendix N) which correlated closely with the district focus on student achievement, curriculum and instruction, and collaboration were first identified. These research questions were analyzed using Mann-Whitney U statistical test. The first comparison included the two independent groups of elementary administrators and secondary administrators. A second comparison of administrators included those principals of schools receiving Title 1 funding and those principals in schools who do not receive this funding. The purpose was to determine if there were significant differences between these groups. Cohen's *d* was also calculated for the data indicating a significant difference when $p < 0.05$. Cohen's *d* was treated as an absolute value.

The overall results yielded minimal differences between the elementary and secondary administrators. However, questions 14 and 25 (Table 7) were significantly different and the practical significance, as indicated by the Cohen's *d,* effect size was "medium" (Table 8).

Table 7

Administrator Survey Questions Yielding Significant Differences

#14	At my school, teachers use results from assessments to inform and improve professional practice
#25	District leadership have developed the capacity of school personnel to function as a PLC

Table 8

Mann-Whitney U Results Elementary/Secondary Administrators Comparison

Survey Number	Mann-Whitney U	p Score (p <0.05)	Cohen's *d*
8	44.0	0.305	
9	40.5	0.215	
13	57.0	0.909	
14	21.5	0.009	0.53
15	31.0	0.088	
17	45.0	0.494	
18	48.5	0.679	
19	46.5	0.576	
20	46.0	0.541	
23	52.5	0.907	
25	27.5	0.040	0.43
26	43.0	0.398	

Source: SPSS (2013)

When comparing administrators from Title 1 schools with non-Title 1 schools, the results are not significantly different (Table 9). From this data, Cohen's *d* was not calculated because no survey questions yielded any significant difference between the administrators in schools with an identifiable poverty rate and those administrators who lead in non-Title 1 schools.

Table 9

Mann-Whitney U Results Administrator Title 1 School Comparison

Survey Number	**Mann-Whitney U**	**p Score (p <0.05)**
8	33.0	0.054
9	54.5	0.683
13	60.5	1.000
14	47.0	0.347
15	32.0	0.153
17	33.5	0.185
18	36.0	0.258
19	37.0	0.301
20	42.0	0.517
23	41.5	0.486
25	38.5	0.341
26	39.5	0.394

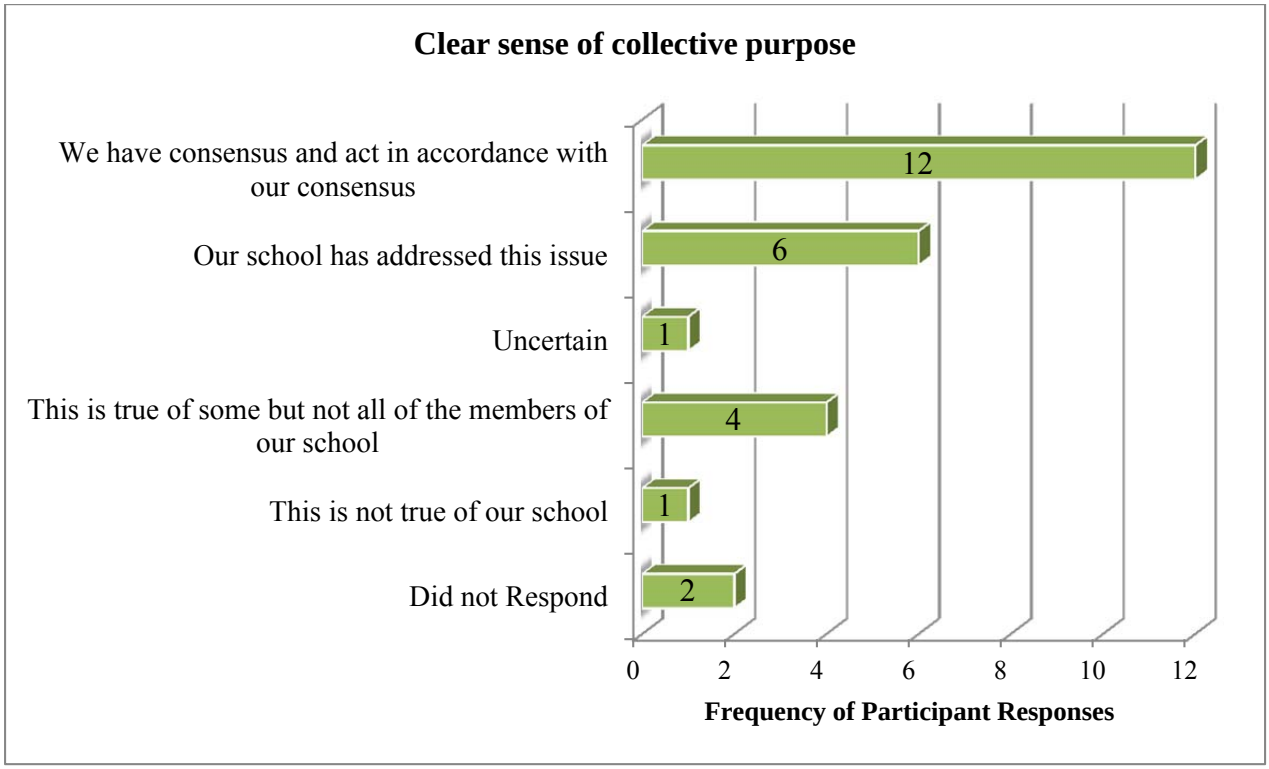
Source: SPSS (2013)

From these results, the overall differences between elementary and secondary principals are minimal. Their perceptions of PLCs are not significantly influenced by the grade levels in their buildings.

Research question one: to what extent are the foundational principles of PLCs established throughout the district? The PLC foundational principle of creating a PLC culture focused on a shared purpose and collaboration is one indicator of the extent of the establishment of foundational principles. There were 26 administrators who began the survey. A total of 24 administrators responded to question four: At my school we have a clear sense of our collective purpose. From the administrators' responses (Figure 11), 46.2% of administrators responding to question four indicated their school community had consensus and acted according to their consensus. Another 23.1% held that their school had addressed this issue. However, it is important to note that 15.4% of administrators noted that this was true of some of the members of their school but not all members. One administrator (3.8%) was "Uncertain" and one administrator (3.8%) noted this was not true of his/her school.

Figure 11

Administrator Survey Question 4

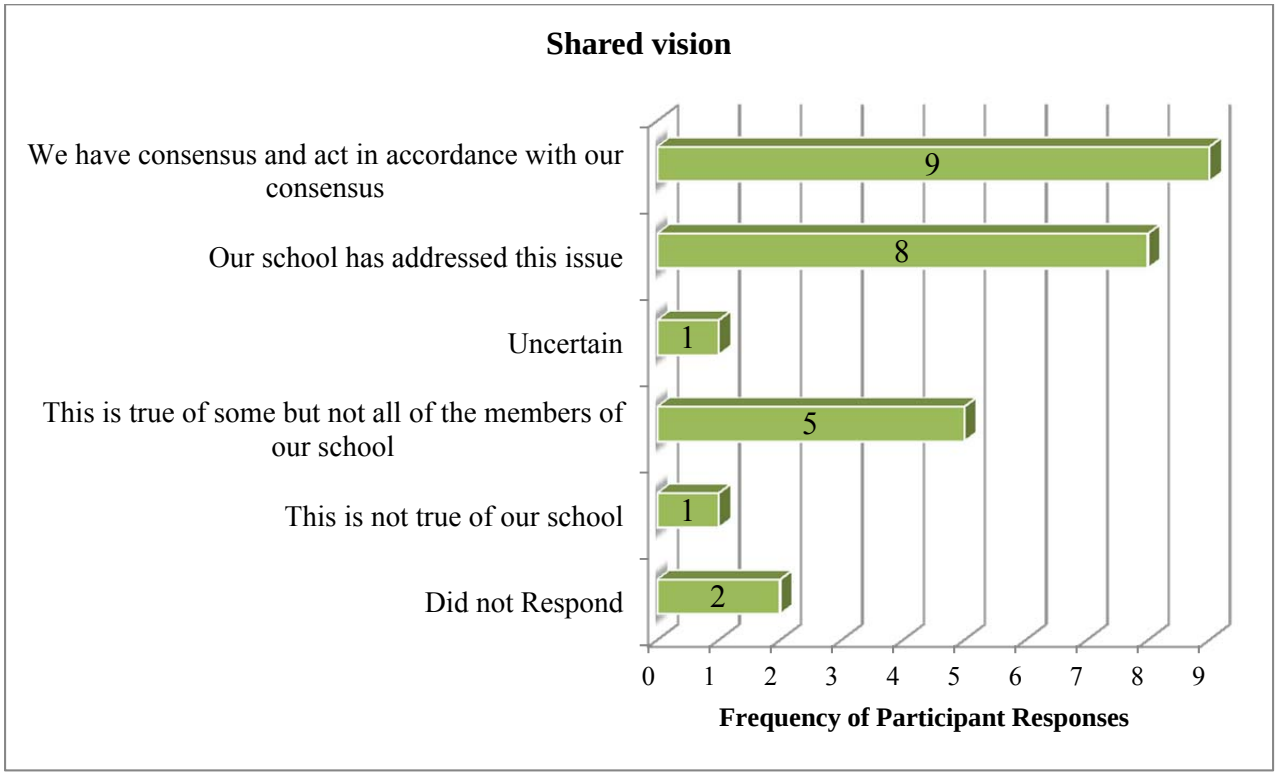


Source: SPSS (2013)

Another PLC principle indicating whether or not PLCs are beginning to be implemented throughout the district is question six which asked administrators to rank the level their school community has a shared vision (Figure 12). Of the 24 administrators responding to this question, 34.6% indicated their school has consensus and acts according to their consensus. Another 30.8% of administrators noted their school had addressed this issue. However, 19.2% held this was true of some but not all members of their school community. Only 3.8% of administrators indicated this was not true of his/her school and 3.8% were "Uncertain."

Figure 12

Administrator Survey Question 6



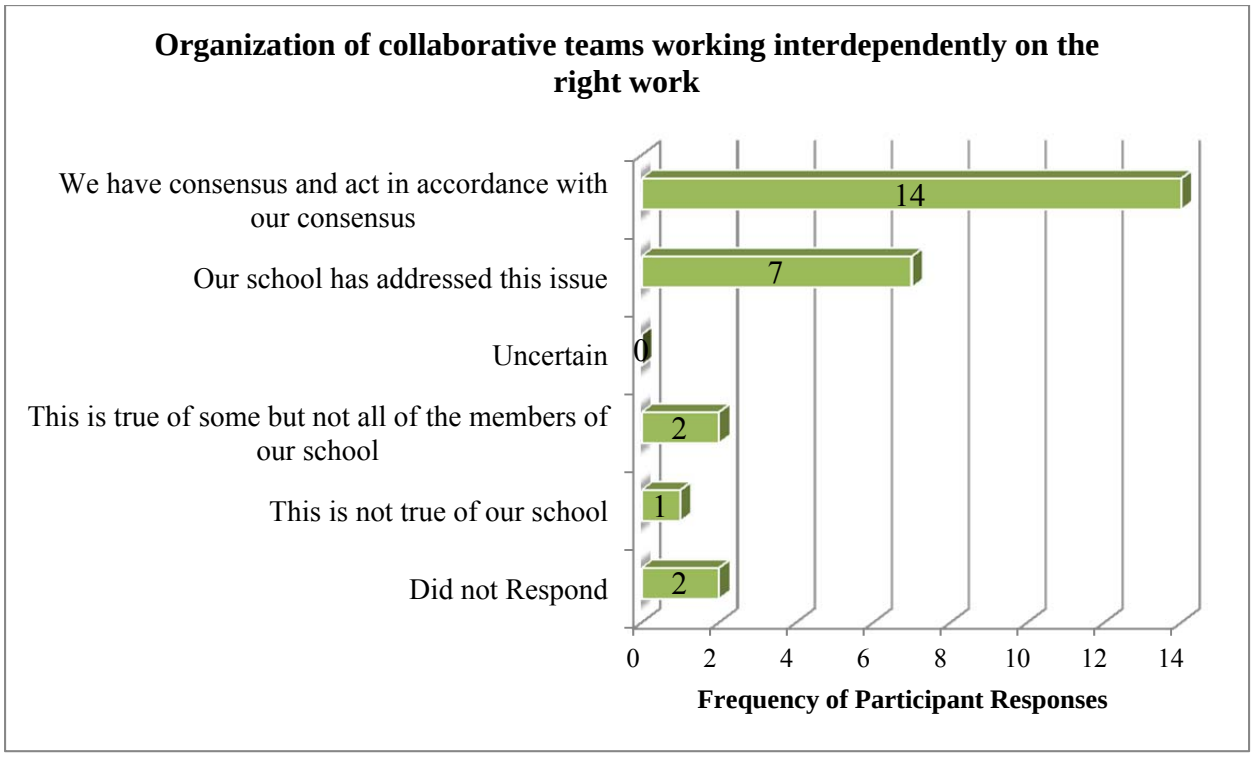
Source: SPSS (2013)

Survey question 13 is another indicator of PLC practices at the school level. Of the 24 administrators responding to this survey question, the percentage who indicated their teachers were organized into collaborative teams (not merely groups) working interdependently on the

right work was 53.8%. Another 26.9% responded that they had addressed this issue (Figure 13). Only 7.7% (two administrators) noted this was true of some but not all of the members of their school and one administrator indicated that this was not true of his/her school. No administrator indicated they were "Uncertain" as to whether or not this PLC practice was evident in their school.

Figure 13

Administrator Survey Question 13



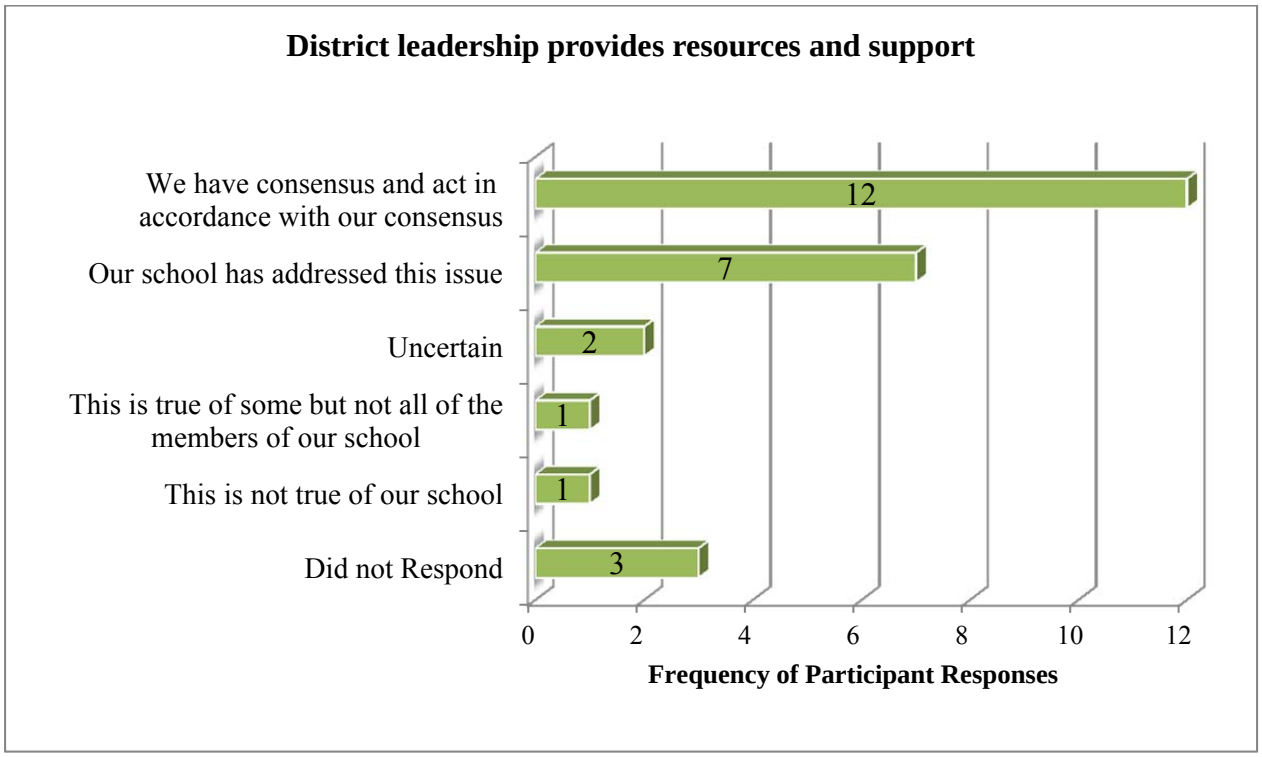
Source: SPSS (2013)

Another indication of the extent that PLC foundational principles are being implemented throughout the district is question 23 of the administrator survey. This question asked administrators to rate how well district leadership provides resources and support to help them succeed at what they are being asked to do (Figure 14). Of the 23 administrators who responded to this question, 46.2% noted that as a district there is consensus and the district acts accordingly

while another 26.9% indicated the district had addressed this issue. Although this seems to demonstrate a belief by administrators that the district is willing to support the schools in their cultural shift towards a PLC model, 3.8% held this was not true of the district; 3.8% indicated this was true of some of the members of the district; 7.7% were uncertain.

Figure 14

Administrator Survey Question 23



Source: SPSS (2013)

Reviewing the frequency table, 11.5% chose not to answer this particular question (Table 10). This could be due to participants who chose not to complete the survey or it could be due to participants who may have had concerns about answering this question. Even though the district had begun to provide intense PLC training from Solution Tree Press before the survey was administered, a total 15.3% of participants were uncertain, held this was true of some but not all of the district directors, or noted it was not a true statement.

Table 10

Administrator Survey Question 23 Statistical Breakdown

Category	Frequency	Percentage
This is not true of our district	1	3.8
This is true of some but not all of the members of our district	1	3.8
Uncertain	2	7.7
Our district has addressed this issue	7	26.9
As a district, we have consensus and act in accordance with our consensus	12	46.2
Participants who did not respond	3	11.5
Total	**26**	**100.0**

Source: SPSS (2013)

Research question two: what differences between elementary and secondary schools exist in the implementation of PLCs? The overall results from the administrator survey yielded minimal differences between the elementary and secondary administrators. However, the data generated from questions 14 and 25 was significantly different between the elementary and secondary administrators. In addition, the practical significance as indicated by the Cohen's *d* effect size was "medium" (Table 11).

Table 11

Administrator Survey Question with Results that are Significantly Different

Survey Number	Question	Mann-Whitney U	p score $p < 0.05$	Cohen's *d*
14	At my school teachers use results from assessments to inform and improve professional practice	21.5	0.009	0.53
25	District leadership have developed the capacity of school personnel to function as a PLC	27.5	0.04	0.43

Source: SPSS (2013)

From these results, it appears there is a disparity between what elementary and secondary administrators' perceptions of PLC practices are regarding the use of assessments to improve practice. There is also a disparity between administrators' perceptions of the district leadership efforts to develop the capacity of school personnel to function as a PLC.

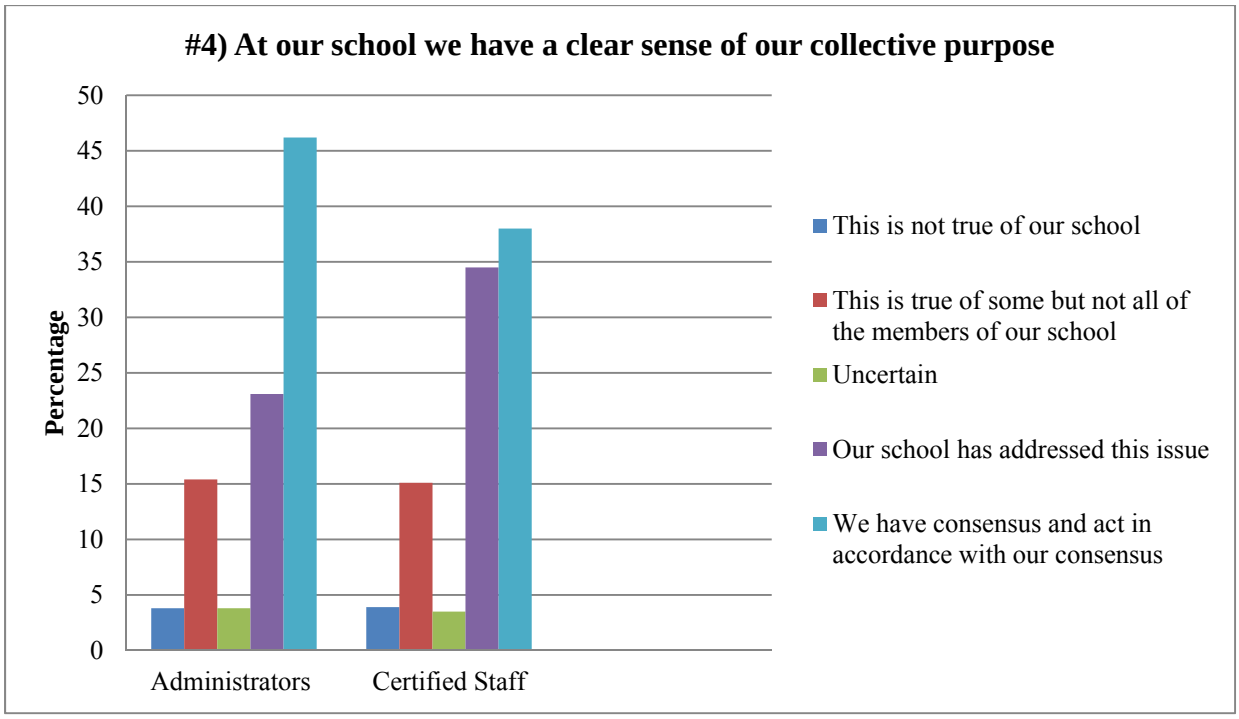
Research question three: what differences in teacher and principal perceptions exist regarding the implementation of a PLC in a building? In order to determine possible differences between teacher and principal perceptions regarding the implementation of PLCs, data from the survey was disaggregated using a frequency comparison. Comparing the administrators' responses from questions 4, 20, 13, and 14 on the Administrators' Survey with similar questions from the Certified Staff Survey (4, 8, 25, and 38 respectively), demonstrates differences which need to be addressed. The frequency comparison is reported as a percentage of participants' responses to the Likert scale survey.

The first comparison between the administrators' and certified staff perception of implementing PLCs at the building level is evident in question four. This question asked participants to rank the level in which their school had a clear sense of collective purpose (Figure 15). The percentage of administrators indicating their school community has consensus and act in accordance with their consensus was 46.2% while the certified staff who agreed with this

perception was 38%. The percentage of administrators noting their school community had addressed this issue was 23.1% while certified staff agreeing with this perception was 34.5%. Little to no difference was found in the perception of both administrators (15.4%) and certified staff (15.1%) who held this is true of some of the members of their school but not all the members.

Figure 15

Comparison of Having a Clear Sense of Collective Purpose



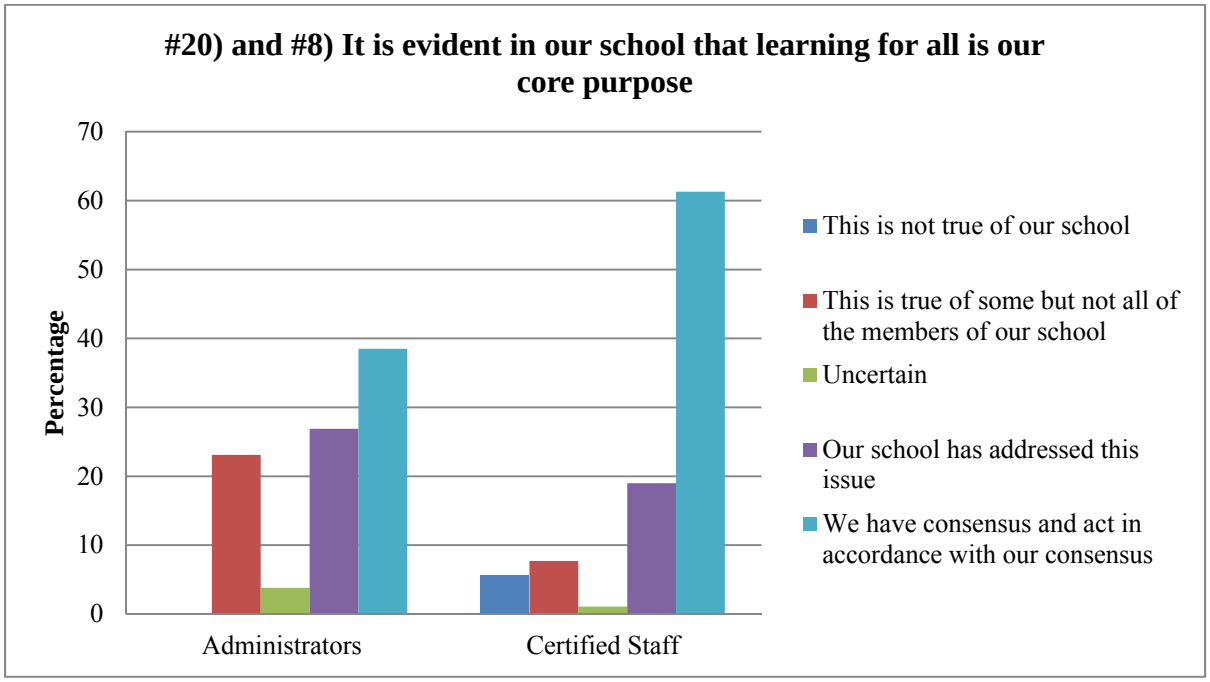
Source: SPSS (2013)

The second comparison between the administrators' perceptions and certified staff perceptions of implementing PLCs at the building level is evident in question twenty from the Administrators Survey and question eight from the Certified Staff Survey. These questions asked participants to rank the level in which it was evident in their school that learning for all was their core purpose (Figure 16). The percentage of administrators indicating their school community had consensus and acted accordingly with their consensus was 38.5%. Comparing this with the

61.3% of certified staff who held their school community had consensus and acted accordingly demonstrates a disconnect between administrators and certified staff. The percentage of administrators who noted this PLC practice had at least been addressed was 26.9% while only 19% of certified staff agreed with this statement. Interestingly, 23% of administrators responded "that learning for all is our core purpose" is true of some members of their school community whereas only 7.7% of certified staff held this as the case in their schools.

Figure 16

Comparison of Learning for All is Our Core Purpose



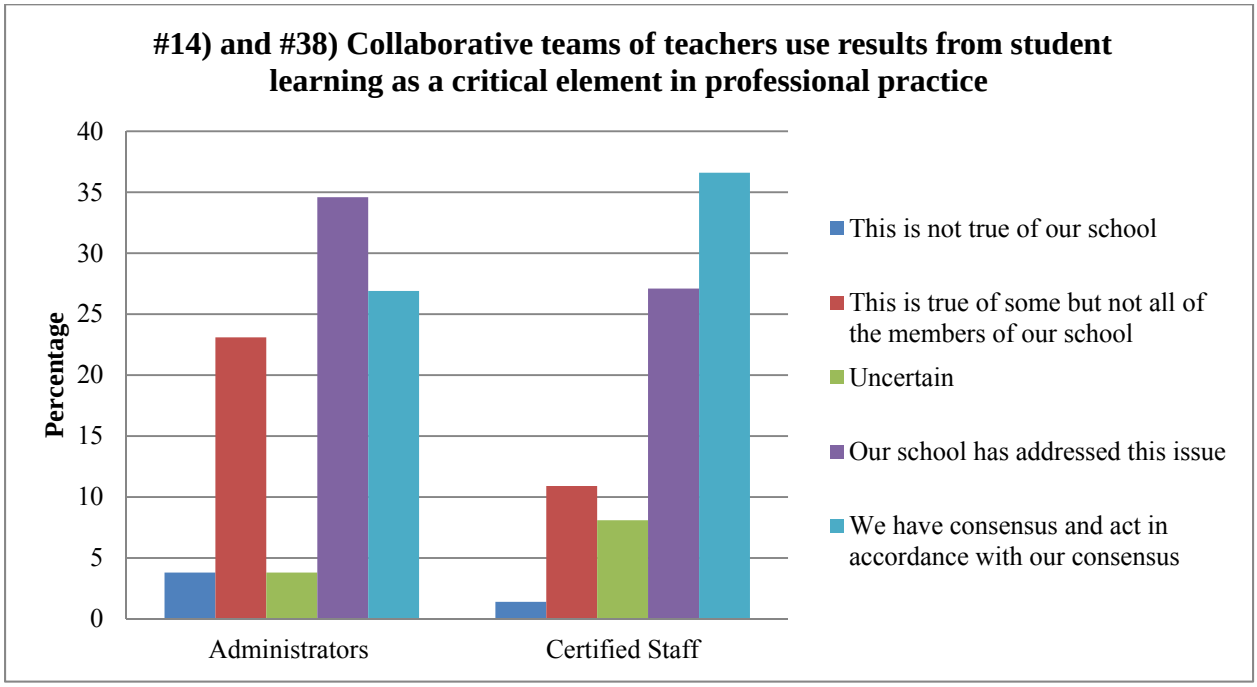
Source: SPSS (2013)

Another comparison between the administrators' and certified staff perception of implementing PLCs at the building level is evident in question fourteen from the Administrators Survey and question thirty-eight from the Certified Staff Survey. These questions asked participants to rank the level in which collaborative teams of teachers use student assessment results as a critical element in their professional practice (Figure 17). The percentage of

administrators indicating their school communities had consensus in this area and acted accordingly was only 26.9% whereas 36.6% of certified staff agreed with this ranking. The percentage of administrators noting this is an area their school has addressed was almost eight percentage points higher: 34.6% of administrators compared to 27.1% of certified staff. In addition, the percentage of administrators (23.1%) who indicated this PLC practice was true of some but not all the members of the school was almost 13 percentage points higher than that of the certified staff members (10.9%).

Figure 17

Comparison of Using Student Results to Guide Professional Practice



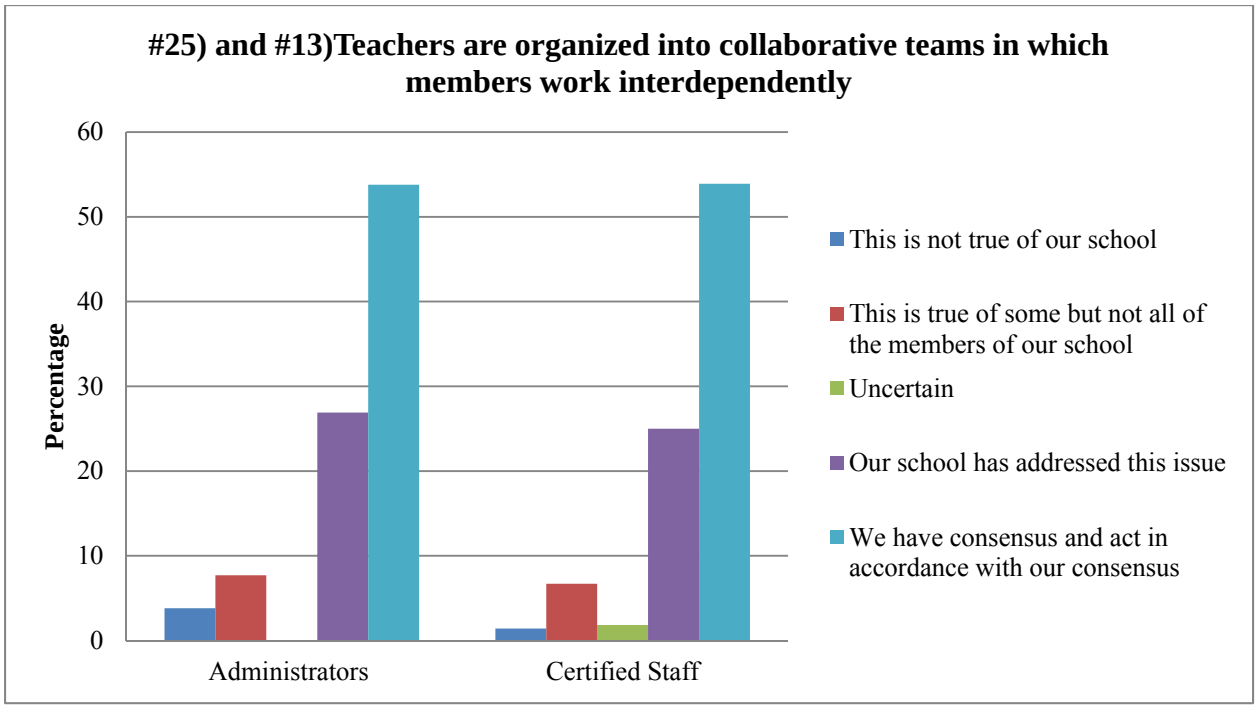
Source: SPSS (2013)

One PLC practice appears to reflect consensus between the beliefs of administrators and certified staff in respect to collaborative teams. In determining this consensus, results from question thirteen from the Administrators' Survey were compared with question twenty-five from the Certified Staff Survey (Figure 18). Administrators and certified staff were asked to rank

their perceptions regarding the organization of teachers into collaborative teams in which the members of those teams work interdependently. The percentage of administrators responding that their schools had consensus and acted accordingly was 53.8%. The percentage of certified staff agreeing with this level of implementation was 53.9%. The percentage of administrators and certified staff who indicated their school had addressed this issue was 26.9% and 25% respectively. The percentage of administrators who stated this level of collaboration was true of some of the members of their school was 7.7%. Certified staff who noted this level of collaboration was true of some of the members of their school was within one percentage point at 6.7%. Members of the school community who indicated this was not true of their school were less than 4% of total participants.

Figure 18

Comparison of Collaborative Teams Working Interdependently



Source: SPSS (2013)

Even though there are gaps in PLC practices between administrators and certified staff, there is also indication of agreement. This is the case in regards to the PLC practice of organizing teachers into collaborative teams in order to work interdependently. At the time of the survey, administrators, along with their leadership teams, had attended four days of PLC training hosted by Solution Tree. At the conclusion of the training, the individual school leadership teams were charged with the task to build collaborative teacher teams based on content area, grade level, or school improvement focus.

Qualitative findings. In addition to the Likert scale survey, participants were asked to respond to two open-ended questions regarding their perceptions of PLCs. These questions were used to solicit more personal responses in regards to the implementation of PLCs at the school level. From these questions, several themes emerged.

Qualitative results from the certified staff survey. The two open-ended questions for certified staff members were: (1) It is very important to the PLC process for teachers to collaborate about student achievement. Why do you think this is so important? (2) What recommendations would you give to those individuals just getting started in the process of transforming their schools into Professional Learning Communities? Themes were identified based on participants' responses. Several comments addressed two or more themes. For instance one participant's response could be divided into two different themes: "We are a team and we are all working together to help each individual student on our grade level achieve his/her highest potential." The themes identified from this comment were: 1) team synergy and 2) student achievement. Although two themes were identifiable, this response was only counted as team synergy because it was initially referenced and the primary theme of the comment. In addition, in order to avoid diluting the actual amount of participant responses and overstating the

frequency, multi-themed responses were only counted once based on the initial or primary theme.

The number of participants responding to the certified staff qualitative question one totaled 195. The nature of the first qualitative question was inherently leading. The question began with the statement, "It is very important to the PLC process for teachers to collaborate about student achievement." This statement was meant to clarify and direct the participants to focus on PLCs; however, it may have inadvertently biased the response of the participants. Even though it appears the wording of the certified staff qualitative question one could have biased participants' responses, the variety of themes identified (Table 12, Figure 19) and the participants' written comments are evidence that themes and responses were generated from participants' perspective and experience. For instance, the most prominent theme was in regards to student achievement. One participant stated:

> The purpose of a PLC is to help students achieve to their highest potential. If I am not talking about how students are doing, I am not making the best use of my time. Also, it's important to remember that I will ALWAYS be learning new things as a teacher. I don't have the perfect answers about what to do for each child, and the PLC group helps me solve issues I haven't been able to fix.

The second most referenced theme was collaboration. One participant wrote, "Collaboration creates synergy in the teaching profession and allows educators to achieve more together than they could accomplish individually." Another participant felt that "[s]tudents are entitled [to] learn in the best atmosphere possible. If teachers are teaming they are sharing ideas and goals that work in their own classroom and students benefit." The third most frequent response was in regards to professional growth and support. A participant summarized this by stating:

It has always worked best to brainstorm strategies and what works or doesn't work with others as different people come with a vast amount of different knowledge, background and insight. Another view on a student can be very helpful to the student and teacher. Two or more brains is always better than one. We often get stuck in our own thinking.

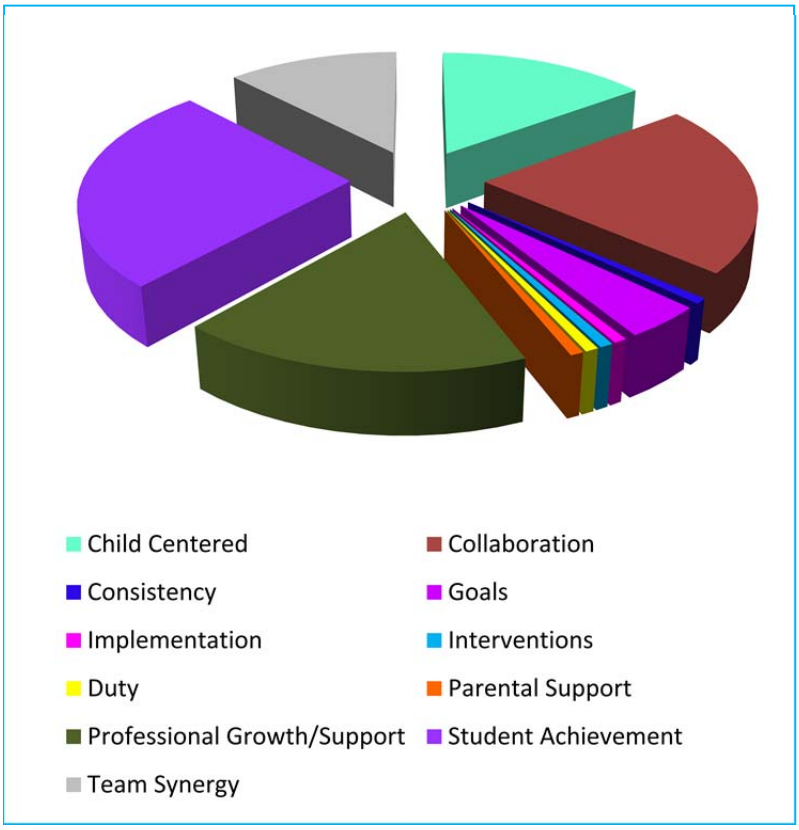
Other themes that emerged from the certified staff qualitative question one were: child centered, consistency, goals, implementation (of PLCs), interventions, duty, parental support, and team synergy.

Table 12 and Figure 19

Certified Staff Qualitative Question 1 Themes and Frequency Table

Theme	Frequency
Child Centered	22
Collaboration	32
Consistency	1
Goals	6
Implementation	1
Interventions	1
Duty	1
Parental Support	1
Professional Growth/Support	26
Student Achievement	39
Team Synergy	18

Source: SPSS (2013)



The number of participants responding to the certified staff qualitative question two was 133. Question two asked participants: What recommendations would you give to those individuals just getting started in the process of transforming their schools into Professional

Learning Communities? In reviewing the responses to this question, eleven identifiable themes emerged (Table 13, Figure 20). The most frequent response was to focus on the process. One participant responded, “It takes time to transition. Don't expect it to happen overnight.” Another participant wrote,

> Don't pick and choose. The philosophy and research behind this indicate the process of altering culture rather than procedure must be done as a totality. I would also say that this must be something that happens from the ‘top down.’ The district office is the beginning of establishing this culture and the goals that guide it. Although the beginning of that process is necessarily ‘loose’ it is the needed beginning before it can begin to move from there into the individual schools, classrooms, and individuals (including parents and community). Finally, keep going. The change will not happen immediately nor unilaterally. Patience AND persistence will be crucial to success.

The second most common theme in regards to the certified staff qualitative question two was in regards to building a PLC foundation. One participant summed this theme up by stating, “Take it one step at a time insuring that you have a good foundation. Moving [too] fast will ruin the whole thing[;] this is a life long process enjoy the journey.” The third most frequent response was in regards to teamwork. One participant summed this up well by writing,

> I work with a Fantastic group of people who do an amazing job in this area but if I were going to pass advice along to another school about what works well here and I feel is essential to a PLC I would say: remember that you're part of a team and the best way to help you[r] team is to encourage, support, and uplift one another because none of us could do it alone and we all have strengths to add. Also remember that sometimes others have a different way of doing things that we ourselves do, not wrong, just different. Be accepting and helpful not critical and negative.

Other themes identified from the certified staff qualitative question two were: action, change, communication, perseverance, shared leadership, student focused, time, and trust.

Table 13 and Figure 20

Certified Staff Qualitative Question 2 Themes and Frequency Table

Themes	Frequency
Action	6
Change	6
Communication	6
Foundation	31
Perseverance	8
Process	33
Shared Leadership	1
Student Focused	1
Team Work	24
Time	12
Trust	3

Source: SPSS (2013)

Qualitative results from the administrator survey. The two open-ended questions for administrators were: (1) What recommendations would you give to school leaders who are just getting started in the process of transforming their schools into Professional Learning Communities? (2) What are some of the things that need to be addressed at the district level in order to support individual schools in becoming Professional Learning Communities? These open-ended questions were specific to the administrators' perspective of establishing a PLC.

Themes were identified based on participants' responses. If two or more themes were identifiable, responses were only counted once based on the predominant theme of the statement. The number of participants responding to the administrator qualitative question one totaled 12

(Table 14, Figure 21). The purpose of the question was to elicit responses from administrators to determine what they felt was necessary to build a solid PLC foundation; a foundation which is key to sustainable PLC practices (DuFour et al., 2010; Lambert, 1998).

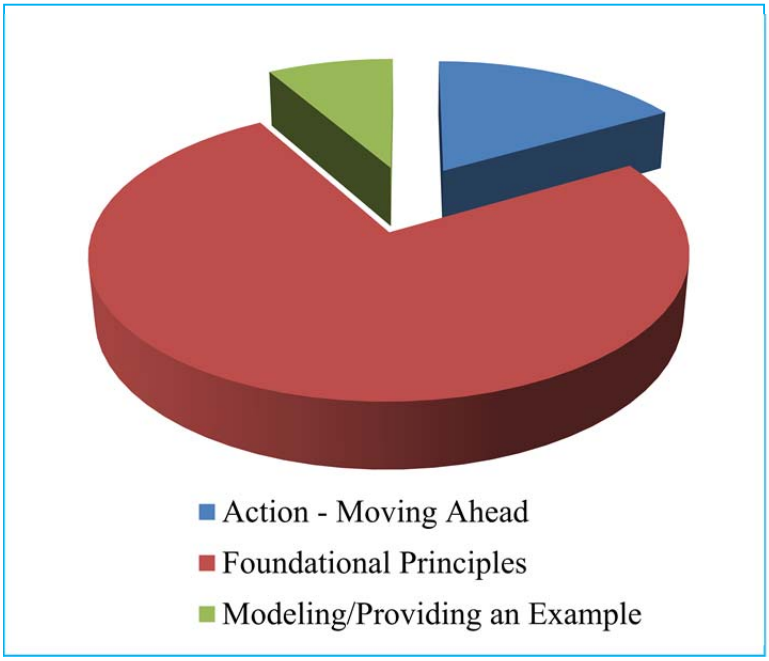
Of the twelve administrators responding, nine believed that creating a foundation was a priority. Several commented that change is difficult when creating a new school culture. For instance, one participant said, "Do not copy or take short cuts. Take the time to allow development and sustainability." Another individual felt it was important to "[d]evelop a mission, vision, and clear short term goals to work toward. This will assist the PLC in generating momentum to continue growing and improving." Two participants believed that developing a PLC culture was dependent upon taking action: "Start the work, do not just talk about it." In addition, one administrator felt in order to establish a solid PLC foundation the school community needed to: 1) "create and communicate: mission, vision, values and goals;" 2) "create a weekly agenda;" and 3) "provided in-service in areas that will help improve instruction."

Table 14 and Figure 21

Administrator Qualitative Question 1 Themes and Frequency

Themes:	Frequency
Action - Moving Ahead	**2**
Foundational Principles	**9**
Modeling/Providing an Example	**1**

Source: SPSS (2013)



The number of participants responding to the administrator qualitative question two was nine. This question asked participants: What are some of the things that need to be addressed at the district level in order to support individual schools in becoming Professional Learning Communities? In reviewing the responses to this question, five identifiable themes emerged (Table 15, Figure 22). The most frequent response was to focus on expectations. One participant felt that the district "…expectations of the early release collaboration time need to be defined and [consistent] at each school." While another administrator believed that the district level administrators needed to "[monitor] what is asked of the administration in the buildings."

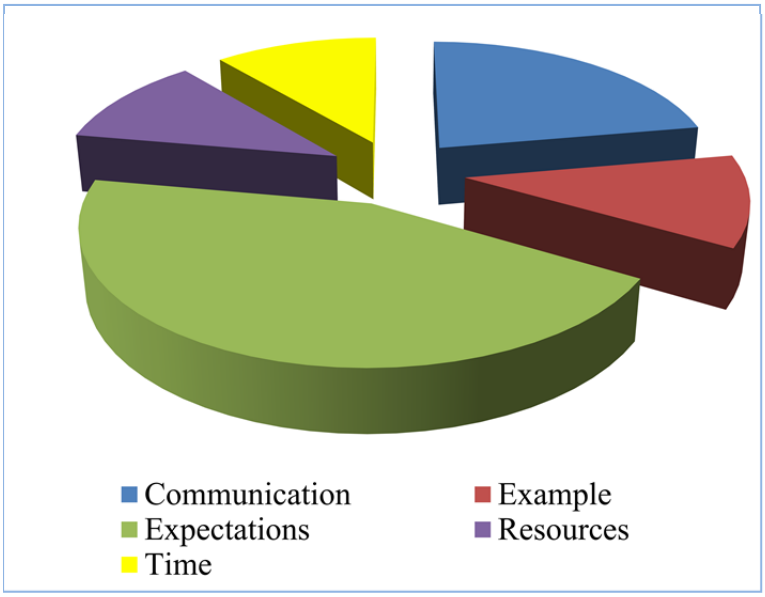
The second most identified theme was communication. One participant expressed a desire for an opportunity to discuss and talk about the challenges of an implementation dip by stating: "I think principals need time to discuss progress, pitfalls, etc. each is facing in an environment that is open and supportive." Another participant simply stated: "Continual communication."

Table 15 and Figure 22

Administrator Qualitative Question 2 Themes and Frequency

Themes	Frequency
Communication	2
Example	1
Expectations	4
Resources	1
Time	1

Source: SPSS (2013)



Although the certified staff and the administrator qualitative questions are expressed differently, both sets of questions elicited similar responses concerning the establishment of PLCs. Certified staff identified student achievement, collaboration, processes, and foundation as focus areas in order to establish a PLC culture in their school. Administrators felt strongly about establishing a PLC foundation, setting expectations, encouraging open communication, and taking action to insure implementation of PLC practices are established throughout the school and throughout the district. All of these practices are dependent on one another in order to create a sustainable PLC culture responsive to student achievement (DuFour et al., 2010).

Follow-Up Survey

In an effort to validate the research findings, a follow-up survey was sent to certified staff and administrators. The follow-up survey questions were some of the exact questions (Appendix K and Appendix N) posed in the original survey administered in October. The follow-up survey only included those questions which were initially identified as aligning to the district's goals. The survey was distributed after certified staff had participated in 12 early release PLC collaboration days. School leadership teams had also participated in seven days of intensive PLC professional development at the close of the survey.

The number of district employees receiving an invitation to complete the PLC survey totaled 541 individuals. This breaks down to the 515 certified staff invited to participate in the Certified Staff PLC Survey and the 26 administrators invited to participate in the Administrators' PLC Survey. The superintendent, deputy superintendent, and district directors were not invited to participate in this survey due to the nature of the questions posed about district level support. The survey was sent to participants' district email addresses using Qualtrics Survey Software. The survey window was open from January 28, 2013 to February 8, 2013. At the close of the survey,

a total of 130 certified staff members and 11 administrators (Table 16) had completed the respective surveys.

Table 16

Percentage of Participants Completing Follow-up Survey

Participants	Total invited to Participate	Total completing Survey	%
Certified Staff	515	130	25.0%
Administrators	26	11	42.3%
Total Participants	541	141	26.1%

It is important to note the number of individuals who voluntarily participated in the follow-up survey was considerably less than the initial survey. Total participation in the initial survey was 56.6% (Table 3) which is a 30% difference from those who participated in the follow-up survey. Results of the comparison between elementary and secondary certified staff can be found in Appendix P. Follow-up survey results are listed in the same format as the initial survey (Appendix L) for ease of comparison.

Certified staff comparison. Initially eight questions on the Certified Staff Survey (Table 17) generated significant differences (where $p < 0.05$) between the elementary and secondary certified staff members. The questions dealt primarily with PLC foundational principles and practices.

Table 17

Certified Staff Survey Questions Initially Yielding Significant Differences

#4	At our school we have a clear sense of our collective purpose
#6	At our school we have a shared vision
#8	It is evident in our school that learning for all is our core purpose
#18	We work with colleagues to build shared knowledge regarding trends in student achievement
#22	We monitor the learning of each student's attainment of all essential outcomes on a timely basis through a series of frequent, team-developed common formative assessments that are aligned with high-stakes assessments students are required to take
#38	Collaborative teams of teachers regard ongoing analysis of evidence of student learning a critical element in the teaching and learning process
#40	Teachers use evidence of student learning to respond to students who are experiencing difficulty
#41	Teachers use evidence of student learning to enrich and extend the learning of students who are proficient

When comparing the initial results (Table 18) with the follow-up survey results, seven of the eight questions had changes in the level of statistical significance. The results of five of the questions continued to yield significant differences where $p < 0.05$. For instance, the values for questions four and six continued to be significantly different. Questions four and six were in regards to PLC foundational principles of vision and purpose. The results of questions 38, 40, and 41 also showed a slight change in the level of significant difference. These questions all relate to using student learning to guide instruction. When determining practical significance (Cohen's *d*), all eight questions continued to yield a "small" effect on the independent variable.

Table 18

Comparison of Certified Staff Initial Questions and Follow-up Survey Results

Survey Number	Initial Mann-Whitney U	Follow-Up Mann-Whitney U	Initial p Score (p<0.05)	Follow-Up p Score (p <0.05)	Initial Cohen's d	Follow-Up Cohen's *d*
4	6298.5	1464.0	0.000	0.025	0.28	0.20
6	6086.5	1438.0	0.000	0.017	0.29	0.22
8	6260.5	1681.5	0.000	0.205	0.30	0.11
18	5949.5	1534.5	0.000	0.051	0.23	0.17
22	6320.0	1567.5	0.007	0.073	0.17	0.16
38	5337.0	1153.0	0.000	0.002	0.23	0.29
40	5320.5	1205.5	0.000	0.015	0.24	0.29
41	4862.5	1033.0	0.000	0.000	0.28	0.35

Source: SPSS (2013)

When calculating the follow-up Mann-Whitney U scores, questions 28, 31, and 37, which had not been noted as significantly different in the results of the first survey, were now identified as such (Table 19). These questions all relate to working together in collaborative groups by setting goals, identifying commitments, and monitoring expectations.

Table 19

Follow-Up Certified Staff Questions Yielding Significant Differences

#28	Structures have been put into place to ensure we are clear on the critical questions that should drive our collaboration
#31	We have identified and honor the commitments we have made to the members of our collaborative teams [by] identify[ing] collective commitments or norms in order to clarify our expectations of how our team will operate
#37	The members of each of our collaborative teams identify a process for monitoring progress toward the goal

The changes in significant difference in questions 28, 31, and 37 are noted in Table 20. Even though there was only a 25% participation rate for the follow-up survey, the results have merit. When determining Cohen's *d*, all three questions yield a "small" effect on the independent variable.

Table 20

Follow-Up Mann Whitney-U Results Questions 28, 31, and 37

Original Survey Number	Mann-Whitney U	Follow-Up Mann-Whitney U	p Score (p <0.05)	Follow-Up p Score (p < 0.05)	Cohen's *d*	Follow-Up Cohen's D
28	7419.5	1393.0	0.440	0.007		0.24
31	6433.5	1307.5	0.112	0.020		0.21
37	6323.0	1256.0	0.118	0.008		0.25

Source: SPSS (2013)

Administrator comparison. The questions used for the follow-up Administrator Survey were the questions found in Appendix N. After conducting a Mann-Whitney U test, the results did not yield any significant differences between the elementary and secondary administrators. Nevertheless, the overall results from the administrators' follow-up survey were compared with the initial results (Appendix P). In the initial Administrators' Survey, the results from questions 14 and 25 were statistically significant. Data generated from the follow-up Administrators' Survey for questions 14 and 25 (Table 21) changed dramatically from the original results. The results from the follow-up survey indicated elementary and secondary principals no longer ranked these PLC functions as statistically significant (Table 22).

Table 21

Administrator Survey Questions Yielding Significant Differences

#14	At my school, teachers use results from assessments to inform and improve professional practice
#25	District leadership have developed the capacity of school personnel to function as a PLC

Table 22

Follow-Up Comparison with Initial Administrator Questions

Survey Number	Initial Mann-Whitney U	Follow-Up Mann-Whitney U	Initial p Score (p<0.05)	Follow-Up p Score (p <0.05)	Initial Cohen's d	Follow-Up Cohen's *d*
14	21.5	8.5	0.009	0.730	0.53	0.13
25	27.5	7.5	0.04	0.555	0.43	0.24

Source: SPSS (2013)

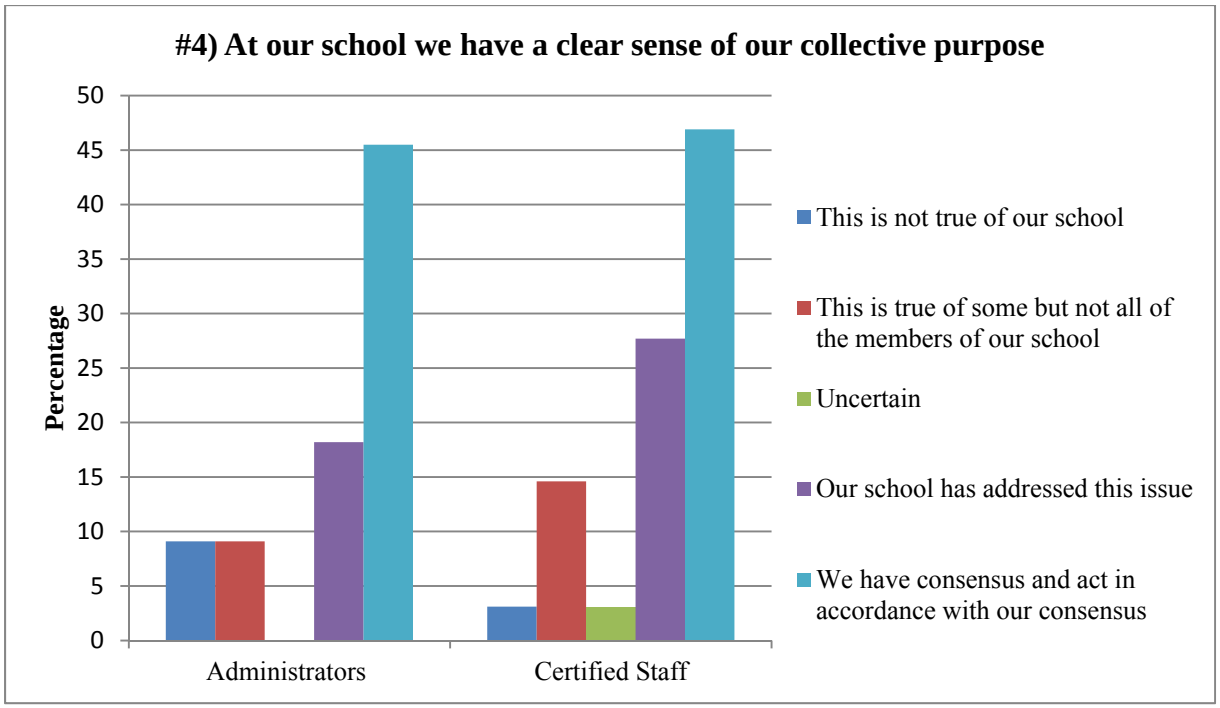
Certified staff and administrator comparison. In order to best answer research question three regarding the differences in teacher and principal perception of implementing PLCs in their schools, results were displayed using a frequency comparison. Questions 4, 20, 13, and 14 on the Administrators Survey were compared to similar questions on the Certified Staff Survey (4, 8, 25, and 38 respectively). The frequency comparison was reported as a percentage of participants' responses to the Likert scale survey. Using follow-up Administrators' Survey questions 4, 20, 13, and 14, and follow-up Certified Staff Survey questions 4, 8, 25, and 38, a frequency comparison was again generated using percentage of participants' responses.

The first comparison between the follow-up administrators' and certified staff perception of implementing PLCs at the building level is evident in question four. This question asked participants to rank the level in which their school had a clear sense of collective purpose (Figure 23). The percentage of administrators noting their school community has consensus and act in

accordance with their consensus was 45.5% while the certified staff who agreed with this perception was 46.9%. The percentage of administrators indicating their school community had addressed this issue was 18.2% while certified staff agreeing with this perception was 27.7%. The results of the follow-up frequency comparison are statistically different from the results of the initial survey (Figure 15).

Figure 23

Follow-Up Comparison of Having a Clear Sense of Collective Purpose



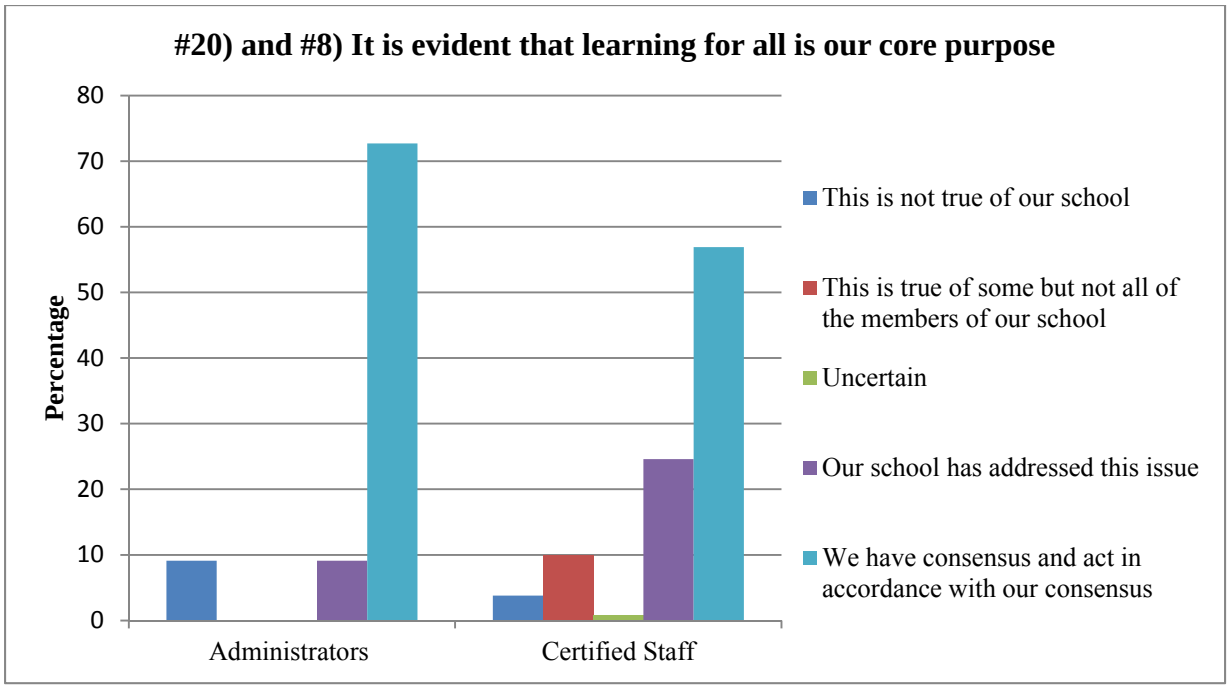
Source: SPSS (2013)

The second comparison between the administrators' and certified staff perception of implementing PLCs at the building level is evident in question twenty from the follow-up Administrators Survey and eight from the follow-up Certified Staff Survey. These questions asked participants to rank the level in which it was evident in their school that learning for all was their core purpose (Figure 24). The percentage of administrators indicating their school community had consensus and acted according with their consensus was 72.7%. Comparing this

with the 56.9% of certified staff who agreed their school community had consensus and acted accordingly demonstrates a disconnect between administrators and certified staff. No administrator marked that this was true of some but not all the members of their school and no administrator marked "Uncertain." The results of the follow-up frequency comparison are statistically different from the results of the initial survey (Figure 16).

Figure 24

Follow-Up Comparison of Learning for All is Our Core Purpose



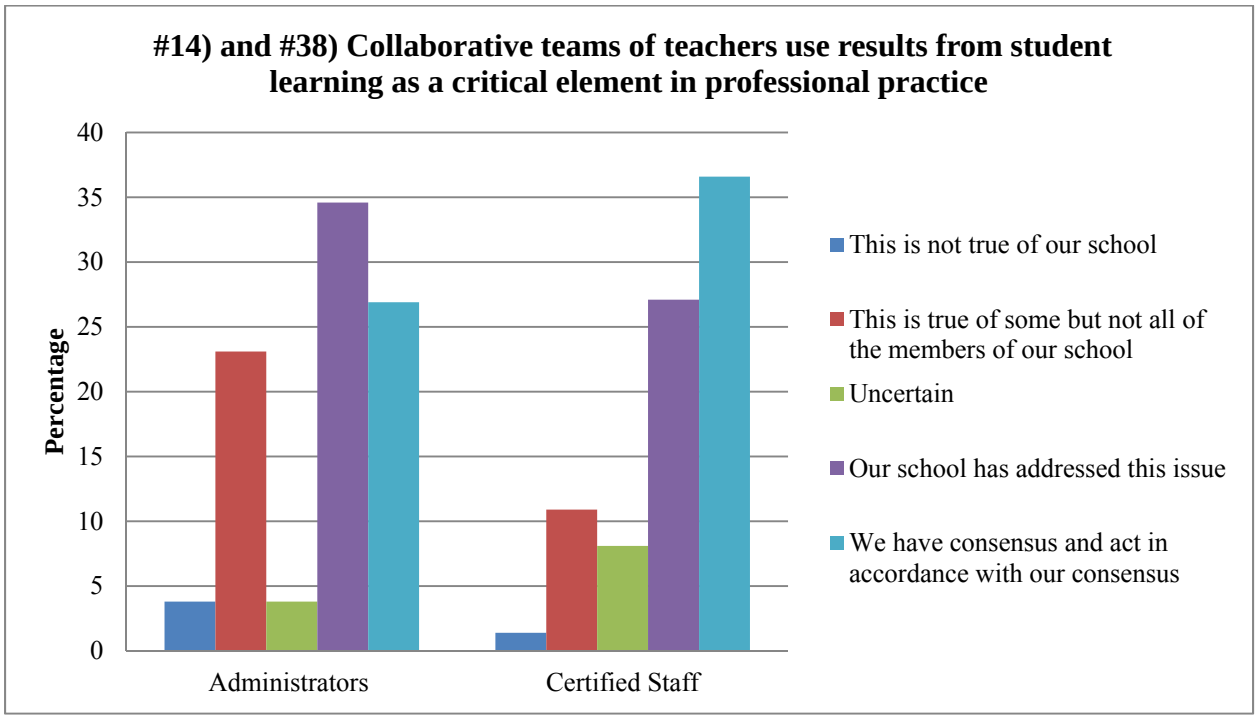
Source: SPSS (2013)

Another comparison between the certified staff and administrators' perception of implementing PLCs at the building level is evident in question fourteen from the follow-up Administrators' Survey and thirty-eight from the follow-up Certified Staff Survey. These questions asked participants to rank the level in which collaborative teams of teachers use student assessment results as a critical element in their professional practice (Figure 25). The percentage of administrators indicating their school communities had consensus in this area and

acted accordingly was 72.7% whereas 59.2% of certified staff agreed with this ranking. No administrator marked that they were "Uncertain" or that this was not true of their school. The results of the follow-up frequency comparison are statistically different from the results of the initial survey (Figure 17).

Figure 25

Follow-Up Comparison of Using Student Results to Guide Professional Practice



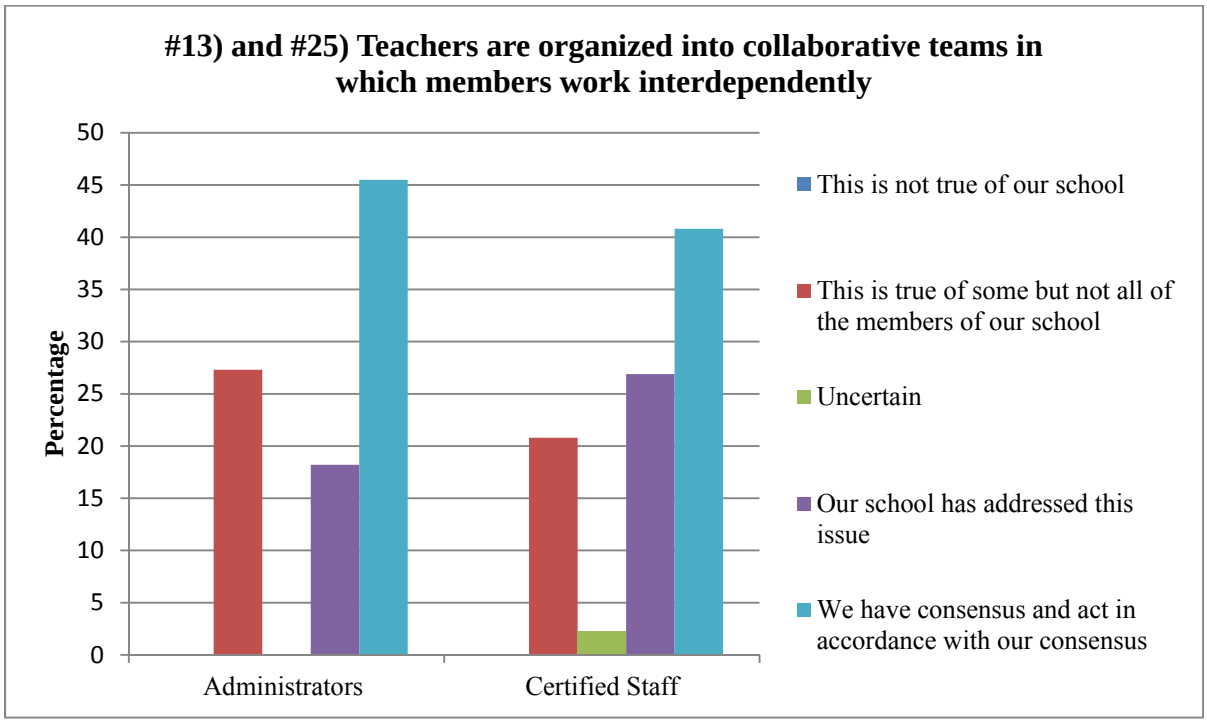
Source: SPSS (2013)

In the initial results (Figure 18) from the October survey, questions 13 and 25 reflected consensus. The results from the follow-up survey also reflect consensus. However, there has been a dramatic shift in the frequency of responses to the Likert scale categories (Figure 26). Administrators and certified staff were asked to rank their perceptions regarding the organization of teachers into collaborative teams in which the members of those teams work interdependently. The percentage of administrators noting their schools had consensus and acted accordingly was 45.5%. The percentage of certified staff agreeing with this level of implementation was 40.8%.

The percentage of administrators and certified staff who indicated their school had addressed this issue was 18.2% and 26.9% respectively. Though there was consensus for the most part, 20.8% of certified staff indicated this was not true of all the members of their school. This is a 14% change from the initial survey results.

Figure 26

Comparison of Collaborative Teams Working Interdependently



Source: SPSS (2013)

The follow-up survey frequency comparisons do indicate gaps between administrators and classified staff still exist. In some instances, the gaps in perceptions are more definite. Even though fewer administrators and classified staff participated in the follow-up surveys, the results provide information to address in furthering the work of PLCs.

Chapter V

Recommendations

Conclusion

Changing the culture of a school is challenging. It takes time and considerable effort on the part of administrators, teachers, patrons, and students. Changing the culture of a district with nearly 11,000 students and over 500 teachers is a daunting task. It involves intensive professional development training for principals and teachers. Current research findings, though limited, indicate cultural change is possible and leading researchers believe that implementing PLC school improvement efforts are not only effective, but sustainable as well (DuFour et al., 2010; Fullan, 2013). This is possible when district leadership plays a pivotal role by insuring that PLC foundational principles have been firmly established at the building level.

If acted upon, district leadership can cultivate an environment balanced between district control and school autonomy. In order to be effective, district leadership needs to state expectations, provide support and directions on ways to create and improve PLCs, and plan for ongoing professional development for building principals. With this level of district commitment in place, district leadership must be willing to hold principals responsible to implement school-based Professional Learning Communities focused on addressing the district nonnegotiable priorities regarding student achievement, results, and instruction (Marzano & Waters, 2009). This is a necessary component considering the important role principals play in effectively instituting PLCs.

As PLCs become an integral part of the school improvement effort, they also become sustainable over time. When these established school level collaborative teams uphold district priorities, student achievement increases (Marzano & Waters, 2009). This happens because teachers receive consistent administrative support and guidance while being empowered to make

decisions pertaining to the areas of student achievement and instruction (DuFour et al., 2010; DuFour & Marzano, 2011; Lezotte, 2012). As PLCs evolve from merely a program of collaboration, they become embedded in the underlying culture of the school. Once this culture of continuous improvement is firmly established, it is plausible that this type of systematic school reform can be sustained even with changes in building level personnel.

Purpose of the Study

Research has demonstrated that PLCs are the framework for establishing a culture focused on student achievement while at the same time empowering educators to collaborate in an attempt to address ongoing challenges (Doolittle et al., 2008; DuFour, 2011; DuFour, DuFour, Eaker, & Karhanek, 2004; Fullan, 2013; Fulton & Britton, 2011; Malone & Smith, 2010; Stonehouse, Vollmer, & Mau, 2013). The purpose of this study was to identify what actions, based on sound research, districts and schools can take to ensure school improvement efforts are implemented. This study examined the efforts of one school district as they trained and guided principals and staff in incorporating PLC foundational practices into school culture.

Potential Significance of the Study

The collective decisions and the direction of a school community could create dramatic change immediately which would impact student achievement and teacher efficacy. Using the PLC framework, children throughout a district would attend schools where educators collaborated with each other while receiving guidance by leaders with vision. Using research-based practice to build leadership capacity, create collaborative teams, and focus on system-wide nonnegotiables creates the cultural expectation of excellence. Should there be a change in personnel, this expectation of excellence would be considered a nonnegotiable for the incoming staff member or administrator. The culture of excellence would envelope new personnel through ongoing professional development both at the school and district level. This study focused on

how a district established foundational PLC practices through building leadership capacity and providing professional development training to school leadership teams in an effort to ensure PLC school improvement efforts were fully implemented.

The Research Questions

Leadership and sustainable PLC practices were the focus of this mixed-methods research study. The aim of the study was to determine what actions district administration needed to take in order to implement PLC foundational principles and practices in each school throughout the district. An additional objective was to determine what actions principals would be required to take in order to implement PLC foundational principles and practices with their staff members. The fundamental questions of this study included: To what extent are the foundational principles of PLCs established throughout the district? What differences between elementary and secondary schools exist in the implementation of PLCs? What differences in teacher and principal perceptions exist regarding the implementation of a PLC in a building?

The sub-questions derived from these questions are:

1. What role does the district play in developing a PLC environment?
2. What is the perception of a PLC among principals?
3. What experience have principals had creating a PLC culture?
4. What PLC principles must be in place in order to effect change?
5. What PLC practices must be in place in order to effect change?
6. How are new administrators and building level personnel oriented to the PLC model?

Data Gathering

Creswell (2008) contends that quantitative research must adhere to the following: (a) research seeks observable, measurable data on variables; (b) data collection involves the study of

a large sample size; (c) data collection involves the gathering and interpretation of numeric data; and (d) data collection uses instruments identified prior to the start of the study.

Information gathered for this research study on PLCs included all four of these methods to varying degrees. Participants were asked to complete a Likert scale survey. Prior to administering the survey, it underwent a Content Validity Index check as well as an internal validity check (Cronbach, 1951; Yudulgul, 2008). Participants completed the survey regarding their perceptions of the PLC process being implemented in their respective schools using Qualtrics Survey software. Over 300 participants (administrators $n \geq 25$; certified staff $n \geq 280$) were included in this study. Data was then analyzed using the Mann-Whitney U and Cohen's *d* (Tanner, 2012). Analysis was conducted using SPSS.

In addition to completing a Likert scale survey, teachers and administrators responded to open-ended questions in an attempt to address the challenges inherent when implementing systemic change (i.e. PLC principles and practices). This qualitative data was disaggregated into themes and triangulated with the quantitative data. Qualitative data was examined for reference to the perceptions and understandings of PLC practices evident in their schools. Qualitative data was compared to the quantitative data to validate the evidence generated from the surveys.

First Steps to Sustainable PLCs

Starting in February of 2012, district administrators began the process of implementing a system-wide change (Fullan, 2013) by introducing Professional Learning Communities to all building level administrators. Principals were asked to participate in a book study using *Learning By Doing: A Handbook for Professional Learning Communities at Work* (DuFour et al., 2010). As faculty members returned for the start of the 2012-2013 school year, principals were asked to form leadership teams from their individual schools. These teams consisted of the principal as well as a minimum of two certified staff members who had the ability to lead and help mobilize

their peers towards becoming a PLC community. These school-based leadership teams, along with the district leadership team (equating to approximately 90 individuals), then participated in the Solution Tree Press Professional Learning Communities at Work Coaching Academy during the 2012-2013 school year. The leadership teams attended seven days of PLC professional development starting in August and completing the training in February (Appendix G). The coaching academy provided direction and guidance to each school's leadership team regarding the implementation of the foundational practices found in PLCs.

These practices include establishing a mission and a vision statement, identifying school values, and setting specific, measurable, attainable, results-based, and timely (SMART) goals. In addition, the district leadership team adopted the four guiding questions posed by Solution Tree Press in order to set district-wide goals, evaluate requests and/or needs of the schools, determine the academic needs of the students, and to guide the district in making plans for the ensuing years to come. These guiding questions are: a) What do we want our students to learn?; b) How will we know when they have learned it?; c) How will we respond when some students don't learn?; and d) How will we respond when students already know it? (Solution Tree, 2011, p. 51).

Mixed-Methods Research Approach

In order to evaluate the implementation of PLCs across the district, a mixed-method triangulation design was chosen to strengthen and offset any weaknesses of using either a quantitative or qualitative approach (Cresswell, 2008). Using a Likert scale survey, elementary and secondary administrators and elementary and secondary certified staff were asked to respond to questions concerning the level to which PLC practices were being implemented in their schools. The purpose for comparing the elementary and secondary was to determine if there were significant differences between these levels in order to determine to what extent the foundational principles of PLCs were established throughout the district and what differences might exist

between elementary and secondary schools regarding the implementation of PLCs. A comparison between the elementary and secondary staff responses was then calculated using the Mann Whitney-U statistical test. In order to gain a more personal insight into the PLC process taking place in the district, participants were also asked two open-ended questions at the conclusion of the survey regarding their perceptions of PLCs. Participants' responses were then sorted for initial coding and then grouped to reflect commonalities.

Both the quantitative and qualitative results were indicative of the district's effort to implement a PLC culture throughout the district. In areas where there were statistical differences between the grade levels, participants also commented to these differences. For instance, certified staff survey question four asked participants to choose the level their school had a "clear sense of [their] collective purpose." This question resulted in a significant difference between the grade levels. Participant responses also spoke to why this might be the case. One participant commented: "New PLC groups should be very clear about their goals and how they will know when they have achieved them." Another individual stated:

> "Give it time! Sometimes I think we try to rush into things so quickly that we don't stop and figure out why we are doing it. As a result, teachers don't buy in to the whole process. If we take our time we are able to understand and put our everything into the process!"

Another example where both quantitative and qualitative data strengthened the findings and offset any weaknesses is found in staff survey question number 18. Participants were asked to indicate what level they felt their school community worked as colleagues to build shared knowledge regarding trends in student achievement. The results of this question were statistically significant and participant comments indicated why there might be a difference. One individual stated: "Some schools have teachers who don't like to share ideas. If you work together you will

be able to have many more ways to teach!!" Another participant commented: "Teachers must first commit to working together to address student needs."

Initial results from the survey indicate that foundational PLC principles and practices are being implemented at both the elementary and secondary levels throughout the district as evident in the research results. Using both quantitative data and qualitative data has been beneficial. Quantitative statistical evidence has identified the areas where additional professional development and training are needed. At the same time, the qualitative evidence has provided guidance on the depth and breadth of this targeted area in need of professional development and training.

Besides comparing elementary and secondary administrators and staff, schools receiving Title 1 assistance were compared with schools who do not receive this additional federal funding. As a point of interest, a lack of significant difference was found between schools receiving Title 1 funding assistance and those schools who do not receive this funding. This lack of significance could be due to the district's ongoing emphasis on curriculum and curriculum alignment at all levels and at all schools. This may be due to participants' belief that all students, no matter their socio-economic status, can benefit from PLC foundational practices. It could also be due to the fact that all schools have student intervention practices whether or not they receive more funding to support those interventions. Nevertheless, since there was a lack of significant difference between schools receiving Title 1 funding; therefore, only comparisons between elementary and secondary certified staff members and administrators were investigated. In addition, a comparison of certified staff and administrator responses to similar questions was reviewed.

Commendations. Professional learning communities are central to sustainable school improvement and enhanced teacher efficacy. With training, organization, and support, teachers

are empowered to seek and then apply solutions to challenges and problems found in their own settings to positively effect student achievement. The research and design of PLCs constantly gives attention to six attributes for this type of organization: (a) shared values, mission, and vision, (b) collective creativity or inquiry, (c) supportive and shared collaborative teams, (d) supportive conditions for action orientation and experimentation, (e) continuous improvement, and (f) results oriented where improvement is assessed on results rather than intentions (Buffum et al., 2009; Doolittle et al., 2008; DuFour & Eaker, 1998; DuFour et al., 2004; Eaker, DuFour, & DuFour, 2002; Fullan, 2008; SEDL, 1997; Sigurðardóttir, 2010).

Collaboration. The PLC foundational practices to create a culture of collaboration and having a unified purpose are essential to creating a sustainable PLC culture. Calculating the frequency of responses derived from the Likert scale, certified staff members appeared to recognize the importance of collaboration. For instance, survey questions 16 (Figure 3), 17 (Figure 4), 18 (Figure 6), and 25 (Figure 5) asked participants to rate the level of collaboration in their school. On all of these questions, 70% or more of the participants indicated collaboration was a current and viable practice. This is an important in light of the fact that it is in direct correlation with the District Improvement Team's goal for every school. However, question 19 (Figure 7) asked participants to rate working with colleagues to build shared knowledge regarding the expectations for the next course or grade level. Only 62.3% of participants responded that this was taking place in their schools. This is an indication that more training and support are needed in this area in order to improve PLC collaboration efforts.

As a point of interest, administrator survey question 13 (Figure 13) asked administrators to indicate whether their teachers were organized into collaborative teams (not merely groups) working interdependently on the right work. From those responding, 80.7% held that teachers were organized into collaborative teams. It is important to note that the first session of the

Solution Tree coaching academy focused on collaboration and teams (Solution Tree, 2011). The positive response to this question seems to indicate administrators are aware of the important role collaborative teams play in PLCs.

Because collaboration is vital to PLCs, the district did implement weekly collaboration time for certified staff for the 2012-2013 school year by adopting an early release schedule. One day each week, students are released early to allow teachers at least 90 minutes to work in their collaborative teams to address areas such as student achievement, curriculum, and assessment. For the ensuing school year, the district leadership team and Board of Trustees again agreed to an early release schedule in an effort to continue supporting the work of the school-based PLCs. The district leadership team has also assigned district directors as liaisons to the 22 academic entities. This is to help support the individual schools in their efforts to implement PLCs school-wide, to ensure PLC practices are being implemented with fidelity, and to help school leadership teams stay focused on the district nonnegotiables (personal communication).

Curiously, early release time has had mixed reviews. Schools with certified staff that have already been collaborating and doing the work of PLCs, expressed gratitude for time built into their schedule for opportunities to meet. Before early release time had been added to the schedule, these teaching professionals met before and after school or during their preparatory periods to discuss student achievement, create unit plans, and develop common assessments. With the advent of early release time, they are able to spend quality time discussing the needs of their students.

However, early release time at other schools has not been well received. Teachers from one particular school have complained that sending students home early on a weekly basis will be detrimental. These teachers are concerned that students' test scores, as measured by the statewide standardized assessment, will be negatively impacted because of the time lost due to

the required collaboration (personal communication). However, the majority of teaching professionals are beginning to see the benefits of PLCs. One administrator commented:

> This has become a very productive time. At first it was a gripe session, but teacher conversations have evolved and now the teachers are using this time to really discuss the needs of each student. Teachers discuss issues that are affecting students outside of school, how they [teachers] are able to motivate them [individual students], and other behavior issues effecting students academically. Teachers do not want to lose this time. Because of the unique situation of our schedule, we have only been able to participate in collaboration time at the end of our three-week block. Teachers are requesting that next school year they are able to meet each week. They have chosen to give up their prep period on Wednesdays so they can work in their PLC groups. They will still continue to meet as PLC collaborative teams at the end of the three-week academic block as well. Our teachers recognize that PLCs are effective and beneficial to our students.

Nevertheless, the results of both the certified staff and administrator surveys indicate additional emphasis on collaboration will be necessary if PLC's are to be sustainable. As district and school administrators move forward along the PLC continuum, they will need to implement practices and expectations regarding collaboration. Administrators and leadership teams will need to continue to demonstrate the purpose and value of collaboration until it becomes ingrained into the culture of each school.

In addition, principals will need to continue cultivating a common belief system that collaboration fosters academic excellence. It will be the principal's responsibility to insure all teachers are invited and accept their role in the school's professional learning community. In order for PLCs to have the greatest impact on student achievement, principals must redefine their job as fostering a professional learning community in which teachers can continually work

together and learn from each other in an effort to become more effective practitioners. The principal will play a key role in creating a highly-effective professional learning community.

It will also be crucial for the district PLC team to continue setting the example and provide ongoing support to building administrators if their initial efforts are going to create a sustainable district-wide PLC culture of collaboration. Administrators at all levels will need to emphasize and celebrate the work of their PLC teams so each member of their school community recognizes the positive results from their collaborative efforts. Several schools have already had reason to celebrate. Teachers have been progress monitoring student academic growth throughout the school year. Overall test results indicate students are making positive gains towards adequate yearly growth. With the advent of PLCs, the academic interventions needed for individual students are being addressed so students are receiving the help they need in a timely manner (personal communication).

Expecting administrators to focus on meaningful collaboration will create an educational environment where positive reform can be sustained. Through the continued support of PLCs, teachers will be empowered to help direct and guide the school improvement effort which in turn will create more job satisfaction and provide a greater sense of purpose to their work. More importantly, children will benefit academically and socially from an educational environment where teachers believe in working together to improve student achievement. The synergy generated from professional educators will be the catalyst necessary to accomplish the district goals. As one participant stated, "Collaboration creates synergy in the teaching profession and allows educators to achieve more together than they could accomplish individually."

Vision and purpose. Collaboration is a vital part of PLCs; however, there are principles essential to creating a sustainable PLC culture. The foundation of PLCs "rests upon the four pillars of mission, vision, values, and goals" (DuFour et al., 2010, p. 30). To create a sustainable

PLC, these four pillars must be established and the school community must be willing to identify their shared sense of purpose. In question six (Figure 9), participants were asked to rate the level of their school having a shared vision. Of those responding, 70.8% indicated this was true of their school. In conjunction with PLC foundational principles, participants were asked to rank their schools' PLC practice of having a shared sense of purpose. Of those responding (Figure 10), 72.5% indicated this was evident in their school. Administrators also responded to similar questions regarding vision and purpose. Administrator survey question six (Figure 12) asked participants to rank the level of their school's shared vision. Of those responding, 65.4% indicated their faculty had at least addressed this PLC principle. Administrator survey question four (Figure 11) asked participants to indicate the level of shared purpose within their school. Of those responding, 69.3% noted their faculty had a clear sense of their collective purpose. In reviewing the certified staff responses with those of the administrators, it is apparent that more work needs to be done in this area. It is possible that there is a misunderstanding about how each group defines shared vision. It is also possible that administrators and certified staff have different visions for their school.

The initial survey was sent to participants in October after school leadership teams had attended the first two sessions of the PLC coaching academy. Collaboration and curriculum were the areas of focus at these training sessions. In addition district nonnegotiable expectations of the school leadership teams were set forth. From the results of both the certified staff survey and the administrator survey responses, it appears the PLC foundational principles were not implemented at a meaningful level. In moving forward, it will be essential for administrators and their leadership teams to continue revisiting the vision and purpose of their school communities. It will be important for administrators to encourage and recruit teacher leaders to become an integral part of the decision making process within the school to insure teachers have a sense of

ownership and are empowered to direct their school's improvement efforts. As PLCs hone their focus, the importance of sharing a common vision and purpose within the school community will become guiding principles.

District leadership. Leithwood et al., (2007, 2008), conducted in-depth studies of school leadership and concluded that creating a culture of learning for all children hinges to a great extent upon school leadership. They determined there is not a single documented case of a school successfully turning around its student achievement without talented leadership. They cite one reason for this is that leadership serves as a catalyst for unleashing the potential capacities that already exist in the school community. Furthermore, DuFour et al. (2010) declared that school improvement efforts are sustainable when district leadership plays a pivotal role by insuring that PLC foundational principles have been firmly established.

District leadership must continue to act on sound research as they strive to create a PLC culture throughout the district. They must cultivate an environment balanced between district control and school autonomy. District leadership must then be willing to hold principals responsible to implement school-based PLCs focused on addressing the district nonnegotiable priorities because when school level collaborative teams uphold district priorities, research indicates student achievement increases (Marzano & Waters, 2009). As PLCs become an integral part of the school improvement effort, they also become sustainable over time. This happens because teachers receive consistent administrative support and guidance while being empowered to make decisions pertaining to the areas of student achievement and instruction (DuFour et al., 2010; DuFour & Marzano, 2011; Lezotte, 2012). As the PLCs evolve, they become embedded as the underlying culture of the school and systematic school reform can be sustained.

With this research in mind, administrators were asked how well district leadership provides resources and support to help them succeed at what they are being asked to do (Figure

14). Of those responding, 73.1% noted district directors were providing resources and support. This seems to demonstrate a belief by administrators that the district is willing to support the schools in their cultural shift towards a PLC model. However, when reviewing the frequency table, 11.5% chose not to answer this particular question (Table 10). This could be due to in part to participants who chose not to complete the survey or due to participants who may have had concerns about answering this question. Interestingly, although the district had begun to provide intense PLC training before the survey was administered, a total 15.3% of participants indicated there is still work to be done on the part of the district staff to demonstrate their willingness to provide resources and support to building principals.

District directors will need to demonstrate by their actions their support of PLCs beyond just a financial investment in professional development. District directors will need to be willing to allow schools a certain degree of autonomy. They must also be willing to consult with school leadership teams, provide timely feedback on goals, encourage schools to take the initiative even if it diverges from their norm, and hold administrators accountable for implementing the PLC process and district nonnegotiables. District leadership will also need to police themselves by setting the example and providing a clear path for principals and teachers to follow. The consistent efforts by the district leadership team to support the PLC process at each school will increase the level of trust and respect needed to create a sustainable PLC culture.

Certified staff and administrator frequency comparisons. In order to determine possible differences between teacher and principal perceptions regarding the implementation of PLCs, data from the survey was disaggregated using a frequency comparision. Comparing the administrator responses from questions 4, 20, 13, and 14 on the Administrators' Survey with the similar questions on the Certified Staff Survey (4, 8, 25, and 38 respectively), demonstrates differences which need to be addressed.

The first comparison between the certified staff and administrators' perception of implementing PLCs at the building is in regard to having a clear sense of collective purpose (Figure 15). The percentage of administrators indicating their school community has consensus and act in accordance with their consensus was 46.2% while the certified staff who agreed with this perception was 38%. In order to bridge this gap, building administrators need to encourage teachers to actively engage in helping create their school's mission, vision, values, and goals. As teachers become an integral part of the decisions regarding school improvement, this disparity should begin to dissipate.

The second comparison between the certified staff and administrators' perception of implementing PLCs asked participants to rank the level in which it was evident in their school that learning for all was their core purpose (Figure 16). The percentage of administrators noting their school community had consensus and acted accordingly with their consensus was 38.5%. Compare this with the 61.3% of certified staff who indicated that their school community had consensus and acted accordingly. This equates to a 22.8% difference between these perceptions. It will be important for district leadership to continue emphasizing the nonnegotiables, setting expectations for PLC implementation, and monitoring the individual schools to be sure structures are in place demonstrating learning for all is a priority.

Another comparison between the certified staff and administrators' perceptions is to what extent collaborative teams of teachers use student assessment results as a critical element in their professional practice (Figure 17). The percentage of administrators indicating that their school communities had consensus in this area and acted accordingly was only 26.9% whereas 36.6% of certified staff agreed with this ranking equating to nearly a 10% disparity. In further review, 23.1% of administrators noted this PLC practice was true of some but not all the members of the school while 10.9% of certified staff held this was the case. This is almost a 13% difference. As

the district PLCs go forward, a greater emphasis will need to be placed on creating meaningful assessments which will provide results to guide their professional practice. This is one area which was not thoroughly addressed in the PLC coaching academy.

The district does not use benchmark assessments in elementary schools nor common assessments in the high schools or middle schools. However, the district has been actively engaged in Total Instructional Alignment (Carter, 2007) for the past three years (personal communication). Part of the district's long-range plan is to continue with this curriculum alignment process to address the changes created by the Common Core State Standards and the need to create valid district-wide assessments to improve student achievement. As one participant commented, "Results are everything. Collaboration about achievement is the only way to attain the results we must have."

Despite the gaps in PLC practices between administrators and certified staff, the data is encouraging. Collaboration is one PLC practice which has been accentuated throughout this school year. Comparing administrator and certified staff responses to collaborative teams working interdependently (Figure 18) shows a high level of agreement. The percentage of administrators noting that their schools had consensus and acted accordingly was 53.8% while the percentage of certified staff agreeing with this level of implementation was 53.9%. These comparisons are an indication that collaborative cultures are being created and are actively engaged in pursuing the work of the PLCs. District liaisons report that each school has a leadership team as well as grade level and/or content teams. The district has made a commitment to support PLC teams by providing 90 minutes of collaboration time weekly (personal communication). One participant stated:

> This must be a unified effort. The most difficult step is getting everyone on board with the concept. When everyone buys into the model, we become a collaborative team as an

entire school. Once that happens, the smaller PLCs within the school can be very effective.

Follow-up survey. The data derived from the follow-up survey administered in late January and early February has merit. Although the number of participants completing the survey was limited, the results will provide valuable feedback to the district leadership team. For instance, questions 28, 31, and 37 from the Administrators' Survey were not statistically significant originally. However, after three months of working to implement PLCs, elementary and secondary administrators' responses to these questions changed dramatically (Table 20).

These questions centered on ensuring PLCs address the critical questions which should be driving their collaboration, identifying collective commitments in order to clarify expectations, and defining the process for monitoring their progress towards reaching their goals. The change in perception regarding these particular points may be due to the fact that more administrators are recognizing what will be required of their teams to fully implement PLC principles and practices. The follow-up survey frequency comparisons may also indicate that both administrators and staff recognize the complexity of the work essential to implanting PLCs and creating a sustainable PLC culture.

For instance, when comparing question 14 from the Administrators' Survey and question 38 from the Certified Staff Survey, the changes from the initial survey were dramatic. This question was in regards to using assessments to inform and improve professional practice. This means teachers and principals review student testing data to make decisions about instructional strategies, curriculum, assessment, and scheduling to improve their ability to teach and instruct. Having a better understanding of this part of PLCs, a larger percentage of participants indicated their schools had consensus and acted in accordance with their consensus. Originally 45.5% of administrators indicated this was the case. In the follow-up survey, this percentage increased to

53.8%. Certified staff who noted their school had consensus and acted accordingly was initially 40.8%. In the follow-up survey, this percentage increased to 53.9%. This same type of dramatic increase was also noted in regard to participants who indicated this was true of some but not all members of their school. Initially, 7.7% of administrators and 6.7% of certified staff members responded that this was the case. In the follow-up survey, 27.3% of administrators and 20.8% of certified staff held this was true of their school. These shifts may be an indication that principals and teachers are gaining a better understanding of PLCs and the importance of building a collaborative culture focused on student learning, results, and instructional practices.

District Commitment

The district leadership team has made substantial efforts to train administrators and certified staff members in PLC practices. It has taken a significant financial obligation and considerable time and support to provide professional development in order to create systematic, district-wide change. District leadership is committed to furthering the work of PLCs. At this time, a portion of the district's budget for the 2013-2014 year has been earmarked for providing ongoing PLC training. In addition, professional development plans are being formulated to insure school leadership teams are given necessary time and support to move the work of the PLCs forward. This includes scheduling quarterly professional development dates for the 2013-2014 school year. Training for this professional development will be offered by district directors using *Learning by doing: A Handbook for Professional Learning Communities at Work* (DuFour et al., 2010). The district has plans to begin addressing the area of instruction in the summer of 2013. At least 200 teachers will be invited to assist in aligning curriculum to incorporate the Common Core State Standards, build unit plans, and begin the work of developing common assessments. The district has also committed to provide PLC professional development to any new building administrator who joins the district within the next few years. New administrators

will attend Solution Tree's *The Professional Learning Communities at Work Coaching Academy* (personal communication).

In addition to the continued professional development support, district leadership has also included weekly early release time in the 2013-2014 school calendar. Principals and their staffs will be expected to use this time to address the district's nonnegotiables. Principals will be expected to commit to ongoing PLC professional development at the building level to ensure PLC foundations are securely in place. At this point in time, PLCs will continue to need support and training in order to make this school improvement effort sustainable and the defining hallmark of the district culture. Another proposal for furthering the work of the PLCs is to provide principals with resources to develop their learning and the learning and leadership of others. For instance, administrators will participate in a book study for the summer of 2013; they will be reading *Switch* (2010) written by Chip Heath and Dan Heath (personal communication).

The district is on the threshold of implementing PLCs. The crux of this process is to create a sustainable, school-improvement structure which ultimately benefits the children. At this time, the district PLCs are dependent upon the leadership of the district and building administrators. More teachers need to be encouraged and empowered to take part in the process. Teachers need opportunities to lead and help make school improvement decisions which will positively impact their students as well as the students throughout the school and throughout the district. PLCs are sustainable when district leadership provides a balance between control and autonomy, when principals receive direction and support, and when teacher leaders are empowered to actively participate in the school improvement process.

Recommendations for Further Research

The process by which one school district has elected to address today's educational challenges is by implementing PLCs district-wide. The district approached this system-wide

change through significant financial support, realignment of their school calendar, rewriting district goals to align with research-based practices, supporting and addressing the needs of individual schools through assigned district liaisons, as well as setting expectations for principals to implement PLC principles and practices at their schools.

Recommendations for further research include replicating this study in a district of similar size and financial means. It would also be interesting to replicate this study in a district of similar size which does not have the financial ability to provide intensive professional development by an outside agency. Another recommendation for further research is in the area of leadership. Research identifying the leadership qualities necessary to integrate a PLC culture and create system-wide change could provide further insight into PLC implementation. This would include the leadership qualities of the superintendent, other district leaders such as deputy superintendents, assistant superintendents, directors, as well as principals and teacher leaders. Further research could include teacher leadership and how principals build and promote leadership capacity within their teaching staff. Research regarding how a district supports and improves leadership capacity among their building principals would also prove beneficial. An additional research study monitoring the PLC collaborative process as teachers move from working in isolation to becoming interdependent members of a team would be beneficial. In addition, a long-term research study tracking the length of time needed to change the culture to reflect PLC practices would provide useful information for schools just beginning the PLC process. Finally, conducting a research study on the impact a PLC collaborative culture has on student achievement would strengthen the overall body of research.

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Appendix A
Certified Staff Survey Questions

I, N. Shalene French, am conducting a survey as part of my doctoral studies at Northwest Nazarene University to explore the implementation and practices of Professional Learning Communities (PLC) [redacted]. The goal of this study is to identify PLC practices throughout the [redacted] and determine if these practices are being implemented at such a level that sustainable PLCs are possible even if there is a change in administration. This 15 minute survey is voluntary. You may choose not to answer any questions that you find embarrassing or offensive and you may discontinue taking the survey at any time. If you have any undue stress or anxiety as a result of taking this survey or other concerns about your rights as a participant, I am available by calling [redacted]. Survey results are anonymous and not even the researcher will be able to connect responses to individuals. Thank you.

1) By continuing in this survey, you give your consent to participate in this study (Yes or No)
2) I am a certified staff member in (an elementary or secondary school)
3) I am a certified staff member in a Title 1 school (Yes, No, or Not Sure)

Response Choices for Quantitative Questions:
This is not true of our school
This is true of some but not all of the members of our school
Uncertain
Our school has addressed this issue
We have consensus and act in accordance with our consensus

Quantitative Questions:
4) At our school-We have a clear sense of our collective purpose
5) At our school-We have a shared understanding of and commitment to the school we are attempting to create
6) At our school-We have a shared vision
7) At our school-We have made commitments to each other regarding how we must behave in order to achieve our shared vision
8) It is evident in our school that -Learning for all is our core purpose
9) It is evident in our school that -We have identified our short-term targets
10) It is evident in our school that -We have agreed upon time lines for achieving those targets
11) We understand the purpose and priorities of our school -Because they are communicated consistently and effectively
12) We understand the purpose and priorities of our district-Because they are communicated consistently and effectively
13) The leaders in the school communicate purpose and priorities through -Modeling
14) The leaders in the school communicate purpose and priorities through -Allocation of resources
15) The leaders in the school communicate purpose and priorities through -What they are willing to confront
16) We work with colleagues to build shared knowledge regarding -State and national standards
17) We work with colleagues to build shared knowledge regarding -Curriculum guides

18) We work with colleagues to build shared knowledge regarding -Trends in student achievement
19) We work with colleagues to build shared knowledge regarding -Expectations for the next course or grade level
20) We work with colleagues to clarify the criteria by which-We will judge the quality of student work
21) We practice applying those criteria until -We can do so consistently
22) We monitor the learning of each student's attainment of all essential outcomes on / a timely basis -Through a series of frequent, team-developed common formative assessments that are aligned with high-stakes assessments students are required to take
23) We provide a system of interventions that guarantees each student -Will receive additional time and support for learning if he/she experiences initial difficulty
24) We provide a system of interventions that guarantees each student -Has access to enriched and extended learning opportunities for students who are proficient.
25) Structures have been put into place to ensure:-We are organized into collaborative teams in which members work interdependently to achieve common goals that directly impact student achievement
26) Structures have been put into place to ensure:-Collaboration is embedded in our routine work practice.
27) Structures have been put into place to ensure:-We are provided with time to collaborate.
28) Structures have been put into place to ensure:-We are clear on the critical questions that should drive our collaboration.
29) Structures have been put into place to ensure:-Our collaboration work is monitored and supported.
30) We have identified and honor the commitments we have made to the members of our / collaborative teams...-Enhance the effectiveness of our team.
31) We have identified and honor the commitments we have made to the members of our / collaborative teams...-Identify collective commitments or norms in order to clarify our expectations of how our team will operate
32) We have identified and honor the commitments we have made to the members of our / collaborative teams...-Use the norms to address problems that may occur on the team
33) We have identified and honor the commitments we have made to the members of our / collaborative teams...-Assess our effectiveness on the basis of results rather than intentions.
34) The members of each of our collaborative teams -Understand the importance of setting SMART goals
35) The members of each of our collaborative teams -Are working interdependently to achieve one or more SMART goals that align with our school goals.
36) The members of each of our collaborative teams -Identify specific action steps members will take to achieve the goal
37) The members of each of our collaborative teams -Identify a process for monitoring progress toward the goal.
38) Collaborative teams of teachers -Regard ongoing analysis of evidence of student learning as a critical element in the teaching and learning process
39) Teachers are provided with -Frequent and timely information regarding the achievement of their students
40) Teachers use evidence of student learning to:-Respond to students who are experiencing difficulty

41) Teachers use evidence of student learning to:-Enrich and extend the learning of students who are proficient
42) Teachers use evidence of student learning to:-Inform and improve the individual and collective practice of members
43) Teachers use evidence of student learning to:-Identify team professional development needs
44) Teachers use evidence of student learning to:-Measure progress toward team goals

Qualitative Questions:
45) It is very important to the PLC process for teachers to collaborate about student achievement. Why do you think this is so important?
46) What recommendations would you give to those individuals just getting started in the process of transforming their schools into Professional Learning Communities?

Appendix B

Administrator Survey Questions

I, N. Shalene French, am conducting a survey as part of my doctoral studies at Northwest Nazarene University to explore the implementation and practices of Professional Learning Communities (PLC) in the [redacted]. The goal of this study is to identify PLC practices throughout the [redacted] and determine if these practices are being implemented at such a level that sustainable PLCs are possible even if there is a change in administration. This 15 minute survey is voluntary. You may choose not to answer any questions that you find embarrassing or offensive and you may discontinue taking the survey at any time. If you have any undue stress or anxiety as a result of taking this survey or other concerns about your rights as a participant, I am available by calling [redacted]. Survey results from teachers and administrators are anonymous and not even the researcher will be able to connect responses to individuals. Thank you.

1) By continue in this / survey, you give your consent to participate in this study (Yes or No)
2) I am an administrator in (an elementary, secondary school, or district level)
3) I am an administrator in a Title 1 school (Yes, No, or Not Applicable)

Response Choices for Quantitative Questions:
This is not true of our school
This is true of some but not all of the members of our school
Uncertain
Our school has addressed this issue
We have consensus and act in accordance with our consensus

Quantitative Questions:
4) At my school-We have a clear sense of our collective purpose
5) At my school-We have a shared understanding of and commitment to the school we are attempting to create
6) At my school-We have a shared vision
7) At my school-We have a common PLC language that is widely understood throughout the organization
8) It is evident in my school that -Learning for all is our core purpose
9) It is evident in my school that -We are working interdependently to achieve one or more SMART goals that align with our school goals.
10) It is evident in my school that -We have identified our short-term targets
11) It is evident in my school that -We have articulated our long-term priorities
12) Teachers in my building understand-What must be "tight" in our school

13) At my school, -Teachers are organized into collaborative teams (not merely groups) working interdependently on the right work
14) At my school, -Teachers use results from assessments to inform and improve professional practice
15) At my school-Student learning is being monitored on a frequent and timely basis
16) At my school-The quality of student work is being assessed according to the same criteria within content areas
17) At my school, student who experience difficulty acquiring essential knowledge and skills receive-Additional time for learning
18) At my school, student who experience difficulty acquiring essential knowledge and skills receive-Additional support for learning
19) At my school, student who experience difficulty acquiring essential knowledge and skills receive-Additional help in a timely, directive, and systematic way
20) It is evident in our district that -Learning for all is our core purpose
21) In our district, -We have a common PLC language that is widely understood throughout our district
22) In our district, -We understand what must be "tight" throughout our organization
23) District leadership-Provides resources and support to help us succeed at what we are being asked to do
24) District leadership-Demonstrate a sustained commitment to improving schools
25) District leadership-Have developed the capacity of school personnel to function as a PLC
26) District leadership-Have been explicit about specific practices they expect to see in each school
27) District leadership-Have created processes to support principals in implementing those practices
28) District leadership-Monitors the progress of my school's PLC

Qualitative Questions:
29) What recommendations would you give to school leaders who are just getting started in the process of transforming their schools into Professional Learning Communities?
30) What are some of the things that need to be addressed at the district level in order to support individual schools in becoming Professional Learning Communities?

Appendix C

Superintendent Permission Letter

May 22, 2012

Dear Superintendent:

I am seeking your permission to conduct a research study involving the administrators and certified staff of _____ School District involved with Professional Learning Communities.

The study is titled **Whatever It Takes: Creating Sustainable Professional Learning Communities.** The purpose of the study is to determine the level of understanding certified staff and administrators have regarding Professional Learning Communities and to what extent Professional Learning Communities are being implemented throughout the District.

Participation in this study is completely voluntary. All participants will be asked to take an anonymous survey based on the work of Richard DuFour and associates found at AllThingsPLC.com, *Learning By Doing:A Handbook for Professional Learning Communities at Work* (2nd Ed.), and *Whatever It Takes: How Professional Learning Communities Respond When Kids Do Not Learn*. The survey will be conducted using Qualtrics Survey Software and results will be stored on Qualtrics secure data-base.

The results will be published only in aggregate form and will be used to determine what additional professional development is needed to support building administrators and certified staff in becoming more effective Professional Learning Communities and to gather more knowledge about effective Professional Learning Communities implementation. By signing below, you give me permission to proceed with conducting the study. At the conclusion of the study, I would like to share the aggregate results with you and with your administrative team.

Thank you for your consideration.

Sincerely,

N. Shalene French
Northwest Nazarene Doctoral Student

_____I give N. Shalene French permission to proceed with the study described above.

_____I decline to give N. Shalene French permission to proceed with the study described above. (The following concerns need to be addressed first)

Signature_____ Date_____

Appendix D

Principal Permission Letter

May 22, 2012

Dear Principal:

I am seeking your permission to conduct a research study involving the administrators and certified staff of _____ School involved with Professional Learning Communities.

The study is titled **Whatever It Takes: Creating Sustainable Professional Learning Communities.** The purpose of the study is to determine the level of understanding certified staff and administrators have regarding Professional Learning Communities and to what extent Professional Learning Communities are being implemented throughout the District.

Participation in this study is completely voluntary. All participants will be asked to take an anonymous survey based on the work of Richard DuFour and associates found at AllThingsPLC.com, *Learning By Doing:A Handbook for Professional Learning Communities at Work* (2nd Ed.), and *Whatever It Takes: How Professional Learning Communities Respond When Kids Do Not Learn*. The survey will be conducted using Qualtrics Survey Software and results will be stored on Qualtrics secure data-base.

The results will be published only in aggregate form and will be used to determine what additional professional development is needed to support building administrators and certified staff in becoming more effective Professional Learning Communities and to gather more knowledge about effective Professional Learning Communities implementation. By signing below, you give me permission to proceed with conducting the study. At the conclusion of the study, I would like to share the aggregate results with you and with your staff.

Thank you for your consideration.

Sincerely,

N. Shalene French
Northwest Nazarene Doctoral Student

_____I give N. Shalene French permission to proceed with the study described above.

_____I decline to give N. Shalene French permission to proceed with the study described above. (The following concerns need to be addressed first)

Signature_____ Date_____

Appendix E

NIH Certificate

Certificate of Completion

The National Institutes of Health (NIH) Office of Extramural Research certifies that **N. French** successfully completed the NIH Web-based training course "Protecting Human Research Participants".

Date of completion: 10/28/2011

Certification Number: 792342

Appendix F

HRRC Approval Letter

NORTHWEST NAZARENE
UNIVERSITY

June 6, 2012

N. Shalene French
234 N. State St.
Rigby, ID 83442

Dear Shalene:

This letter is to inform you that your project entitled "Whatever It Takes: Creating Sustainable Professional Learning Communities" has been approved by the Human Research Review Committee. Your reference number is 5062012.

The required forms have been signed and a full copy is being retained in the Human Research Review Committee files.

Please let me know if you have any questions.

Sincerely,

Stephen C Mountjoy, Ph.D.
Chair, HRRC
(208)467-8436
scmountjoy@nnu.edu

www.nnu.edu
623 S. University Boulevard
Nampa, Idaho 83686-6897
tel: 208-467-8011

Appendix G

Timeline

February 2012 – April 2012	Administrators' PLC Book Study and training *Learning By Doing: A Handbook for Professional Learning Communities at Work*, 2nd ed., DuFour, DuFour, Eaker, & Many (2010)
May 2012	Distribution of DuFour et al. (2010) book to all district certified staff members for District book study
August 8 & 9, 2012	PLC Training for each schools' leadership team. Training conducted by a consultant from Solution Tree
August 2012 – September 2012	Validity check survey is initiated. Content Validity Index score is calculated
September 19 & 20, 2012	PLC Training for each schools' leadership team. Training conducted by a consultant from Solution Tree
October 8 – 19, 2012	PLC survey window is open for district certified staff and administrators
October 10, 2012	Early Release Time on Wednesday begins. All certified staff allotted 90 minutes of PLC collaborative planning time to address student achievement
November 27, 2012	PLC Training and Planning Time for each schools' leadership team conducted by District Improvement Team
January 21 – February 1, 2013	Follow-Up Survey: PLC survey window is open for district certified staff and administrators. Follow-up survey to determine if there are significant changes in knowledge of PLC practices and principles
February 5 & 6, 2013	Final PLC Training for each schools' leadership team. Training conducted by a consultant from Solution Tree Press
March 4, 2013	Final submission of research results

Appendix H

Content Validity Index Email Correspondence

1. Thank you for your willingness to help in this Content Validity Index survey. You are being asked to rate the questions on the survey as either: Not Relevant, Somewhat Relevant, Quite Relevant, or Highly Relevant as the questions pertain to implementing Professional Learning Communities and practices of Professional Learning Communities.

   At the end of the survey, there is a comment section for you to post comments regarding specific survey questions that may need addressing.
   Once again, Thank You for your help in the initial stages of this research project.

2. Thank you for volunteering to help with this validity survey. This survey is designed to validate the questions which will be used for a research study on Professional Learning Communities. Questions will need to be rated on a scale of Not Relevant to Highly Relevant.
   I appreciate your feedback

3. I just wanted to a take a moment to thank you for being willing to complete my Content Validity Survey. I would ask if you wouldn't mind taking a moment to complete the survey - I value your time and appreciate your input.

4. After reviewing your responses, there were two questions which were identified as somewhat relevant.
   I reworded the questions using your suggestions. Would you please take a moment and rate the "new" questions to see if they are solid questions focused on establishing Professional Learning Communities.
   The first question will be a multiple choice question when sent out to administrators.
   The second question will be an open response question.
   Knowing this may help you better understand the context of the questions.
   Thank you for your help with this validity survey. I look forward to responses.

5. Thank you for taking time to complete this Content Validity Index survey. In this survey you will be asked to rate the questions of the survey as either: Not Relevant, Somewhat Relevant, Quite Relevant, or Highly Relevant as the questions relate to implementation of Professional Learning Communities and practices of Professional Learning Communities. At the end of the survey there is a comment section for you to make comments regarding specific survey questions you feel need to be addressed. You are also welcome to leave

suggestions for improving the survey.

Again, thank you for helping at the initial stage of this research project.

6. Thank you for taking time to complete this Content Validity Index survey. In this survey you will be asked to rate the questions of the survey as either: Not Relevant, Somewhat Relevant, Quite Relevant, or Highly Relevant as the questions relate to implementation of Professional Learning Communities and practices of Professional Learning Communities. At the completion of the validity process, this survey will be administered to a group of teachers who are in the process of implementing PLCs in their schools.

   The last two questions of the survey are open-ended questions. Please rate them to determine if they are relate to the implementation of PLCs.

   Please note: At the end of this validity survey there is a comment section for you to make comments regarding specific survey questions you feel need to be addressed. You are also welcome to leave suggestions for improving the survey.

   Again, thank you for helping at the initial stage of this research project.

7. Thank you again for helping with my Content Validity Survey. Your time is greatly appreciated.

Appendix I

Content Validity Index Survey Results

Administrator Survey for PLC	9/25/2012					
	Not Relevent	Somewhat Relevant	Quite Relevant	Highly Relevant	Total	Percentage
Q1		1		5	6	83.33%
Q2		1		5	6	83.33%
Q3		1		5	6	83.33%
Q4		1	2	3	6	83.33%
Q5			1	5	6	100.00%
Q6			3	3	6	100.00%
Q7		1	2	3	6	83.33%
Q8		2	2	2	6	66.67%
Q9		1	2	3	6	83.33%
Q10			1	5	6	100.00%
Q11			1	5	6	100.00%
Q12		1		5	6	83.33%
Q13			2	4	6	100.00%
Q14		1		5	6	83.33%
Q15		1		5	6	83.33%
Q16		1	1	4	6	83.33%
Q17			1	5	6	100.00%
Q18			3	3	6	100.00%
Q19		1	2	3	6	83.33%
Q20		1	1	4	6	83.33%
Q21		1	1	4	6	83.33%
Q22		1		5	6	83.33%
Q23		1	2	3	6	83.33%
Q24		1		5	6	83.33%
Q25			2	4	6	100.00%
Q26	1	2	3		6	50.00%
Q27		1	1	4	6	83.33%
					AVG	86.42%

	Administrator Survey for PLC	9/25/2012					
		Not Relevent	at Relevant	Quite Relevant	Highly Relevant	Total	Percentage
	Q1		1		5	6	83.33%
	Q2		1		5	6	83.33%
	Q3		1		5	6	83.33%
	Q4		1	2	3	6	83.33%
	Q5			1	5	6	100.00%
	Q6			3	3	6	100.00%
	Q7		1	2	3	6	83.33%
9/26/2012	Q8		2	2	2	6	
	Q9		1	2	3	6	83.33%
	Q10			1	5	6	100.00%
	Q11			1	5	6	100.00%
	Q12		1		5	6	83.33%
	Q13			2	4	6	100.00%
	Q14		1		5	6	83.33%
	Q15		1		5	6	83.33%
	Q16		1	1	4	6	83.33%
	Q17			1	5	6	100.00%
	Q18			3	3	6	100.00%
	Q19		1	2	3	6	83.33%
	Q20		1	1	4	6	83.33%
	Q21		1	1	4	6	83.33%
	Q22		1		5	6	83.33%
	Q23		1	2	3	6	83.33%
	Q24		1		5	6	83.33%
	Q25			2	4	6	100.00%
9/26/2012	Q26	1	2	3		6	
	Q27		1	1	4	6	83.33%
						AVG	88.67%

Teacher Survey for PLC	9/25/2012					
	Not Relevent	Somewhat Relevant	Quite Relevant	Highly Relevant	Total	Percentage
Q1		1	2	5	8	88%
Q2		1	1	6	8	88%
Q3		2	2	4	8	75%
Q4		1	2	5	8	88%
Q5		2	1	5	8	75%
Q6		4	2	2	8	50%
Q7		1	3	4	8	88%
Q8		1	4	3	8	88%
Q9		1	2	5	8	88%
Q10		2	3	3	8	75%
Q11		3	2	3	8	63%
Q12		2	3	3	8	75%
Q13		1	4	3	8	88%
Q14	1	2	3	2	8	63%
Q15	1	1	3	3	8	75%
Q16			3	5	8	100%
Q17			2	6	8	100%
Q18		1	1	6	8	88%
Q19		1	2	5	8	88%
Q20			3	5	8	100%
Q21		1	2	5	8	88%
Q22	1		1	6	8	88%
Q23		1	1	6	8	88%
Q24			2	6	8	100%
Q25			2	6	8	100%
Q26			3	5	8	100%
Q27		1	3	3	7	86%
Q28		1	2	5	8	88%
Q29		1	3	4	8	88%
Q30		1	2	5	8	88%
Q31		1	3	4	8	88%
Q32		1	3	4	8	88%
Q33			3	5	8	100%
Q34		1	4	3	8	88%
Q35		1	4	3	8	88%
Q36			5	3	8	100%
Q37		1	4	3	8	88%
Q38		1	4	3	8	88%
Q39		2	3	3	8	75%
Q40		1	3	4	8	88%
Q41	1	1	1	5	8	75%
Q42			1	7	8	100%
Q43		1	3	4	8	88%
Q44			4	4	8	100%
Q45		1	3	4	8	88%
Q46			4	4	8	100%
Q47		2	2	3	7	71%
Q48	1	2	1	3	7	57%
					AVG	86%

Teacher Survey for PLC	9/25/2012					
	Not Relevent	Somewhat Relevant	Quite Relevant	Highly Relevant	Total	Percentage
Q1		1	2	5	8	88%
Q2		1	1	6	8	88%
Q4		1	2	5	8	88%
Q7		1	3	4	8	88%
Q8		1	4	3	8	88%
Q9		1	2	5	8	88%
Q13		1	4	3	8	88%
Q16			3	5	8	100%
Q17			2	6	8	100%
Q18		1	1	6	8	88%
Q19		1	2	5	8	88%
Q20			3	5	8	100%
Q21		1	2	5	8	88%
Q22	1		1	6	8	88%
Q23		1	1	6	8	88%
Q24			2	6	8	100%
Q25			2	6	8	100%
Q26			3	5	8	100%
Q27		1	3	3	7	86%
Q28		1	2	5	8	88%
Q29		1	3	4	8	88%
Q30		1	2	5	8	88%
Q31		1	3	4	8	88%
Q32		1	3	4	8	88%
Q33			3	5	8	100%
Q34		1	4	3	8	88%
Q35		1	4	3	8	88%
Q36			5	3	8	100%
Q37		1	4	3	8	88%
Q38		1	4	3	8	88%
Q40		1	3	4	8	88%
Q42			1	7	8	100%
Q43		1	3	4	8	88%
Q44			4	4	8	100%
Q45		1	3	4	8	88%
Q46			4	4	8	100%
					AVG	91%

Appendix J

PLC Administrator and Certified Staff Survey Email Correspondence

1. This year [redacted] is beginning to implement Professional Learning Communities (PLC) district-wide in an effort to create a [redacted] culture focused on student achievement. In order to improve the PLC process, I am asking you to complete this 15 minute survey regarding the implementation of Professional Learning Communities in your school and in [redacted]. The survey is distributed through Qualtrics, a research survey software used by Northwest Nazarene University; be assured, your answers and insights are completely anonymous.

   Please take a moment to complete the survey. Although your participation in this survey is voluntary, your feedback is vital and will be used to further the work of [redacted] and PLC research. If you should have questions or concerns, please feel free to contact me.

   Thank you for your time and consideration.

   N. Shalene French, Ed.S.
   Doctoral Candidate at Northwest Nazarene University
   [redacted]
   [redacted]

2. This year [redacted] began implementation of Professional Learning Communities (PLC) in an effort to create a [redacted] culture focused on student achievement. In order to improve the PLC process, I am asking you to complete this 15 minute survey regarding the implementation of Professional Learning Communities in your school. The survey is distributed through Qualtrics, a research survey software used by Northwest Nazarene University; be assured, your answers and insights are completely anonymous.

   Please take a moment to complete the survey. Your feedback is vital and will be used to further the work of [redacted] and PLC research.

   Thank you for your time and consideration.

   N. Shalene French, Ed.S.
   Doctoral Candidate at Northwest Nazarene University
   [redacted]

[redacted]

3. Last week was a very busy week. Hopefully, this week you will be able to participate in the Professional Learning Communities (PLCs) survey. The survey takes between 10 - 15 minutes to complete. Although your participation is voluntary, your response is vital to the work we are doing as a district and in furthering the research regarding PLCs.

   Please remember, this survey is completely anonymous through the use of Quatrics survey software. If you have questions or concerns, please let feel free to contact me.

4. Thank you for taking the time to complete the Professional Learning Communities (PLCs) survey. Your insight will help to improve the implementation of PLCs on a [redacted] level. If you have further questions or suggestions, please let me know.

   Again - thank you for your participation.

   N. Shalene French
   Doctoral Candidate
   Northwest Nazarene University
   [redacted]

5. Jan 28 – Feb 8 Follow-Up Certified Staff survey
   I, N. Shalene French, am conducting a survey as a follow-up to the survey sent to certified staff members in October 2012. This survey is part of my doctoral studies at Northwest Nazarene University to explore the implementation and practices of Professional Learning Communities (PLC) in the [redacted]. This 10 minute survey is voluntary. You may choose not to answer any questions that you find embarrassing or offensive and you may discontinue taking the survey at any time. If you have any undue stress or anxiety as a result of taking this survey or other concerns about your rights as a participant, I am available by calling [redacted]. Survey results are anonymous and not even the researcher will be able to connect responses to individuals. Thank you.

   N. Shalene French
   Doctoral Candidate
   Northwest Nazarene University
   [redacted]

6. January 28 – February 8 Follow-Up Administrator survey

I am conducting a follow-up survey in conjunction with the survey that was sent out to administrators in October 2012. This is part of my doctoral studies at Northwest Nazarene University to explore the implementation and practices of Professional Learning Communities (PLC) in the [redacted]. This 10 minute survey is voluntary. You may choose not to answer any questions that you find embarrassing or offensive and you may discontinue taking the survey at any time. If you have any undue stress or anxiety as a result of taking this survey or other concerns about your rights as a participant, I am available by calling [redacted]. Survey results are anonymous and I will not be able to connect responses to individuals. Thank you.

N. Shalene French
Doctoral Candidate
Northwest Nazarene University
[redacted]

Appendix K

Certified Staff Survey Questions

Number	Certified Staff Survey Questions
4	At our school we have a clear sense of our collective purpose
6	At our school we have a shared vision
8	It is evident in our school that learning for all is our core purpose
16	We work with colleagues to build shared knowledge regarding state and national standards
17	We work with colleagues to build shared knowledge regarding curriculum guides
18	We work with colleagues to build shared knowledge regarding trends in student achievement
19	We work with colleagues to build shared knowledge regarding expectations for the next course or grade level
22	We monitor the learning of each student's attainment of all essential outcomes on a timely basis through a series of frequent, team-developed common formative assessments that are aligned with high-stakes assessments students are required to take
25	Structures have been put into place to ensure we are organized into collaborative teams in which members work interdependently to achieve common goals that directly impact student achievement
26	Structures have been put into place to ensure collaboration is embedded in our routine work practice
27	Structures have been put into place to ensure we are provided with time to collaborate
28	Structures have been put into place to ensure we are clear on the critical questions that should drive our collaboration
29	Structures have been put into place to ensure our collaboration work is monitored and supported
31	We have identified and honor the commitments we have made to the members of our collaborative teams [by] identify[ing] collective commitments or norms in order to clarify our expectations of how our team will operate
35	The members of each of our collaborative teams are working interdependently to achieve one or more SMART goals that align with our school goals
37	The members of each of our collaborative teams identify a process for monitoring progress toward the goal
38	Collaborative teams of teachers regard ongoing analysis of evidence of student learning as a

	critical element in the teaching and learning process
40	Teachers use evidence of student learning to respond to students who are experiencing difficulty
41	Teachers use evidence of student learning to enrich and extend the learning of students who are proficient

Appendix L

Mann-Whitney U Results Elementary/Secondary Certified Staff Comparison

Survey Number	Mann-Whitney U	p Score (p <0.05)	Cohen's *d*
4	6298.5	0.000	0.28
6	6086.5	0.000	0.29
8	6260.5	0.000	0.30
16	6949.5	0.088	
17	6941.5	0.090	
18	5949.5	0.000	0.23
19	6905.5	0.069	
22	6320.0	0.007	0.17
25	7610.5	0.555	
26	6962.5	0.091	
27	6916.5	0.057	
28	7419.5	0.440	
29	7263.5	0.236	
31	6433.5	0.112	
35	6578.5	0.246	
37	6323.0	0.118	
38	5337.0	0.000	0.23
40	5320.5	0.000	0.24
41	4862.5	0.000	0.28

Source: SPSS (2013)

Appendix M

Mann-Whitney U Results Elementary/Secondary Title 1 School Staff Comparison

Survey Number	Mann-Whitney U	p Score (p <0.05)	Cohen's *d*
4	225.0	0.037	0.23
6	277.5	0.272	
8	230.0	0.023	0.25
16	199.5	0.182	
17	221.5	0.410	
18	235.0	0.605	
19	254.5	0.940	
22	208.5	0.342	
25	225.0	0.377	
26	208.0	0.301	
27	188.0	0.093	
28	161.5	0.080	
29	210.0	0.252	
31	188.5	0.374	
35	200.5	0.548	
37	219.5	0.990	
38	209.0	0.690	
40	219.5	0.879	
41	186.5	0.412	

Source: SPSS (2013)

Appendix N

Administrator Survey Question

Number	Administrator Survey Questions
4	At my school we have a clear sense of our collective purpose
6	At my school we have a shared vision
8	It is evident in my school that learning for all is our core purpose
9	It is evident in my school that we are working interdependently to achieve one or more SMART goals that align with our school goals
13	At my school, teachers are organized into collaborative teams (not merely groups) working interdependently on the right work
14	At my school, teachers use results from assessments to inform and improve professional practice
15	At my school student learning is being monitored on a frequent and timely basis
17	At my school, students who experience difficulty acquiring essential knowledge and skills receive additional time for learning
18	At my school, students who experience difficulty acquiring essential knowledge and skills receive additional support for learning
19	At my school, students who experience difficulty acquiring essential knowledge and skills receive additional help in a timely, directive, and systematic way
20	It is evident in our district that learning for all is our core purpose
23	District leadership provides resources and support to help us succeed at what we are being asked to do
25	District leadership have developed the capacity of school personnel to function as a PLC
26	District leadership have been explicit about specific practices they expect to see in each school

Appendix O

Follow-Up Mann-Whitney U Elementary/Secondary Certified Staff Comparison

Original Survey Number	Mann-Whitney U	Follow-Up Mann-Whitney U	p Score (p <0.05)	Follow-Up p Score (p < 0.05)	Cohen's *d*	Follow-Up Cohen's D
4	6298.5	1464.0	0.000	0.025	0.28	0.20
6	6086.5	1438.0	0.000	0.017	0.29	0.22
8	6260.5	1681.5	0.000	0.205	0.30	
16	6949.5	1691.5	0.088	0.250		
17	6941.5	1521.0	0.090	0.044		
18	5949.5	1534.5	0.000	0.051	0.23	
19	6905.5	1654.0	0.069	0.185		
22	6320.0	1567.5	0.007	0.073	0.17	
25	7610.5	1557.5	0.555	0.060		
26	6962.5	1842.0	0.091	0.728		
27	6916.5	1793.5	0.057	0.514		
28	7419.5	1393.0	0.440	0.007		0.24
29	7263.5	1667.5	0.236	0.183		
31	6433.5	1307.5	0.112	0.020		0.21
35	6578.5	1676.5	0.246	0.706		
37	6323.0	1256.0	0.118	0.008		0.25
38	5337.0	1153.0	0.000	0.002	0.23	0.29
40	5320.5	1205.5	0.000	0.001	0.24	0.29
41	4862.5	1033.0	0.000	0.000	0.28	0.35

Source: SPSS (2013)

Appendix P

Follow-Up Statistical Results Elementary/Secondary Administrators Comparison

Original Survey Number	Mann-Whitney U	Follow-Up Mann-Whitney U	p Score (p <0.05)	Follow-Up p Score (p < 0.05)	Cohen's *d*	Follow-Up Cohen's d
8	44.0	8	0.305	0.730		
9	40.5	7.5	0.215	0.556		
13	57.0	8	0.909	0.730		
14	21.5	8.5	0.009	0.130	0.53	0.13
15	31.0	9	0.088	0.905		
17	45.0	8	0.494	0.730		
18	48.5	9.5	0.679	0.905		
19	46.5	10	0.576	1.000		
20	46.0	8	0.541	0.730		
23	52.5	7.5	0.907	0.556		
25	27.5	7.5	0.040	0.555	0.43	0.24
26	43.0	4	0.398	0.190		

Source: SPSS (2013)