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A Study of Professional Learning Communities: Characteristics of Implementation and Perceived Effectiveness in Improvement Schools in West Virginia

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A STUDY OF PROFESSIONAL LEARNING COMMUNITIES: CHARACTERISTICS OF IMPLEMENTATION AND PERCEIVED EFFECTIVENESS IN IMPROVEMENT SCHOOLS IN WEST VIRGINIA

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ABSTRACT

The purpose of this study was to investigate teachers' perceptions of levels of implementation and levels of effectiveness in improving student learning of Professional Learning Communities (PLCs) in low-performing schools in West Virginia. This study also sought to determine differences in levels of implementation and effectiveness for five selected independent variables and examined the relationship between levels of implementation and levels of effectiveness. The study also sought to ascertain administrator and school improvement specialist perceptions of how PLCs affect their schools. Finally, this study described teachers' suggestions to enhance their PLC experience and identified challenges that hindered the implementation of PLCs.

Data were developed via survey and semi-structured interviews. The study population consisted of 211 teachers and administrators. Respondents ($N=98$) were from three elementary schools and one K-8 school. Teachers reported PLC implementation levels as "some of the time" and "most of the time" and judged them to be "somewhat effective" and "effective" in improving student learning. Levels of implementation were not significantly different based on organizational structure of the school, or on the grade/developmental level, or sex of the participant. The correlation between levels of implementation and levels of effectiveness was significant and strong.

Logistical suggestions such as scheduling and PLC composition and additional training were the strategies most often suggested to enhance the PLC experience. The most frequently listed challenges to implementation of PLCs were time constraints, teacher accountability, and negative attitudes of teachers participating in PLCs.

CHAPTER ONE:

INTRODUCTION

Research exists on the effectiveness of Professional Learning Communities (PLCs) and the positive results that a collaborative culture provides for increasing student achievement. DuFour (2004) suggested that the term has been so overused by naming any assortment of professional groupings from state boards of education to grade level committee members as PLCs, educators are in danger of making the term meaningless. To ensure that PLCs continue to be effective, educators must adhere to the primary attributes of PLCs: they are learning-focused, collaborative, and results-driven (DuFour, 2004). Remaining true to characteristics provides more credibility to the term and reaffirms participation in a PLC will be beneficial to participants, students, and schools.

The implementation and development of PLCs throughout school districts. PLCs and the cooperative relationships and collaborative culture they build are often found in schools with high student performance. Ascertaining if the presence of a PLC is the root cause of success is difficult, but the defining characteristics of PLCs enhance both teacher and student performance in a school (Stoll, Bolam, McMahon, Wallace, & Thomas, 2006). In support of PLCs, Michael Fullan (n.d.) noted, "Privacy of practice produces isolation; isolation is the enemy of improvement." Many factors are important to consider when transitioning from a low-performing school to a high-performing school; however, Dylan Wiliam (2007-2008) said "Teacher learning communities appear to be the most effective, practical method for changing day to day classroom practice". Creating a collaborative culture and establishing PLCs go hand in hand when seeking to improve schools.

Although learning communities are very effective at changing the status of schools, they can not be haphazardly formed if they are expected to sustain the challenges of school reform (Supovitz & Christman, 2003). Professional Learning Communities are a valuable piece of the puzzle, but the underlying factor that can make or break a PLC is the climate and culture of the school. Effective PLCs are the product of a positive school climate and a culture of learning. When looking at how to move schools from low-performing to high-performing function, the issue at hand then seems to be not only how to establish effective PLCs, but also how to positively influence the attitudes and perceptions of teachers in low-performing schools to build a culture and climate that are similar to those found in high-performing schools. Additionally, what is the role of the administrator in this process? School leaders must create a balance between building the relationships and making sure that the stakeholders are concentrating their efforts in a common direction (Fullan, n.d.). In establishing this culture of learning, effective PLCs become a reality; therefore, those schools that participate fully reap the benefits.

In West Virginia, schools that meet the criteria for persistently low-performing schools have an opportunity to apply for and receive School Improvement Grants (SIG). These grants are designed to provide funds for the school to use to support the improvement process. Two rounds of schools were designated as SIG schools, Tier I and Tier II. The West Virginia Department of Education (WVDE) defined persistently low performing as those schools exhibiting a lack of progress in the All subgroup in reading and math on the annual state assessment, WESTEST. Tier I schools included the five lowest-achieving Title I schools in the state. In determining the Tier II schools, WVDE identified the secondary schools that are eligible, but do not receive Title I funds, and are among the lowest 5% of secondary schools. The WVDE utilized guidelines from *Guidance on School Improvement Grants under Section 1003(g) of the Elementary and*

Secondary Act of 1965 (West Virginia Department of Education, n.d.) to establish criteria for awarding grants. The SIG improvement cycle ended in the 2013-2014 school year as West Virginia initiated a new accountability designation system for schools.

Schools that were identified and received the SIG funds have been supported by the West Virginia Department of Education through professional development in the improvement process, technical guidance, and monitoring of each school's improvement plan and progress. Each school developed a plan unique to its own needs; however, each school was required to include particular mandated requirements in its plan. One mandate was to implement and sustain PLCs in the SIG schools. Guidance and training were provided to school teams by the WVDE. This guidance relied heavily on the research and work on PLCs by Richard and Rebecca DuFour.

Professional development becomes important to the teacher when it occurs as a job-embedded opportunity for growth and is not seen as "add-on" inservice (Kruse, 1993; Louis, 2006). PLCs offer this type of professional development within a job-embedded context. Successful learning communities evolve over time by building professional relationships with a focus on doing what is best for students instead of focusing on personal issues. Schools that value and nurture this type of teacher development are catalysts for considerable and long-lasting school reform (Lieberman, 1995a). Teachers that value self-improvement and professional growth are assets to this cycle of climate, culture, and collaboration.

Trading the isolation model of teaching for a collaborative model establishes demands for collegiality among faculties and joint efforts among teachers to create a productive working environment for both the teachers and students in a school. Creating an atmosphere of collegiality is critical to the success of PLCs. Principals play a key role in helping schools establish this atmosphere through the utilization of high expectations and a commitment to focus

on student and teacher learning (Hord & Hirsh, 2009; Smith, Wilson, & Corbett, 2009). They also provide support and resources throughout various stages of implementation.

Traditional models of professional teacher development typically consist of gathering a group of teachers to listen to an expert disseminate information and strategies that teachers are to take back to their classrooms and use. This model of professional learning has its place in education, but a more student-focused form of professional development for teachers is being delivered through the implementation of PLCs (Wiliam, 2007-2008). This shift in thinking has brought PLCs to the forefront of professional development by promoting high-quality teacher development sessions that allow teachers to transform their teaching (Darling-Hammond, 2009.)

Successful implementation and participation in a PLC provides positive outcomes for both teachers and students. For teachers, participating in PLCs provides them an outlet to reduce isolation by providing opportunities to work with colleagues and focus on student progress and performance (Lieberman, 1995). Participation in a PLC also allows teachers to communicate with colleagues and transform their teaching through the reflection of ideas and observations from others. Teachers thriving in this type of collaborative environment design engaging lessons that establish high expectations for students and that provide more student learning, less student absenteeism, and lower achievement gaps in content areas (Hord, 1997). Many researchers and professionals (Many, 2009; Louis, Kruse, & Raywid, 1996; Saphier, 2005) in schools have contributed to the body of knowledge concerning PLCs and they generally agree that PLCs are an effective way to increase teacher and student performance. PLCs provide a vehicle for improving instruction; professional growth in teachers and academic success result not from the structure of the PLC, but rather from the work that occurs because of the structure (Peterson, McCarthey, & Elmore, 1996).

The research available on PLCs in West Virginia is sparse. The only major study to date was conducted by Brucker (2013). This study focused on the implementation and effectiveness of PLCs in the largest school district in West Virginia. The study was conducted after a district-wide mandate was in place for all schools to utilize PLCs.

In summary, research indicates that PLCs contribute to a variety of positive outcomes for schools. Student achievement and teacher performance are affected by the implementation and sustained involvement in PLCs (Cowan, 1999). PLCs break down traditional barriers of isolation and reinvigorate schools with a focus on continuous improvement through communication and collaboration. This type of interaction cultivates an atmosphere of success for students and teachers which transforms low-performing schools into high-performing schools with a focus on learning, results, and a collaborative culture (Rentfro, 2007).

Problem Statement

A substantial body of research indicates that PLCs can positively affect teacher and student performance. However, this research has not generally been focused on low-performing schools. Beginning in 2009, PLCs were mandated to be implemented in West Virginia's lowest-performing schools that received support through the School Improvement Grant program. To date, no systematic study of the implementation and effectiveness of PLCs has been performed in these low-performing schools. Therefore, the purpose of this study was to determine the level of implementation of PLCs in improvement schools. Next, the study sought to determine the perceived effectiveness of PLCs in these schools. In addition, the study investigated any differences in levels of implementation and effectiveness based on selected independent variables (age, teaching experience, grade level of instruction, organization of PLC, and gender).

Finally, the study examined barriers and enhancements that may affect the implementation and effectiveness of PLCs.

Research Questions

Specific research questions which guided this study included the following:

1. What is the current **level of implementation**, as perceived by teachers, administrators, and School Improvement Specialists, of PLCs in improvement schools in West Virginia?
2. Based on specific PLC characteristics, how has the level of implementation of PLCs affected particular schools?
3. What **differences**, if any, exist **in the implementation levels**, as perceived by teachers, of PLCs in improvement schools in West Virginia, based on selected independent variables?
4. What is the **level of effectiveness**, as perceived by teachers, administrators, and school improvement specialists, of PLCs in improvement schools in West Virginia?
5. Based on specific PLC characteristics, how has the level of effectiveness of PLCs affected particular schools?
6. What **differences**, if any, exist **in the effectiveness levels**, as perceived by teachers, of PLCs at improvement schools in West Virginia, based on selected independent variables?
7. What are teachers' and administrators' suggestions to enhance their experience with PLCs?
8. What are teachers' and administrators' greatest challenges with PLCs?

Operational Definitions

The following operational definitions were used to guide this study:

Teacher-perceived level of implementation - individual indicator items: an individual teacher's perception of level of implementation of individual PLC indicator items as measured by teachers' responses to individual items on the *Implementation and Effectiveness of Professional Learning Communities Survey,* using the 5-point descriptive scale (1 – never, 2 – infrequently, 3 – some of the time, 4 – most of the time, and 5 – all of the time) provided for each indicator item included in Part B of the survey instrument.

Teacher-perceived level of implementation - indicator item categories: an individual teacher's perception of level of implementation of individual PLC indicator items as measured by teachers' responses to individual items on the *Implementation and Effectiveness of Professional Learning Communities Survey,* using the 5-point descriptive scale (1 – never, 2 – infrequently, 3 – some of the timed, 4 – most of the time, and 5 – all of the time) provided for each indicator item included in Part B of the survey instrument. Individual category implementation level scores will be calculated by summing the responses to the three individual indicator items in each category.

Teacher-perceived total level of implementation: an individual teacher's perception of level of implementation of individual PLC indicator items as measured by teachers' responses to individual items on the *Implementation and Effectiveness of Professional Learning Communities Survey,* using the 5-point descriptive scale (1 – never, 2 – infrequently, 3 – some of the time, 4 – most of the time, and 5 – all of the time) provided for each indicator item included in Part B of the survey instrument. Individual total implementation level scores will be calculated by summing the responses to each of the 21 individual indicator items in Part B of the survey instrument.

Administrator/specialist-perceived level of implementation of PLCs: an individual administrator or school improvement specialist's perception of how the level of implementation of PLCs has affected PLC characteristics within the school as indicated during personal interviews using the Administrator/School Improvement Specialist Protocol.

Teacher-perceived level of effectiveness - individual indicator items: an individual teacher's perception of level of effectiveness of individual PLC indicator items as measured by teachers' responses to individual items on the *Implementation and Effectiveness of Professional Learning Communities Survey,* using the 5-point descriptive scale (1 – not effective, 2 – of little effectiveness, 3 – somewhat effective, 4 – effective, and 5 – very effective) provided for each indicator item included in Part C of the survey instrument.

Teacher-perceived level of effectiveness - indicator item categories: an individual teacher's perception of level of effectiveness of individual PLC indicator items as measured by teachers' responses to individual items on the *Implementation and Effectiveness of Professional Learning Communities Survey,* using the 5-point descriptive scale (1 – not effective, 2 – of little effectiveness, 3 – somewhat effective, 4 – effective, and 5 – very effective) provided for each indicator item included in Part C of the survey instrument. Individual category effectiveness level scores were calculated by summing the responses to the three individual indicator items in each category.

Teacher perceived total level of effectiveness: an individual teacher's perception of level of effectiveness of individual PLC indicator items as measured by teachers' responses to individual items on the *Implementation and Effectiveness of Professional Learning Communities Survey,* using the 5-point descriptive scale (1 – not effective, 2 – of little effectiveness, 3 – somewhat effective, 4 – effective, and 5 – very effective) provided for each indicator item

included in Part C of the survey instrument. Individual total effectiveness scores will be calculated by summing the responses to each of the 21 individual indicator items in Part C of the survey instrument.

Administrator/specialist-perceived level of effectiveness of PLCs: an individual administrator or school improvement specialist's perception of how the level of effectiveness of PLCs has affected PLC characteristics within the school as indicated during personal interviews using the Administrator/School Improvement Specialist Protocol.

Organizational structure of teachers' professional learning community: the type of PLC to which the teacher belongs as measured by teachers' responses to the demographic item regarding organizational structure on the *Implementation and Effectiveness of Professional Learning Communities Survey*. Teachers' choices were: grade level, subject/department, team, or school-wide PLC.

Total years of teaching experience: this term describes teaching experience in number of years, as measured by teachers' responses to the demographic item regarding experience on the *Implementation and Effectiveness of Professional Learning Communities Survey*. Teachers responded with their number of total years of full-time teaching, including the current year.

Grade/developmental level taught: the grade or developmental level of students measured by teachers' responses to the demographic item regarding level of teaching on the Implementation and Effectiveness of Professional Learning Communities Survey. The choices provided were elementary school, middle school, and high school.

Sex: teachers' responses to the demographic item regarding sex on the *Implementation and Effectiveness of Professional Learning Communities Survey*; choices provided were male or female.

Significance of the Study

Many of today's professional development opportunities for teachers are focused on creating and sustaining effective professional learning communities. Numerous organizations in the educational arena and business community spend time and money on teacher education with the expectation that increased teacher knowledge leads to improved academic performance for students. The literature has suggested that establishing professional learning communities in schools can be one of the most powerful and effective methods of staff development for teachers. Participation in a PLC provides job-embedded continuous learning for professionals and focuses on reaching the goals of the school through collaboration instead of isolation. Information gleaned from this study will provide data that will substantiate or invalidate the need for continued allocations of money and time to improving PLCs throughout the state.

Results of this study will also provide administrators with a tool for assessing site-based needs for building, improving, and sustaining effective PLCs. Additionally, many teacher preparation programs still depict a lone teacher in a classroom, promoting information to students. This study may provide valuable information for teacher candidates on the importance of entering the profession with a quest for inquiry and the expectations of continuous learning opportunities. Establishing this mindset in new teachers will help build the atmosphere of collaboration needed to sustain PLCs. Finally, the abundance of research on PLCs nevertheless provides no information specific to the current understanding and implementation status of PLCs in low-performing schools in West Virginia. For these reasons, this study will add to the current knowledge base within the literature.

Delimitations

This study was limited to the six SIG schools remaining in 2013-2014. The study provided a snapshot of teacher perceptions of those working in SIG schools during spring 2014. Interview information was provided by the administrators and School Improvement Specialists assigned to the SIG schools for the 2013-2014 school year.

CHAPTER TWO:

LITERATURE REVIEW

This chapter provides an examination of literature relevant to this study. The literature review is divided into four sections. Section one examines the background and development of PLCs. Section two describes common characteristics of PLCs. Section three reviews benefits and barriers associated with PLC implementations. Section four discusses research describing the implementation and effectiveness of PLCs.

PLC Background and Development

A substantial body of research exists on the topic of Professional Learning Communities. A basic Google search of the subject yields nearly 60 million results. Literature examines many aspects of PLCs, including what they are, how to establish them, what to do if they are not effective, and how to continue if they are effective, in addition to a variety of other areas within the topic. Top researchers in the field have agreed that implementing effective Professional Learning Communities in schools is common practice in high-performing schools and a driving force in changing low-performing schools into high-performing schools (DuFour, 2004; Marzano, 2003). Fullan (2005), a leader in the field, has noted that is that in times of school reform, "terms travel well", but the underlying concepts and understanding are not always implemented with fidelity. The result is that many schools are participating in what they believe are Professional Learning Communities; however, these PLCs are in name only as many of the key characteristics of PLCs are absent (Fullan, 2005). The following literature review provides answers to questions about professional learning communities based on existing research. It examines professional learning communities, the benefits and barriers of implementation of professional learning communities, the importance of understanding teacher perceptions of

professional learning communities, and common characteristics of successful professional learning communities.

As a result of decades of school reform and legislation demanding increased accountability, many school systems have turned to implementing professional learning communities as an effective way to meet student and teacher needs (Schmoker, 2005). The National Commission on Excellence in Education (NCEE) published *A Nation at Risk* in 1983, which ignited a number of innovative ideas to change educational practice (Archer, 2012). After the publication condemned schools for their failure to adequately teach America's youth, educational reforms were prevalent throughout the next decades. During this period in educational history, the concept of PLCs began to evolve.

Initially, the concept of PLCs was not widespread. Researchers studied characteristics found in high-performing schools and related them to the characteristics found in PLCs. A business model described in *The Fifth Discipline* (Senge, 1990) examined five areas critical to learning that are also critical to the successful implementation of PLCs. The areas include: systems thinking, personal mastery, mental models, shared vision, and team learning. As school systems began to feel the effects of the NCEE report, a focus on these areas became more common.

Additional school reform came in the 2001 with the adoption of *No Child Left Behind* (NCLB). This mandate stated that the needs of every child must be met through public education and resulted in increased accountability of public schools in America. With a renewed focus on improving education, educators and researchers examined characteristics of successful schools and found many characteristics of PLCs. This examination of successful schools and their practices proved that students' needs could be met resulting in higher student achievement

(DuFour, 2004; Hord & Sommers, 2008, Wood, 2007). This research, along with the growing body of literature supporting the implementation on PLCs caused a quick increase in the number of schools implementing PLCs as a way to improve (Hannaford, 2010; Hord & Sommers, 2008; Pierce, 2010; Wood, 2007). Multiple calls for reform and increased scrutiny on schools have led to the implementation of PLCs as an effective strategy to improve teaching and learning in schools. PLCs force an examination of practice with a focus on results and emphasis on team learning and collaboration. Wood (2007) asserted that these attributes of PLCs support professional growth, have been associated with improved school performance and also provide a form of authentic professional development for teachers.

Professional learning communities are defined as a group of educators, always striving to meet their own full potential, maximizing student learning by working together to learn, grow, and improve their own professional practice (Hall, 2008). In the book, Professional Learning Communities at Work, the authors describe the three primary attributes of professional learning communities: focus on learning, collaborative culture, and results-oriented action (DuFour & Eaker, 1998). When a school's staff works together as a professional learning community, collaborative teams work together to achieve common goals. Members take action to engage students in the classroom and increased student achievement is the result (DuFour, 2006).

The implementation of Professional Learning Communities as a mode of professional development for teachers has increased in recent years. Researchers have found that PLCs are the least expensive, greatest, most professionally rewarding way to improve schools (Schmoker, 2005). In response to increased accountability standards and other issues concerning school reform, leaders have sought after ideas or programs that would provide them with the answer to the question of how to improve schools. Leaders in research concerning professional learning

communities realize that shift in thinking must occur first. A paradigm shift from working in isolation to collaboration has caused school leaders to reconsider the ways that teachers learn best to better their practice. Professional learning communities allow teachers to learn through collaboration with other teachers in a manner that is best for their practice and that increases student achievement. Often in the past, teachers or school leaders believed that teachers need additional training or a new program to achieve the results that were desired (Schmoker, 1999). Instead, Schmoker (1999) has noted that productive collaboration, characterized by frequent, precise, and continuous conversation among groups of teachers has provided impressive results in classrooms and in schools.

An element that is critical in the effectiveness of professional learning communities is making sure they are implemented correctly. Many schools and school districts have overlooked this step when claiming that PLCs are present in their building or district. In fact, school leaders must be deliberate in their efforts to build the capacity for effective PLCs to be implemented in schools (Thessin & Starr, 2011). There must be support modeling at the district level as well as support from building administrators to ensure successful implementation of professional learning communities. Providing time for teachers to collaborate with the expectation that they know how to collaborate is not enough without proper guidance and support. Otherwise, administrators may have groups of well-intentioned individuals meeting without precise focus or the ability to analyze data, create common assessments, or plan lessons with the desired outcomes.

PLCs are groups of educators who meet repeatedly to determine the specific learning needs of their students and share strategies to address students who are not successfully meeting these goals (Schmoker, 2005). A culture of collaboration must exist in order for teachers to be

able to effectively address student learning. This culture of collaboration must be comprised of teachers committed to the mission of addressing student achievement who have a willingness to share examples of practice and participate in reflective conversation (Scribner, Cockrell, Cockrell, & Valentine, 1999). PLCs were originated on the premise that teacher leaders and principals would provide direction to participants (Flynn, 2010). Time for meeting is built into the school day and school calendar with each meeting focusing on an area of instruction.

PLCs provide a structure for schools to improve student achievement and are founded on the idea that professional development for teachers results in improved practice that leads to the maximum increases in student achievement (DuFour, DuFour, & Eaker, 2008). PLCs have quickly became a very popular tool for school reform (Hickman, Schrimpf, & Wedlock, 2009).

Theoretical Framework

The goals of PLCs can be linked to the foundation of the progressivism theory of education. Foundational tenets of progressivism are based on the idea that people work together to solve problems, hence the collaborative nature of successful PLCs (Dewey, 1929). Social constructivism is one outlet of progressivism that more closely resembles the framework of PLCs (Counts, 1932). Social constructivism is apparent in PLCs that encourage teachers to work together to analyze information and construct new meaning to solve problems in classrooms, schools, and eventually in society.

Social constructivism emphasizes the need for collaboration among students and relationships among teachers (Bunker, 2008; Gredler, 1997; Lave & Wenger, 1991; McMahon, 1997). This theory encourages communities of practice to reach learning goals and acknowledge that teachers are unique with previously constructed knowledge and experiences.

Educational theory attempts to answer the following four basic questions with regard to education: (a) What is the purpose of education?, (b) What is the content of the school curriculum?, (c) What is the place of students?, and (d) What is the role of teachers? (Newman, 2006). Teachers construct this knowledge through their participation in PLCs. In order to develop effective PLCs, teachers must be allotted adequate time to build new theories and understandings (Jones, 2010). PLCs offer teachers time and a setting to formulate and reflect on new ideas.

Characteristics of PLCs

Top researchers in the field have agreed upon seven essential characteristics of Professional Learning Communities (DuFour, Eaker, & DuFour, 2005; Fullan, 2001; Hannaford, 2010; Hord & Sommers, 2008). These characteristics include shared leadership, shared mission, collaboration, collective inquiry, action orientation and experimentation, continuous learning, and results orientation (Hannaford, 2010).

Shared Leadership. Shared leadership is all participants having an opportunity to participate in the responsibilities and decision-making within a school (DuFour, Eaker, & DuFour, 2005). Shared leadership is a shift in thinking that the principal is the lone leader in the school. Shared leadership is centered within teams in which the members contribute to the group (Marzano, Waters, & McNulty, 2005). The principal's leadership role is pivotal in that he or she must create an environment of support for teachers as they work together to share responsibilities (Wilhelm, 2010).

The principal builds the structure of the school community. A supportive principal is paramount in the success of PLCs (Neuzil, 2010). His or her role fosters increased communication and sets the expectation for those participating in the PLCs. Seashore, Louis, and

Wahlstrom (2011) have claimed that shared leadership is an important component in developing PLCs to encourage new ideas that will increase student achievement. Research has revealed that teachers gain a greater sense of responsibility for the school's goals when the principal supports their initiatives and practices shared or distributed leadership. Effective schools research has revealed that successful change arises when leadership roles are shared with teachers (Lezotte, 2005). Shared leadership promotes a collaborative culture that is the basis for successful PLCs. Huffman and Jacobson (2003) established that the leadership style of the principal and the perceived success of PLCs in a school share a substantial connection. Principals who encourage shared leadership are more successful in promoting effective PLCs. Principals who are active in building a school culture that implements PLCs attain greater increased teacher development (Mullen & Hutinger, 2008).

Shared Mission. Shared mission is defined as the members of an organization sharing a commitment to the fundamental goals of an organization. This critical characteristic of professional learning communities provides answers to the questions of how educators will reach their goal and also answers why they are working toward that goal (DuFour, DuFour, & Eaker, 2008).

Creating effective PLCs requires professionals to assume responsibility beyond their own classroom walls. They must be willing to share information and practices with others while focusing on results (Seashore, Louis, & Wahlstrom, 2011). The knowledge of teachers is vital when shared with colleagues. This practice of collaboration and sharing of ideas will promote a common goal and shared mission among teachers in a school, resulting in a culture open to sharing and to greater teacher and student learning.

A shared mission is a significant benefit to the collaborative nature that the implementation of PLCs can effect in a school environment. PLCs facilitate a sense of shared commitment focusing on student achievement and reaching common goals for student learning (Sharpe, Reiser, & Chase, 2010; Sparks, 2005).

Collaboration. Collaboration is the process of working together systematically as a cohesive unit to improve individual and group practices (DuFour, DuFour, & Eaker, 2008). In PLCs, collaborative practices are focused on student learning. Collaboration is essential in order for educators to establish desired outcomes and set baselines for student progress (Reeves, 2006). Educational literature is full of models of research concerning school cultures that are successful in their reform efforts because of collaboration (Waldron & McLeskey, 2010). In order for these reform efforts to be maximized, teachers must be taught the process of engaging in meaningful, collaborative discourse (Hanson, 2010).

Collaboration is a shift from isolation to a structured process for working together as a team to improve instructional practice (DuFour, Eaker, & DuFour, 2005). The collaborative process is not automatically known. In order to collaborate effectively, the process must be taught and teachers must be supported in this effort (Thessin & Starr, 2011). As noted by Schmoker (2005) PLCs emphasize the collaborative process that is instrumental in improving teaching and learning. Collaboration is also a vehicle for increasing teacher morale as a result of the support provided by colleagues.

Historically, teaching has been done in isolation rather than as a team working toward a common goal. Neuzil (2010) credited Fullan with raising the issue of the success of autonomy in today's classrooms, indicating that working in teams leads to successful relationships and ultimately to student achievement. Teachers experience isolation in the classroom and this

isolation fosters a barrier to building effective collaborative relationships that can be an effective and authentic platform for embedded professional development for professionals. (Morgan, 2010). Collaborative relationships among teachers often lead to school improvement because teachers who work collectively recognize the benefit of collaboration and of working as a group with a shared mission rather than struggling through scattered individual efforts (DuFour, 2004).

The concept of teacher teams reduces the sense of competition among teachers. Teachers are often territorial and focused on issues immediately pertaining to them. Collaboration allows and promotes the celebration of team successes and failures that is beneficial to building an open and effective collaborative relationship among stakeholders (Hord, 1997). Successful schools embrace teams and encourage relationships as an essential tool for changing the school culture to one that celebrates collaboration instead of isolation (Fullan, 2001).

Collective Inquiry. Collective inquiry is the process by which groups establish the questions they will examine as a group. In PLCs, collective inquiry is the basis for shared knowledge among the group as the members continue to work toward achieving results (DuFour, DuFour, & Eaker, 2008). The foundational concepts of PLCs can be attributed to Dewey's idea of collective inquiry (1929) and Schaefer's schools as centers of inquiry (1967). PLCs serve as a platform for job-embedded and sustained professional development for teachers by offering them a venue for self-reflection of practice and collaboration opportunities with colleagues. Teachers must make use of their combined knowledge and experience and share with one another (DuFour, Eaker, & DuFour, 2005). The Annenberg Institute for School Reform (2004) indicates that academic achievement and teaching practice have a strong relationship. The effectiveness of instructional delivery is dependent upon the continued professional development that teachers receive. Effective professional development is described as authentic. This means it is practical

and job-embedded. The Annenberg report acknowledges PLCs as an effective form of professional development for teachers.

Action Orientation and Experimentation. Action orientation and experimentation is simply learning by doing. Members of PLCs realize that learning ensues when engagement is high. Through this belief, members of PLCs serve as catalysts for change within a school (DuFour, DuFour, Eaker, & Karhanek, 2004).

Teachers should be ready to try new approaches while acting on their current beliefs and maintaining a focus on student results (Hannaford, 2010). Hannaford explained that PLCs offer a protected environment that encourages action and experimentation in the pursuit to improve student learning. Lezotte (2005) cited PLCs as an example of effective schools research in action in which teachers are willing to embrace school reform to improve student learning. Encouraging action orientation and experimentation provides the practice that teachers need as a foundation for collaborative conversation in PLCs to achieve the desired results (Hord & Sommers, 2008). Discussions within the PLC lead to the first step for further action and reflection. Hord and Sommers (2008) concluded that it is not the initial experience that is the learning point; instead, it is the reflection and conversation that follows the experience that fosters the most learning.

Continuous learning. Continuous learning is the process by which plan, do, check, and act to achieve desired results. This process is cyclical and provides members of PLCs a systematic way to constantly monitor progress in student learning. Hord & Sommers (2008) further defined continuous learning as the practice of using every opportunity and experience to learn something new. The model of PLCs was not included in the original effective schools research; however, continuous learning is reinforced by effective schools research (Lezotte, 2005). Lezotte (2005) has maintained that as PLCs advance and become more mature they offer

an opportunity for continuous learning and a nurturing environment for professional discourse and reflection.

Results orientation. Results orientation is having a focus on outcomes instead of intentions or inputs. Members of Professional Learning Communities are determined to achieve results and seek evidence that their practices are effective in increasing student learning (DuFour, DuFour, & Eaker, 2008). Members of a PLC must realize the work they do in the PLC will be assessed on the outcomes of their efforts. Results orientation is the practice of knowing what students need to learn, knowing what is learned, and knowing what to do about those who have not learned (DuFour, Eaker, & DuFour, 2005). DuFour, Eaker, and DuFour (2005) argued that many groups that call themselves PLCs are not truly PLCs because student learning is not the primary focus. Effective PLCs must focus on review and analysis of student work with plans for modifications to facilitate future instruction (Schmoker, 2005). On-going analysis of student learning is critical for teachers and is reinforced through collaborative conversation with colleagues (Stiggins & DuFour, 2009).

Teachers' Beliefs

Examination of school improvement practices found that the act of teachers cooperatively evaluating student work is essential to teaching and learning. Traditionally, teachers reviewed student work in isolation; however, researchers have noted that the impact on teacher practice and student learning is positive when teachers engage in the activity collectively through input and inquiry with colleagues (Little, Gearhart, Curry, & Kafka 2003).

Teachers are often the most significant factor to implementing reform efforts in schools. As the central figure in determining the success or failure of implementing professional learning communities, researchers must examine how teacher beliefs affect said implementation.

Professional learning communities can play a critical role in high-quality instruction and student achievement. Properly implemented professional learning communities provide educators with the tools they need to work together effectively, affirming mutual accountability, collaboration, and autonomy (Muirhead, 2009). Many times, an educator's desire for autonomy has undermined the need for professional collaboration, resulting in isolated classrooms and develops a solitary approach to teaching and student learning. As educators participate in professional learning communities, they experience opportunities for positive collaboration. This experience promotes working together to maximize resources in order to improve instruction and student achievement. The format of professional learning communities gives educators the chance to share with their colleagues the skills and knowledge that students need to understand in order to become successful in the future (Reeves, 2005).

Hannaford's (2010) study of teachers' perceptions of professional learning communities discovered that teachers held positive beliefs about improving their instruction; however, if teachers do not have confidence in the methods of reform they are asked to participate in, those reforms often fail, resulting in lack of trust between educators and administrators, lower morale, and increased isolation (Hannaford, 2010; Karaagac & Threlfall, 2004). In order to prevent failure, administrators must ensure that the school infrastructure is set up for professional learning communities to provide opportunities for educators to collaborate, provide guidance and clear expectations, and support a culture that embraces this type of professional growth. Unless educators deem this type of professional development as beneficial to their own practice and improvement of student achievement, implementation of professional learning communities will not be successful or sustainable (Lezotte, 2005; Schmoker, 2005).

Benefits and Barriers of PLCs

Effective professional learning communities have the potential to provide benefits for both students and educators (Many, 2008). As educators become more committed to the professional learning communities in their schools, a team culture evolves with focus on creating a classroom environment that has been designed for student learning rather than one that exists in isolation. Other benefits to educators include shared responsibility for student success, increased meaning and understanding of the content, higher morale, lower absenteeism, and commitment to making changes systemic (Dufour, DuFour, & Eaker, 2008). Benefits for students include decreased dropouts, lower absenteeism, larger academic gains, and smaller gaps in achievement between students in different subgroups (DuFour, DuFour, & Eaker, 2008; Hord, 1997).

Researchers in the field of professional learning communities Richard DuFour, Rebecca DuFour, and Robert Eaker have led the way for others to learn about and implement professional learning communities. Their many works, including *Professional Learning Communities at Work* (1998), *Learning by Doing* (2006*), Revisiting Professional Learning Communities at Work* (2008), and others have laid the foundation for numerous other researchers to collaborate with them and produce additional material to add to the body of literature that exists concerning professional learning communities.

The book *On Common Ground: The Power of Professional Learning Communities* (2005) is one example in which lead researchers are the editors to a host of well-known educators and educational researchers who provide their insight regarding professional learning communities. In this book, supporters of professional learning communities include the following educators: Roland Barth, Michael Fullan, Lawrence Lezotte, Douglas Reeves, Jonathon Saphier, Mike Schmoker, Dennis Sparks, and Rick Stiggins. The list of prominent supporters of professional learning communities continues in the book *Revisiting Professional*

Learning Communities at Work: New Insights for Improving Schools (2008). In addition to those advocates mentioned earlier, this text also includes insight from Robert Marzano, Thomas Many, Tom Sergiovanni, Linda Darling-Hammond, Charlotte Danielson, and Dylan Wiliam just a few of the numerous "system thinkers in action" that influence the work of this text (Fullan, 2005).

In West Virginia, research on PLCs in low-performing schools has been minimal. One study focusing on the implementation and effectiveness has been completed (Brucker, 2013); however, the study concentrated on only one school district in the state. The study combined all schools in the district regardless of measured academic progress. As stated earlier, PLCs and their driving attributes are common among high-performing schools. This study will focus on the effects of implementing this best practice in the persistently lowest performing schools in West Virginia. The information gained in that study as well as the other research on PLCs is necessary to examine continued best practices in schools. It is imperative that we take this information and apply it to the low-performing schools in West Virginia to evaluate the progress and effects of implementing PLCs into these environments.

Brucker (2013) found that overall, teachers in the schools in the study perceived PLCs to be effective and indicated that PLCs occurred in their school "some of the time" or "most of the time". Teachers indicated that PLCs in their schools were "somewhat effective" and "effective". Further, the study indicated that barriers to PLCs included time, pre-decided content, training, and interpersonal relationships.

Benefits. Hannaford (2010) concluded that successful implementation of professional learning communities provides a number of benefits to those individuals and school systems participating in them. Benefits include leadership opportunities for teachers, positive impact on school culture through strengthening bonds among the teachers within the school or school

system, and additional support for adult learning (Brucker, 2013). Additional benefits listed by the U.S. Department of Education include: improved attendance, support of school improvement efforts, minimized feelings of isolation among staff, increased job fulfillment, increased confidence, mutual accountability for student performance, and stronger commitment to the school (Professional Learning Communities, 2011). Research has steadily supported claims that professional learning communities are important factors in instructional improvement and school reform; thus, the implementation of PLCs in low-performing schools is necessary to improve the school (Little, 2001). Additionally, researchers found that in schools exhibiting a true sense of community, an increasing sense of job satisfaction led to increased work efficacy and greater collective responsibility for student learning (Louis, 1995).

Although multiple benefits to the implementation of PLCs exist, the most common benefit discussed in the literature is the collegiality that empowers teachers to do their job well. PLCs have been found to be an influential tool used to increase student achievement. Teachers believe that they learn more from their peers than any other source (Williams, 2013). Williams established that along with increased student achievement, PLCs also provide a vehicle for improving teacher quality.

Linder, Post, & Calabrese (2012) studied the implementation of PLCs in community schools with the intent of forming university-school partnerships. The researchers recognized these characteristics as leading to successful PLCs: a sense of community, the determination of content and direction of the meetings by teachers, and leadership. The researchers were also members of the education faculty at a university and were seeking to identify factors of success in order to facilitate the implementation of successful PLCs in the schools in the study while also building positive relationships with teachers. Linder, Post, and Calabrese mentioned that one of

these primary factors leading to successful PLCs is that teachers want to be accountable for their own learning. This autonomy will help them buy into the reform because they do not want to be micromanaged by administration.

Barriers. As Professional Learning Communities become more predominant in school systems, more evidence of obstacles to attaining successful implementation of PLCs is apparent. Time and teacher participation (or "buy-in") are two of the most common obstacles to successful implementation. Effective leadership plays a critical role in overcoming these obstacles for implementing and later sustaining PLCs (Dove & Freeley, 2011). The Annenberg Institute of School Reform (2004) listed several other hindrances to optimal PLC success including: teachers' hesitancy to share, lack of leadership, undocumented success, and issues concerning teacher trust and quality. Implementation and sustainability of professional learning communities creates a challenge for educators and administrators (Fullan, 2005). Many schools claim to have professional learning communities as a form of professional development, but in reality these schools fail to create and maintain a school culture where learning communities are valued. The demanding daily schedules of educators and administrators lead them to place a high value upon their time. Thus, they must view any efforts to establish additional responsibilities as a high priority in order for them to prioritize their time and allow the opportunity for professional growth to take hold and become a part of the school culture (DuFour, Eaker, & DuFour, 2005).

Obstacles preventing implementation of PLCs are many. Some of the most commonly reported ones include: lack of teacher participation and constraints involving resources such as a lack of time. Lack of sufficient time to meet and collaborate was often mentioned as a barrier to the level of implementation of PLCs (Lujan & Day, 2010; Marley, 2010; Maslow, 2008; Sutor,

2010). Lujan (2009) identified several barriers to the implementation of PLCs: not enough time, lack of understanding of what a PLC is and what it can do, and teacher negativity.

Teachers are often inundated with numerous responsibilities which leave them overwhelmed. Although teachers believe collaboration is important they have little time or energy to participate in this practice (Maslow, 2008). Hughes-Hassell, Brasfield, and Dupree (2012) reiterated that insufficient amounts of time and growing lists of responsibilities have a damaging influence on the successful implementation of PLCs.

An issue that must be addressed in the implementation of PLCs is that of teacher turnover and new hires. This is a critical issue that must be addressed in all schools, but particularly in low-performing school where turnover rates are often greater than high-performing schools. Building relationships is a process and it takes time to make positive connections among PLC members (Reynolds, 2008).

Implementation and Effectiveness of PLCs

Research has often demonstrated that teachers' instructional practice is improved when they are able to participate in effective professional development. PLCs are examples of this type of professional development, as they are job-embedded, sustained with a focus on reflection, and collaboration, and results-oriented. *On Common Ground: The Power of Professional Learning Communities* is a collection of thoughts from leading experts on PLCs that has been identified as the best book for professionals (Ioertscher & Rosenfeld, 2007). These expert educators concurred that PLCs are a powerful tool for school reform through improved professional development of teachers that leads to increased student achievement. Some of those authorities listed in *On Common Ground* who support PLCs are: Barth, Castenell, Delpit,

Rebecca DuFour, Richard DuFour, Eaker, Eason-Watkins, Fullan, Glickman, Hilliard, Hirsh, Jordan, Lezotte, Marzano, Reeves, Saphier, Schmoker, Sparks, Stiggins, Wagner, and Wise.

Another significant text, *Revisiting Professional Learning Communities at Work* (DuFour, Eaker, & DuFour, 2005), offered summarizations of research validating the necessity to implement PLCs. This text cites such authorities as Annenberg Institute for School Reform, Bryk, Covey, Cravens, Darling-Hammond, Drucker, Elliott, Fullan, Goldring, Handy, Hord, Joyce, Kruse, Louis, Merrill, Murphy, Newmann, Porter, Raywid, Seashore Louis, Senge, Showers, Sparks, and Wehlage. Schmoker (2005) added to this list of leading researchers who advocate PLCs with such names as: Calhoun, Darling-Hammond, Elmore, Joyce, Little, Lortie, McLaughlin, Newmann, Rosenholtz, Stigler, Talbert, Walk, Whelage, Wiggins.

DuFour, Eaker, and DuFour (2005) also credit the following organizations for their support of PLCs: the National Commission on Teaching and America's Future, the National Board for Professional Teaching Standards; the Interstate New Teacher Assessment and Support Consortium, the National Council of Teachers of Mathematics, the National Council of Teachers of English, the National Science Teachers Association, The Southwest Educational Development Laboratory, the National Education Association, the National Middle School Association, the National Association of Elementary School Principals, The National Association of Secondary School Principals, the National Staff Development Council, and the North Central Association Commission on Accreditation and School Improvement.

School systems spanning the country are beginning to understand the worth of this collaborative culture and professional development plans are now in place to provide time for teachers to function as a team (Hord & Sommers, 2008; Monroe-Baillargeon & Shema, 2010). With the goal of increasing student learning, a great deal of time and money is being devoted to

this model of staff development (Pierce, 2010). Teachers are hopeful that this model will increase student learning as well as provide professional growth to teachers (Langer, 2000; Lewis, 2002; Wood, 2007).

In a study of strategies used by successful PLCs findings showed that the implementation of PLCs increased both teaching and learning. Suggestions included the principles that schools make PLCs a priority, provide time for their growth and development, limit the paperwork, and intentionally plan for the assimilation of new members. Often the challenge of teacher turnover or new hires is not addressed by those implementing a PLC (Arroyo, 2011).

One way to help teachers connect research to practice is through participation in a PLC. Participation in a PLC improves both teacher practice as well as student achievement (Griffith, 2009). A study conducted in 2009 examined PLC implementation in an elementary school. The researcher, Griffith, observed that over time, teachers fully engaged in PLCs exhibited stronger commitment to the shared mission, and in turn, PLCs were more successful. Teachers believed that PLCs were a means to increase student achievement and overall school reform.

Summary

In summary, the vast body of current research on PLCs has outlined the basic tenets of PLCs, the benefits of PLCs, the barriers of PLCs, and the attributes of successful PLCs. Research has supported the use of PLCs as a best practice in schools across the nation and globe. The body of research focusing on PLCs in West Virginia is limited and even more so when examining the implementation and effectiveness of PLCs in West Virginia's lowest-performing schools. This study sought to add to the body of research that currently exists and to provide information concerning the implementation of PLCs as a tool for continuous school improvement.

CHAPTER THREE:

METHODS

This study assessed the levels of implementation and effectiveness of Professional Learning Communities (PLC) as they exist in schools on improvement status in West Virginia. The study also investigated the difference in perceived levels of PLC implementation and effectiveness based on selected independent variables: teaching experience, level of instruction, PLC structure, and sex. In addition, the study identified needed enhancements and challenges to implementing PLCs in School Improvement Grant (SIG) schools in West Virginia.

Research Design

The study used a mixed methods design (Johnson, 2004) including a cross-sectional descriptive survey of teachers and a semi-structured interview of building administrators and school improvement specialists (Fink, 2003). The survey collected data on the participating improvement schools at one specific point in time. In addition to the survey, building-level administrators and state or county school improvement specialists participated in a semi-structured interview examining each of the elements targeted in the survey.

Population

The population for this study consisted of teachers, administrators, and school improvement specialists in six improvement schools in West Virginia. During the 2013-2014 school year, West Virginia began a new accountability designation system which concluded the SIG identification and improvement process. The new accountability designations are Priority, Support, Focus, Transition, and Success. Six SIG schools remained in West Virginia in 2013-2014. Each of these schools was in the third and final year of the SIG improvement process. AT that time, schools that were identified as Priority using this new system began a new cycle of

improvement. Teachers, administrators, and school improvement specialists from these six remaining schools constituted the study population. The entire population was included in the sample. A list of these schools with their new designation is included in Appendix A.

Approximately 193 professional teaching staff and 12 administrators worked in these schools. Additionally, the West Virginia Department of Education assigned a school improvement specialist to each school (n=6). These three categories of professional employees provided a total population of approximately 211 subjects for participation in the survey or interview. The entire population of teachers was included in the survey. Eighteen School Improvement Specialists (SIS) and administrators were included in the interview population.

Instrumentation

Instruments used in this study included a self-report survey administered to teachers and an interview protocol used with administrators and School Improvement Specialists. Each of the instruments provided data on the implementation and effectiveness of PLCs.

Teacher Self-Report Survey. A modified version of the *Implementation and Effectiveness of Professional Learning Communities* survey (Brucker, 2013) was used to gather data about PLCs in the improvement schools (Appendix B). Permission to use the instrument was granted by Dr. Elizabeth Brucker, developer of the Implementation and Effectiveness of Professional Learning Communities survey. The survey consists of demographic data and two scales based on levels of perceived implementation and effectiveness of PLCs. The survey items are based on the seven characteristics of Professional Learning Communities: shared leadership, shared mission, collaboration, collective inquiry, action orientation and experimentation, continuous learning, and results orientation as outlined by Hannaford, (2010). Two open-ended

response items designed to gather data concerning barriers and suggestions for enhancing PLCs in the schools were also asked.

The internal consistency of the *Implementation and Effectiveness of Professional Learning Communities* survey instrument (Parts B and C) used in the Brucker study was assessed using Cronbach's alpha coefficient (Brucker, 2013). The alpha coefficients for the levels of implementation and effectiveness for each of the seven PLC categories and total levels of implementation and effectiveness were calculated. Reliability of the instrument was described according to the levels of acceptability found in Salkind (2004).

Brucker found the internal consistency *(r)* for the level of implementation for the seven PLC categories ranged from 0.882 *(M* = 11.28*, SD* = 2.93*)* for collective inquiry to 0.805 (*M* = 11.99, *SD* = 2.56) for shared leadership. The internal consistency for the total 21 implementation items was 0.962 (*M* = 82.38, *SD* = 16.16). These alpha coefficients indicate a desirable level of reliability (above 0.8) for each of the seven categories (Salkind, 2004). The internal consistency for the implementation total suggests a desirable level of reliability (above 0.8) overall for the implementation scale (Brucker, 2013).

Brucker's findings indicate the internal consistency (*r*) for the level of effectiveness for the seven PLC categories ranged from a 0.942 (*M* = 10.37, *SD* = 4.45) for shared mission to 0.858 (*M* = 10.28, *SD* = 4.28) for shared leadership. The internal consistency for the total 21 effectiveness items was 0.980 (*M* = 71.91, *SD* = 29.42). These alpha coefficients indicate a desirable level of reliability (above .8) for each of the seven categories (Salkind, 2004). The internal consistency for the effectiveness total suggests a desirable level of reliability (above 0.8) overall for the effectiveness scale (Brucker, 2013).

The internal consistency of the *Implementation and Effectiveness of Professional Learning Communities* survey instrument, (Parts B and C) used in the current study was assessed using Cronbach's alpha coefficient. The alpha coefficients for the levels of implementation and effectiveness for each of the seven PLC categories and total levels of implementation and effectiveness were calculated. Reliability of the instrument was described according to the levels of acceptability found in Salkind (2004). These data are provided in Table 1.

The internal consistency (*r*) for the level of implementation for the seven PLC categories ranged from 0.88 (*M* = 11.38, *SD* = 2.64) for shared mission to a low of 0.74 (*M* = 11.20, *SD* = 2.43) for collaboration. The internal consistency for the total 21 implementation items was 0.945 (*M* = 74.59, *SD* = 14.82). These alpha coefficients indicate a desirable level of reliability (above 0.7) for each of the seven categories (Salkind, 2004). The internal consistency for the implementation total suggests a desirable level of reliability (above 0.9) overall for the implementation scale.

The internal consistency (*r*) for the level of effectiveness for the seven PLC categories ranged from 0.94 (*M* = 10.43, *SD* = 3.15) for shared mission to 0.79 (*M* = 10.82, *SD* = 2.62) for results orientation. The internal consistency for the total 21 effectiveness items was 0.96 (*M* = 71.70, *SD* = 16.87). These alpha coefficients indicate a desirable level of reliability (above 0.7) for each of the seven categories (Salkind, 2004). The internal consistency for the effectiveness total suggests a desirable level of reliability (above 0.9) overall for the effectiveness scale. These data are provided in Table 1.

Table 1

*Cronbach's Alpha Coefficient for Instrument Reliability: Implementation and Effectiveness of PLCs**

Category/Totals	n scale items	Internal Consistency *M*	Internal Consistency *SD*	Alpha Coefficient
Implementation Level				
Shared Leadership	3	10.98	2.74	.82
Shared Mission	3	11.38	2.64	.88
Collaboration	3	11.20	2.43	.74
Collective Inquiry	3	9.41	2.43	.75
Action Orientation/Experimentation	3	10.32	2.53	.77
Continuous Learning	3	10.19	2.56	.75
Results Orientation	3	11.11	2.69	.82
Total Implementation Level	21	74.59	14.82	.95
Effectiveness Level				
Shared Leadership	3	10.38	3.04	.89
Shared Mission	3	10.43	3.15	.94
Collaboration	3	10.59	2.80	.85
Collective Inquiry	3	9.23	2.70	.81
Action Orientation/Experimentation	3	9.76	2.82	.80
Continuous Learning	3	10.50	2.68	.81
Results Orientation	3	10.82	2.62	.79
Total Effectiveness Level	21	71.70	16.81	.96

N=98 *East Study

Administrator/support personnel interview protocol. The second instrument used in this study was a researcher-developed interview protocol, *Administrator and School Improvement Specialist PLC Interview Guide*, to guide the interviews with administrative/support personnel. The interview protocol consisted of 16 questions. Fourteen of these questions examined the perception of implementation and effectiveness of PLCs in SIG schools as related to each of the seven characteristics of PLCs: shared leadership, shared mission, collaboration, collective inquiry, action orientation and experimentation, continuous learning, and results orientation. Two additional questions focused on the perceptions of strengths and weaknesses existing in the implementation of PLCs in these schools. A copy of the *Administrator and School Improvement Specialist PLC Interview Guide* is included in Appendix C.

Data Collection

The *Implementation and Effectiveness of Professional Learning Communities Survey* was distributed in person by the school improvement specialists or principals to teachers in the participating SIG schools. Six schools were eligible to participate in the study; however, two schools declined to participate. Copies of the survey were delivered to the WVDE school improvement specialist or principal with a letter requesting they present the survey to the teachers in their buildings. Surveys and envelopes for teachers were provided to the school improvement specialist or principal. A sealed box was placed in each school for collection of completed surveys. The sealed boxes were collected by either the Co-Principal Investigator or the School Improvement Specialist when the data collection was complete. A deadline of four weeks was established for completing the survey, with a reminder going out to school improvement specialists on a weekly basis.

The Co-Principal Investigator conducted interviews. Each administrator and school improvement specialist was contacted to discuss their participation in the study and to arrange an interview time and place. The *Administrator and School Improvement Specialist PLC Interview Guide* (Appendix C), provided prompts to guide these interviews.

Data Analysis

Data collected to address research questions 1 and 4 were analyzed by individual item, category, and total for implementation and effectiveness. Mean scores and standard deviations were calculated for each item, category, and the total. A one-sample *t*-test was conducted to determine the level of significance. The sample means for each item, category, and total score were compared to the means from hypothetical normal distributions for each item, category, and total score.

Data collected in response to research questions 3 and 6 were analyzed using an independent sample *t*-test for variables with two groups and an analysis of variance (ANOVA) for variables with more than two groups. Each demographic variable was analyzed based on level of PLC implementation and effectiveness for category and total scores.

Research questions 2, 5, 7, and 8 were addressed by using emergent category analysis (Salkind, 2003) to categorize responses around common themes. Percentages were calculated for the most frequent responses for research questions 7 and 8.

CHAPTER FOUR:

PRESENTATION AND ANALYSIS OF DATA

Introduction

The purpose of this study was to examine teacher perceptions of the level of implementation and effectiveness of Professional Learning Communities (PLCs) in improvement schools in West Virginia. Additionally, this study sought to gain an understanding of administrator and school improvement specialists' perceptions of how the characteristics of PLCs affect the current levels of implementation and effectiveness of PLCs in these schools. Findings in this chapter are organized around the following sections: data collection, participant characteristics, major findings for each of the eight research questions examined in this study, and a summary of the findings.

Data Collection

On May 12, 2014 the survey, *Implementation and Effectiveness of Professional Learning Communities Survey* (Appendix B), was distributed to the principal and school improvement specialist of each of the six schools identified for this study. There were 193 teachers in these six schools. A cover letter (Appendix D) was attached to the survey. Two of the six schools identified as School Improvement Grant (SIG) schools declined to participate in the study. There were 133 teachers in these four remaining schools.

A deadline of May 30, 2014 was specified for survey completion. Principals were sent a reminder email on May 23, 2014. Survey data collection was concluded on June 2, 2014. With two of the six schools declining to participate, the sample for this study included 133 teachers at the remaining three elementary and one K-8 SIG schools. School A had 21 responses out of 30 possible for a 70% response rate. School B had 26 responses (63% response rate), School C had

30 responses (79% response rate), and School D had 21 responses (88% response rate). The response rate for the participating schools was 74%, as 98 of 133 teachers responded to the survey. There were no incomplete or unusable surveys resulting in a usable survey response rate of 74%. The response rate for the total population was 50.8% (98/193).

Personal interviews with administrators and School Improvement Specialists began on July 14, 2014. Interview data collection was concluded on November 14, 2014. Five administrators were contacted and all five were interviewed. Seven School Improvement Specialists contacted and all seven were interviewed.

Participant Characteristics

Section one of the survey requested participants to respond to four demographic questions: years of experience, grade/developmental level taught, organizational structure of participant's PLC, and participant's sex. These data are presented in Table 2.

The years of teaching experience response choices were divided into quartiles and the first quartile (1–2 years) contained 26.3% of the sample (*n* = 25). The second quartile (3-8 years) contained 25.3% of the sample (*n* = 24). The third quartile (9-19 years) contained 25.2% of the sample (*n* = 24). The fourth quartile (20-40 years) contained 23.2% of the sample (*n* = 22). Additional data revealed that 89.7% (*n* = 87) of the sample were elementary teachers, and 10.3% (*n* = 10) were middle school teachers. Eleven (11.39%) of the respondents were male, and 86 (88.7%) were female.

After extracting single responses, participating teachers reported the following responses: grade level 36.1% (*n* = 35), subject/department 6% (*n* = 6), team 11.3% (*n* = 11), and school-wide 18.5% (*n* = 18). Twenty-eight (28.6%) of the respondents described the organizational structure of their PLCs by selecting more than one response choice.

Table 2

Demographic Characteristics of Participants

Demographic Characteristic	*n*	%
Teaching Experience		
1-2 Years	25	26.3
3-8 Years	24	25.3
9-19 Years	24	25.2
20-40 Years	22	23.2
Grade/Developmental Level Taught		
Elementary School	87	89.7
Middle School	10	10.3
Organizational Structure – Single Responses Only		
Grade Level	35	36.1
Subject/Department	6	6.0
Team	11	11.3
School-wide	18	18.5
Sex		
Male	11	11.3
Female	87	88.7

N = 98

Major Findings

This section of Chapter Four presents major findings from this study. The presentation of findings is organized around each of the eight research questions. A summary of these major findings concludes the chapter.

Levels of PLC Implementation. Participants rated the level of implementation of each of twenty-one PLC indicator items using a scale of 1-5, where 1 = rarely, 2 = infrequently, 3 = some of the time, 4 = most of the time, and 5 = all of the time. A one-sample *t*-test, comparing the sample mean for each item to the mean score ($M = 3.0$) from a hypothetical normal distribution, was conducted on each of the twenty-one indicator items.

The 21 indicator items were grouped into seven categories based on the Hannaford (2010) model of PLCs. Three indicator items were associated with each of the seven categories. Total scores for each category were calculated by summing responses for the three related indicator items. A one-sample t-test, comparing each total categorical mean score to the mean score ($M = 9$) from a hypothetical categorical normal distribution was conducted for each of the seven categories.

Finally, a total level of implementation score was calculated for each respondent by summing the responses on each of the 21 indicator items. A one-sample t-test, comparing the sample total mean score to the mean score ($M = 63$) from a hypothetical normal distribution, was conducted.

An analysis of respondent mean scores for each of the twenty-one indicator items for level of implementation revealed that all items had a mean score greater than 3.00. Four items fell between mean scores of 3.00 and 3.25; five items fell between mean scores of 3.26 and 3.50,

six items fell between mean sores of 3.51 and 3.75, four items fell between mean scores of 3.76 and 4.00, and two items had mean scores between 4.00 and 5.00.

Those indicator items with level of implementation mean scores between 3.00 and 3.25 included "sharing of current research" (*M* = 3.08, *SD* = 1.06); "inquiry-based learning" (*M* = 3.11, *SD* = 0.97); "critical dialogue of experience" (*M* = 3.21, *SD* = 0.94); and "view every opportunity as a learning experience" (*M* = 3.21, *SD* = 0.92). Those indicator items with level of implementation mean scores between 3.26 and 3.50 included "hold one another accountable" (*M* = 3.27, *SD* = 1.15); "experiment with new methods" (*M* = 3.30, *SD* = 0.94); "share methods of remediation" (*M* = 3.30, *SD* = 1.12); "emphasize continuing education" (*M* = 3.34, *SD* = 1.10); and "shared decisions and responsibilities" (*M* = 3.46, *SD* = 1.08).

Those indicator items with level of implementation mean scores between 3.51 and 3.75 included "shared roles" (*M* = 3.57, *SD* = 1.02); "shared responsibility for mission" (*M* = 3.57, *SD* = 0.91); "meaningful collaboration" (*M* = 3.60, *SD* = 1.15); "nurturing environment" (*M* = 3.64, *SD* = 1.11); "staff training in collaborative process" (*M* = 3.72, *SD* = 0.96); and "sharing student progress" (*M* = 3.74, *SD* = 1.00). Those indicator items with level of implementation mean scores between 3.76 and 4.00 included "address goals to achieve mission" (*M* = 3.76, *SD* = 0.94); "decisions influenced by school's mission" (*M* = 3.78, *SD* = 1.00); "sharing of ideas and suggestions" (*M* = 3.88, *SD* = 0.87); and "supportive principal" (*M* = 3.95, *SD* = 1.12). Those indicator items with level of implementation mean scores above 4.00 included knowledge of the school's mission and (*M* = 4.03, *SD* = 1.02) and set benchmarks for student progress (*M* = 4.07, *SD* = 1.01).

When compared to the mean score (*M* = 3.0) from a hypothetical normal distribution, one-sample t-test results indicated the differences between the normal distribution and sample

mean scores for all but two of the 21 indicator items were statistically significant at $p < .05$. Item 10, sharing of current research and Item 12, inquiry-based learning were not statistically significant. Data for the individual indicator items are presented in Table 3.

When responses were analyzed based on the seven categories, category total level of implementation means ranged from 9.41 to 11.38 (R = 3-15). From lowest to highest, mean scores for each category were as follows: Category 4 – Collective Inquiry (M = 9.41, SD = 2.43); Category 6 – Continuous Learning (M = 10.19, SD = 2.56); Category 5 – Action Orientation and Experimentation (M = 10.32, SD = 2.53); Category 1 – Shared Leadership (M = 10.98, SD = 2.74); Category 7 – Results Orientation (M = 11.11, SD = 2.70); Category 3 – Collaboration (M = 11.20, SD = 2.43); and Category 2 – Shared Mission (M = 11.38, SD = 2.64).When each sample category mean was compared to the mean (M = 9) from a hypothetical normal distribution for each category, one-sample t-test results indicated the differences between the normal distribution mean scores and each of the sample category means were significantly different at $p < 0.05$ for 6 of the 7 categories. Category item 4, Collective Inquiry, was not statistically significant. Data for the level of implementation by categories are provided in Table 4.

The total sample level of implementation mean score (M = 74.59, SD = 14.82, R = 21-105) was compared to the mean (M = 63) from a hypothetical normal distribution. One sample t-test results ($t(98) = 7.74$) revealed that the difference in the two means was statistically significant at $p < 0.05$.

Table 3

Level of Implementation of PLCs as Perceived by Teachers

PLC Indicator Item	Level of Implementation M[+]	SD	*t* value
1. Shared decisions and responsibilities	3.46	1.08	4.22*
2. Shared roles	3.57	1.02	5.57*
3. Supportive principal	3.95	1.12	8.42*
4. Knowledge of school's mission	4.03	1.02	10.00*
5. Decisions influenced by school's mission	3.78	1.00	7.68*
6. Shared responsibility for mission	3.57	0.91	6.23*
7. Meaningful collaboration	3.60	1.12	5.20*
8. Staff training in collaborative process	3.72	0.96	7.46*
9. Sharing of ideas and suggestions	3.88	0.87	10.05*
10. Sharing of current research	3.08	1.06	0.76
11. Critical dialogue of experience	3.21	0.94	2.25*
12. Inquiry-based learning	3.11	0.97	1.14
13. Experiment with new methods	3.30	0.94	3.10*
14. Address goals to achieve mission	3.76	0.94	7.93*
15. Hold one another accountable	3.27	1.15	2.28*
16. Emphasize continuing education	3.34	1.10	3.02*
17. View every opportunity and experience learning	3.21	0.92	2.30*
18. Nurturing environment	3.64	1.11	5.76*
19. Sharing student progress	3.74	1.00	7.39*
20. Sharing methods of remediation	3.30	1.12	2.61*
21. Set benchmarks for student progress	4.07	1.01	10.53*

[+]Comparison $M = 3.0$ *$p = < 0.05$ $N = 98$: Scale: 1 = Rarely, 2 = Infrequently, 3 = Some of the time, 4 = Most of the time, 5 = All of the time

Table 4

Level of Implementation of PLCs by Categories as Perceived by Teachers

PLC Category	Level of Implementation M[+]	SD	*t* value
1. Shared Leadership Sum of items 1, 2, 3	10.98	2.74	7.14*
2. Shared Mission Sum of items 4, 5, 6	11.38	2.64	8.91*
3. Collaboration Sum of items 7, 8, 9	11.20	2.43	8.99*
4. Collective Inquiry Sum of items 10, 11, 12	9.41	2.43	1.66
5. Action Orientation and Experimentation Sum of items 13, 14, 15	10.32	2.53	5.15*
6. Continuous Learning Sum of items 16, 17, 18	10.19	2.56	4.63*
7. Results Orientation Sum of items 19, 20, 21	11.11	2.69	7.76*

[+]Comparison (*M* = 9.0) **p* = <0.05: N = 98: Scale: 3 = Rarely, 6 = Infrequently, 9 = Some of the time, 12 = Most of the time, 15 = All of the time

Differences in Levels of Implementation Based on Demographic Variables

Participant responses were analyzed to determine differences in perceptions of the level of implementation of PLCs for each of the seven categories and the total score based on three independent variables: total years of teaching experience, developmental level taught, and sex. Means and standard deviations were determined and an ANOVA or an independent samples *t*-test was used to determine if there were statistically significant differences in implementation levels based on each of the variables.

Total years of experience. A one-way between-groups analysis of variance (ANOVA) was conducted to explore the differences in implementation levels based on total years of teaching experience. Data were organized into four quartiles: 1-2 years, 3-8 years, 10-19 years, and 20-40 years. There were no statistically significant differences in implementation levels based on years of experience for category and total responses. The data are presented in Table 5.

Grade/developmental level. An independent samples t-test was conducted to explore the differences in implementation levels based on the grade/developmental level. There were two categories of grade level taught: elementary and middle school. Elementary consisted of PreK-5th grade. Middle school consisted of 6th – 8th grade. There were no statistically significant differences in implementation levels based on grade/developmental level for category and total responses. The data are presented in Table 6.

Sex. An independent samples *t*-test was conducted to explore the differences in implementation levels based on sex. There were no statistically significant differences in implementation levels based on sex for category and total responses. The data are presented in Table 7.

Table 5

Means, Standard Deviations, and One-Way Analysis of Variance for Category and Total Levels of Implementation by Total Years of Teaching Experience

	Total Years of Teaching Experience/Implementation								
	1-2 Years		3-8 Years		10-19 Years		20-40 Years		F
PLC Category/Totals	*M*	*SD*	*M*	*SD*	*M*	*SD*	*M*	*SD*	value
Shared Leadership Sum of items a, b, c	11.16	2.36	11.17	2.75	10.92	2.81	10.82	2.82	0.10
Shared Mission Sum of items d, e, f	11.36	2.96	11.75	2.25	10.75	2.33	12.00	2.73	1.04
Collaboration Sum of items g, h, i	10.92	2.50	11.54	1.91	11.25	2.79	11.36	2.42	0.29
Collective Inquiry Sum of items j, k, l	9.56	2.33	9.92	2.08	9.71	2.55	8.59	2.74	1.32
Action Orient./Exp. Sum of items m, n, o	9.72	2.70	11.29	1.71	10.00	2.69	10.27	2.88	1.78
Continuous Learning Sum of items p, q, r	10.20	2.77	10.17	2.28	10.33	2.85	10.32	2.42	0.03
Results Orientation Sum of items s, t, u	10.64	2.52	11.38	2.55	11.13	2.80	11.55	2.86	0.52
Total Level of Implementation	73.56	14.76	77.21	12.32	74.08	17.25	74.91	14.54	0.29

N = 95, *n* = 25 (1-2 Years), *n* = 24 (3-8 Years), *n* = 24(10-19 Years), *n* = 22 (20-40 Years)

Category Scale: 3 = Rarely, 6 = Infrequently, 9 = Some of the Time, 12 = Most of the Time, 15 = All of the Time

Total Scale: 21 = Rarely, 42 = Infrequently, 63 = Some of the Time, 84 = Most of the Time, 105 = All of the Time

Table 6

Means, Standard Deviations, and One-Way Analysis of Variance for Category and Total Levels of Implementation by Grade/Developmental Level

	Grade/Developmental Level/Implementation				
	Elementary		Middle		
PLC Category/Totals	*M*	*SD*	*M*	*SD*	*t* value
Shared Leadership Sum of items a, b, c	11.29	2.39	9.10	3.81	1.78
Shared Mission Sum of items d, e, f	11.49	2.61	11.00	2.36	0.57
Collaboration Sum of items g, h, i	11.23	2.38	11.40	2.76	-0.21
Collective Inquiry Sum of items j, k, l	9.44	2.51	9.40	1.65	0.05
Action Orientation/Exp. Sum of items m, n, o	10.29	2.52	10.60	2.84	-0.37
Continuous Learning Sum of items p, q, r	10.16	2.43	10.90	3.41	-0.87
Results Orientation Sum of items s, t, u	11.03	2.63	12.40	2.50	-1.56
Total Level of Implementation	74.93	14.66	74.80	14.37	0.03

N = 97, *n* = 87 (elementary), *n* = 10 (middle)

Category Scale: 3 = Rarely, 6 = Infrequently, 9 = Some of the Time, 12 = Most of the Time, 15 = All of the Time

Total Scale: 21 = Rarely, 42 = Infrequently, 63 = Some of the Time, 84 = Most of the Time, 105 = All of the Time

Table 7

Means, Standard Deviations, and One-Way Analysis of Variance for Category and Total Levels of Implementation by Sex

	Male		Female	
PLC Category/Totals	*M*	*SD*	*M*	*SD*
Shared Leadership Sum of items a, b, c	11.64	2.42	10.99	2.66
Shared Mission Sum of items d, e, f	12.09	1.92	11.36	2.64
Collaboration Sum of items g, h, i	11.82	2.27	11.17	2.42
Collective Inquiry Sum of items j, k, l	10.00	2.24	9.36	2.45
Action Orientation/Exp. Sum of items m, n, o	11.00	2.49	10.23	2.55
Continuous Learning Sum of items p, q, r	10.45	2.02	10.21	2.60
Results Orientation Sum of items s, t, u	12.27	1.74	11.03	2.70
Total Level of Implementation	79.27	11.28	74.36	14.87

N = 97, *n* = 86 (male), *n* = 11 (female)

Levels of PLC Effectiveness. Participants rated the level of effectiveness of each of 21 PLC indicator items using a scale of 1-5, where 1 = of little effectiveness, 2 = somewhat effective, 3 = effective, 4 = very effective, and 5 = extremely effective. A one-sample t-test, comparing the sample mean for each item to the mean score (M = 3.0) from a hypothetical normal distribution, was conducted on each of the 21 indicator items.

The 21 indicator items were grouped into seven categories for analysis based on the Hannaford (2010) model of PLCs. Three indicator items were associated with each of the seven categories. Total scores for each category were calculated by summing the responses for the three related indicator items. A one-sample t-test, comparing each total categorical mean score to the mean score (M = 9) from a hypothetical normal distribution was conducted for each of the seven categories.

Finally, a total level of effectiveness score was calculated for each respondent by summing the responses on each of the 21 indicator items. A one-sample t-test, comparing the sample total mean score to the mean score (M = 63) from a hypothetical normal distribution, was conducted.

An analysis of respondent mean scores for each of the 21 indicator items for level of effectiveness revealed that all scores were above a mean of 3.00. The 21 mean scores ranged from 3.01 to 3.85: six items fell between mean scores of 3.00 and 3.25; eight items fell between mean scores of 3.26 and 3.50; four items fell between mean scores of 3.51 and 3.75; and three items fell between mean scores of 3.75 and 4.00.

Those items with level of effectiveness mean scores between 3.00 and 3.25 included sharing of current research (M = 3.01, SD = 1.10), inquiry-based learning (M = 3.09, SD = 1.07), experiment with new methods (M = 3.10, SD = 1.05), critical dialogue of experience (M = 3.13,

SD = 1.01), hold one another accountable (*M* = 3.18, *SD* = 1.30), and shared roles (*M* = 3.24, *SD* = 1.05).

Those indicator items with level of effectiveness mean scores between 3.26 and 3.50 included shared decisions and responsibilities (*M* = 3.29, *SD* = 1.12), emphasize continuing education (*M* = 3.33, *SD* = 1.03), shared responsibility for mission (*M* = 3.35, *SD* = 1.10), view every opportunity and experience learning (*M* = 3.36, *SD* = 1.02), sharing methods of remediation (*M* = 3.37, *SD* = 1.06), meaningful collaboration (*M* = 3.46, *SD* = 1.17), address goals to achieve mission (*M* = 3.47, *SD* = 0.96), and decisions influenced by the school's mission (*M* = 3.50, *SD* = 1.13).

Those indicator items with level of effectiveness mean scores between 3.51 and 3.75 included staff training in the collaborative process (*M* = 3.52, *SD* = 1.05), knowledge of school's mission (*M* = 3.58, *SD* = 1.11), sharing of ideas and suggestions (*M* = 3.61, *SD* = 0.97), and sharing student progress (*M* = 3.63, *SD* = 1.01). Those indicator items with level of effectiveness mean scores between 3.76 and 4.00 included set benchmarks for student progress (*M* = 3.82, *SD* = 1.05), nurturing environment (*M* = 3.82, *SD* = 1.11), and supportive principal (*M* = 3.85, *SD* = 1.20).

When compared to the mean score (*M* = 3.00) from a hypothetical normal distribution, one-sample t-test results indicated the differences between the normal distribution and sample mean scores for 16 of the 21 indicator items were statistically significant at $p < 0.05$. Data for the individual indicator items are presented in Table 8.

When responses were analyzed based on the seven categories, category total levels of effectiveness means ranged from 9.23 to 10.82 (*R* = 3-15). From lowest to highest, the mean scores for each category were as follows: Category 4 – Collective Inquiry (*M* = 9.23, *SD* = 2.70);

Category 5 – Action Orientation and Experimentation (M = 9.76, SD = 2.82); Category 1 – Shared Leadership (M = 10.38, SD = 3.04); Category 2 – Shared Mission (M = 10.43, SD = 3.15); Category 6 – Continuous Learning (M = 10.50, SD = 2.68); Category 3 – Collaboration (M = 10.59, SD = 2.80), and Category 7 – Results Orientation (M = 10.82, SD = 2.62). When each sample category mean was compared to the mean (M = 9.00) from a hypothetical normal distribution for each category, one-sample t-test results indicated the differences between the normal distribution mean scores and each of the sample category means was significantly different at $p < 0.05$. Data for the level of effectiveness categories are provided in Table 9.

Finally, the total sample level of effectiveness mean score (M = 71.70, SD = 16.81, R = 21-105) was compared to the mean score (M = 63.00) from a hypothetical normal distribution. One sample t-test results ($t(98) = 5.13$) revealed that the difference in the two means was statistically significant at $p < 0.05$.

Table 8

Levels of Effectiveness of PLCs as Perceived by Teachers

PLC Indicator Item	Level of Effectiveness M[+]	SD	*t* value
1. Shared decisions and responsibilities	3.29	1.11	2.54*
2. Shared roles	3.24	1.05	2.32*
3. Supportive principal	3.85	1.20	6.96*
4. Knowledge of school's mission	3.58	1.11	5.18*
5. Decisions influenced by school's mission	3.50	1.13	4.37*
6. Shared responsibility for mission	3.35	1.10	3.14*
7. Meaningful collaboration	3.46	1.17	3.89*
8. Staff training in collaborative process	3.52	1.05	4.92*
9. Sharing of ideas and suggestions	3.61	0.97	6.25*
10. Sharing of current research	3.01	1.10	0.10
11. Critical dialogue of experience	3.13	1.01	1.30
12. Inquiry-based learning	3.09	1.07	0.85
13. Experiment with new methods	3.10	1.05	0.96
14. Address goals to achieve mission	3.47	0.96	4.87*
15. Hold one another accountable	3.18	1.30	1.40
16. Emphasize continuing education	3.33	1.03	3.13*
17. View every opportunity and experience learning	3.36	1.02	3.47*
18. Nurturing environment	3.82	1.11	7.31*
19. Sharing student progress	3.63	1.01	6.21*
20. Sharing methods of remediation	3.37	1.06	3.43*
21. Set benchmarks for student progress	3.82	1.05	7.71*

[+]Comparison $M = 3.00$ *$p < 0.05$: N = 98: Scale: 1 = Of little effectiveness, 2 = Somewhat effective, 3 = Effective, 4 = Very effective, 5 = Extremely effective

Table 9

Level of Effectiveness of PLCs by Categories as Perceived by Teachers

PLC Category	Level of Effectiveness M[+]	SD	*t* value
1. Shared Leadership Sum of items 1, 2, 3	10.38	3.04	4.49*
2. Shared Mission Sum of items 4, 5, 6	10.43	3.15	4.50*
3. Collaboration Sum of items 7, 8, 9	10.59	2.80	5.64*
4. Collective Inquiry Sum of items 10, 11, 12	9.23	2.70	0.86
5. Action Orientation and Experimentation Sum of items 13, 14, 15	9.76	2.82	2.65*
6. Continuous Learning Sum of items 16, 17, 18	10.50	2.68	5.53*
7. Results Orientation Sum of items 19, 20, 21	10.82	2.62	6.86*

[+]Comparison (M = 9.0) *p < .05: N = 98: Scale: 1 = Of Little Effectiveness, 2 = Somewhat Effective, 3 = Effective, 4 = Very Effective, 5 = Extremely Effective

Category Scale: 3 = Of little effectiveness, 6 = Somewhat effective, 9 = Effective, 12 = Very effective, 15 = Extremely effective

Total Scale: 21 = Of little effectiveness, 42 = Somewhat effective, 63 = Effective, 84 = Very effective, 105 = Extremely effective

Differences in Levels of Effectiveness Based on Demographic Variables

Participant responses were analyzed to determine differences in perceptions of the level of effectiveness of PLCs for each of the seven categories based on three independent variables: total years of teaching experience, developmental level taught, and sex. Means and standard deviations were determined and an ANOVA or an independent samples t-test was used to determine statistically significant differences in implementation based on each of the variables.

Total years of experience. A one-way between-groups analysis of variance was conducted to explore the differences in implementation levels based on total years of teaching experience. No statistically significant differences in level of effectiveness based on years of experience for category and total responses were found. The data are presented in Table 10.

Grade/developmental level. A one-way between-groups analysis of variance was conducted to explore the differences in levels of effectiveness based on the grade/developmental level. No statistically significant differences in levels of effectiveness based on grade/developmental level for category and total responses were found. The data are presented in Table 11.

Sex. An independent samples *t*-test was conducted to explore the differences in levels of effectiveness based on sex. No statistically significant differences in effectiveness levels based on sex for category and total responses were found. The data are presented in Table 12.

Table 10

Means, Standard Deviations, and One-Way Analysis of Variance for Category and Total Levels of Effectiveness by Total Years of Teaching Experience

	Total Years of Teaching Experience/Effectiveness								
	1-2 Years		3-8 Years		10-19 Years		20-40 Years		*F*
PLC Category/Totals	*M*	*SD*	*M*	*SD*	*M*	*SD*	*M*	*SD*	Value
Shared Leadership Sum of items a, b, c	11.04	2.30	10.33	2.87	10.25	2.95	9.95	3.75	0.57
Shared Mission Sum of items d, e, f	11.00	2.99	10.50	3.48	9.92	2.52	10.68	3.27	0.53
Collaboration Sum of items g, h, i	10.64	2.38	11.21	2.78	10.29	2.76	10.50	3.04	0.49
Collective Inquiry Sum of items j, k, l	9.84	2.51	9.17	2.84	9.38	2.62	8.59	2.84	0.86
Action Orientat./Exper. Sum of items m, n, o	10.04	2.84	10.25	2.75	9.29	2.51	9.45	3.32	0.61
Continuous Learning Sum of items p, q, r	11.28	2.57	10.25	2.47	10.25	2.59	10.41	2.94	0.86
Results Orientation Sum of items s, t, u	11.00	2.04	10.54	2.32	10.58	2.87	11.27	3.12	0.42
Total Level of Effectiveness	74.84	14.12	72.25	16.92	69.96	16.52	70.86	18.95	0.40

N = 95: *n* = 25 (1-2 Years), *n* = 24 (3-8 Years), *n* = 24(10-19 Years), *n* = 22 (20-40 Years)

Category Scale: 3 = Of little effectiveness, 6 = Somewhat effective, 9 = Effective, 12 = Very effective, 15 = Extremely effective

Total Scale: 21 = Of little effectiveness, 42 = Somewhat effective, 63 = Effective, 84 = Very effective, 105 = Extremely effective

Table 11

Means, Standard Deviations, and One-Way Analysis of Variance for Category and Total Levels of Effectiveness by Grade/Developmental Level

	Grade/Developmental Level				
	Elementary		Middle		
PLC Category/Totals	*M*	*SD*	*M*	*SD*	*t* value
Shared Leadership Sum of items a, b, c	10.61	2.81	9.10	3.93	1.54
Shared Mission Sum of items d, e, f	10.53	3.14	10.30	2.54	0.22
Collaboration Sum of items g, h, i	10.62	2.84	10.90	1.91	-0.30
Collective Inquiry Sum of items j, k, l	9.31	2.74	8.90	2.28	0.46
Action Orientation/Exper. Sum of items m, n, o	9.92	2.79	8.60	2.95	1.41
Continuous Learning Sum of items p, q, r	10.56	2.61	10.60	2.80	-0.04
Results Orientation Sum of items s, t, u	10.93	2.45	10.40	3.53	0.62
Total Level of Effectiveness	72.48	16.87	68.80	12.10	0.67

N = 97: *n* = 87 (elementary), *n* = 10 (middle)

Category Scale: 3 = Of little effectiveness, 6 = Somewhat effective, 9 = Effective, 12 = Very effective, 15 = Extremely effective

Total Scale: 21 = Of little effectiveness, 42 = Somewhat effective, 63 = Effective, 84 = Very effective, 105 = Extremely effective

Table 12

Means, Standard Deviations, and One-Way Analysis of Variance for Category and Total Levels of Effectiveness by Sex

	Sex				
	Male		Female		
PLC Category/Totals	*M*	*SD*	*M*	*SD*	*t*
Shared Leadership Sum of items a, b, c	11.00	2.72	10.38	3.00	0.65
Shared Mission Sum of items d, e, f	11.64	2.34	10.36	3.13	1.30
Collaboration Sum of items g, h, i	11.18	1.94	10.58	2.84	0.68
Collective Inquiry Sum of items j, k, l	9.09	2.43	9.29	2.74	-0.23
Action Orientation/Exp. Sum of items m, n, o	10.00	3.46	9.76	2.75	0.27
Continuous Learning Sum of items p, q, r	10.45	2.73	10.58	2.61	-0.15
Results Orientation Sum of items s, t, u	10.09	3.05	10.98	2.50	-1.08
Total Level of Effectiveness	73.45	15.04	71.93	16.67	0.29

N = 97: *n* = 86 (male), *n* = 11 (female)

Category Scale: 3 = Of little effectiveness, 6 = Somewhat effective, 9 = Effective, 12 = Very effective, 15 = Extremely effective

Total Scale: 21 = Of little effectiveness, 42 = Somewhat effective, 63 = Effective, 84 = Very effective, 105 = Extremely effective

Relationship Between Implementation and Effectiveness

A Pearson product-moment correlation coefficient was used to determine whether significant relationships existed between the level of implementation and the level of effectiveness for the seven PLC categories and the total mean scores for implementation and effectiveness. Relationships were described on a scale of weak to very strong using the categories (0.0-0.2 = weak or no relationship, 0.2-0.4 weak relationship, 0.4-0.6 moderate relationship, 0.6-0.8 strong relationship, 0.8–1.0 = very strong relationship) as identified by Salkind (2004). Table 13 includes the means and standard deviations, organized and presented by PLC category and total. Table 14 contains the Pearson product-moment correlation coefficients for the seven categories and total.

The overall correlations between the level of implementation and the level of effectiveness ranged from .565 for the results orientation category to .741 for the collective inquiry category. The relationships between levels of implementation and level of effectiveness for all seven categories were statistically significant ($p < 0.01$) and were moderately strong to strong.

The correlation coefficient between total level of implementation ($M = 74.59$ $SD = 14.82$) and total level of effectiveness ($M = 71.70$ $SD = 16.81$) was .733. This relationship was statistically significant ($p < 0.01$) and strong.

Table 13

Correlation Mean and Standard Deviation Totals for Implementation and Effectiveness by PLC Category

	Implementation		Effectiveness	
PLC Category/Totals	*M*	*SD*	*M*	*SD*
Shared Leadership Sum of items a, b, c	10.98	2.74	10.38	3.04
Shared Mission Sum of items d, e, f	11.38	2.64	10.43	3.15
Collaboration Sum of items g, h, i	11.20	2.43	10.59	2.80
Collective Inquiry Sum of items j, k, l	9.41	2.43	9.23	2.70
Action Orientation/Exp. Sum of items m, n, o	10.32	2.53	9.76	2.82
Continuous Learning Sum of items p, q, r	10.19	2.56	10.50	2.68
Results Orientation Sum of items s, t, u	11.11	2.70	10.82	2.62
Total	74.59	14.82	71.70	16.81

Implementation N = 98 Effectiveness N = 98

Category Scale: 3 = Rarely, 6 = Infrequently, 9 = Some of the Time, 12 = Most of the Time, 15 = All of the Time
Total Scale: 21 = Rarely, 42 = Infrequently, 63 = Some of the Time, 84 = Most of the Time, 105 = All of the Time

Category Scale: 3 = Of little effectiveness, 6 = Somewhat effective, 9 = Effective, 12 = Very effective, 15 = Extremely effective
Total Scale: 21 = Of little effectiveness, 42 = Somewhat effective, 63 = Effective, 84 = Very effective, 105 = Extremely effective

Table 14

Pearson Correlation Between Levels of Implementation and Effectiveness for PLC Categories and Total

Measure	1	2	3	4	5	6	7	8
1.Shared Leadership – Implementation	.649*							
2.Shared Mission – Implementation		.737*						
3.Collaboration – Implementation			.667*					
4.Collective Inquiry – Implementation				.741*				
5.Action Orient./Exp.— Implementation					.697*			
6.Continuous Learning – Implementation						.703*		
7.Results Orientation – Implementation							.565*	
8.Total Level of Implementation								.733*

*p < .01 Implementation N = 98 Effectiveness N = 98

Suggestions to Enhance PLCs: Teachers. In Part B, Item 1 of the survey, participants were asked to respond to the open-ended question: What suggestions do you have to enhance the PLC experience in your school? A total of 65 responses were provided to this question. These data are presented in Table 15.

Emergent category analysis (Salkind, 2008) was used to analyze and categorize these responses. The most frequently reported suggestions were related to logistics (28%, *n* = 18) and training (23%, *n* = 15). Content and time each had eleven (17%) responses. Nine respondents (14%) reported that their PLC was working well or that nothing needed to be changed.

Those responses related to logistics included requiring less paperwork and changing the day, time, and/or location of the meetings. Those responses related to training included establishing norms, holding teachers accountable, providing guidelines for participation, and staying on task/remaining focused. Those responses related to content included addition of related arts, special education, and title I teachers to meetings: have incorporation of different grade levels or alternate group members: usage of more hands on work, and research on a variety of topics.

Barriers to PLCs: Teachers. In Part B, Item 2 of the survey, participants were asked to respond to the open-ended question: What have been the greatest barriers with PLCs in your school? Seventy-eight responses were received for this question. These data are presented in Table 16.

Emergent category analysis (Salkind, 2008) was used to analyze and categorize these responses. The most frequently reported suggestions were related to time (49%, *n* = 38). Accountability (18%, *n* = 14) and attitude and response to change (14%, *n* = 11) were the next most frequent responses. Training/procedures (10%, *n* = 8) had the fewest number of responses

and five teachers (7%) reported their PLCs were working well or that nothing needed to be changed.

Responses related to time indicated that teachers did not have enough time to properly conduct a meeting, planning periods were used to conduct meetings and teachers' did not have time to devote to PLCs given other demands. Multiple comments reflected scheduling difficulties and the inability to have a common planning time with colleagues. Responses related to accountability, attitude, and response to change indicated that some teachers had a negative attitude toward participating in PLCs and were not open to change. Respondents also indicated that all teachers should participate and all teachers should be held accountable for the work that is done in the PLC.

Table 15

Teachers' Suggestions to Enhance the PLC Experience in Their School as Reported in Part B, Item 1 Responses

Suggestions related to:	n*	%
Logistics	18	28
Training	15	23
Content	11	17
Time	11	17
None (working well)	9	14
Of no value	1	1

n = 98: Duplicated count

Table 16

Teachers' Perceptions of the Greatest Barriers to the PLC Experience in Their School as Reported in Part B, Item 2 Responses

Barriers related to:	n*	%
Time	38	49
Accountability	14	18
Attitude	11	14
Training/procedures	8	10
None (working well)	5	7
Of no value	2	2

n = 98: *Duplicated count

Administrator and School Improvement Specialist Interviews

Ten administrators or school improvement specialists (SIS) from the four schools participating in the study agreed to participate in a 30-minute interview. A 16-question protocol, *"Administrator and School Improvement Specialist PLC Interview"* (Appendix C) was used to guide this interview process. A summary of the interview findings, organized by interview prompt, is provided in the following sections.

Effect on shared leadership. Five of the participants stated that implementation of PLCs affected shared leadership within the school by developing teachers into teacher leaders and content experts. One administrator noted, "Our teachers are becoming experts that can share professional development throughout the building." Respondents believed PLCs allow lateral communication and sharing of ideas rather than receiving information in the traditional top-down approach. The practice that all ideas are heard has led to improved communication and common focus. Three individuals commented that implementation of PLCs has to be done correctly to see growth and norms must be set and monitored. One school improvement specialist stated, "Attention to details makes a difference. PLCs can be toxic to shared leadership if the focus is on negative issues or PLCs can be a great vehicle to move an entire school."

Five of the participants indicated that shared leadership within the school created a sense of ownership among teachers. One administrator noted that participation is the expectation and there is a sense of satisfaction among the teachers in the building. Another administrator discussed the improved culture of the building because of the "we're all in this together" attitude that spread throughout the staff. One specialist discussed the improvement cycle, explaining that as a result of shared leadership, PLCs are more effective in targeting academic issues. Respondents also described teachers in PLC meetings as focused and more willing to share ideas

as well as receive ideas for content delivery, a process which improved instruction leading to more student success. One specialist shared a pointed summary of the relationship between shared leadership and PLC effectiveness, "Shared leadership leads to effective PLCs, not PLCs lead to shared leadership."

Effect in establishing a shared mission. All ten participants felt the mission should be developed by the PLC with input from all stakeholders. Administrators suggested that in a PLC, all participants have a voice and can express their thoughts. One administrator noted, "As a member of a PLC, they (teachers) have perspective that surpasses the individual classroom." One specialist indicated that the PLC develops the mission and allows input and enhancement from others so that all stakeholders are involved. Two specialists discussed the use of the PLC as the vehicle for establishing a shared mission, suggesting that if only one or two individuals create the mission, others will see no value in it. If it is not developed together and revisited at least annually, teachers and staff will begin to work in isolation focusing on individual missions rather than the shared mission of the school.

All ten of the participants concurred that establishing a shared mission through the PLC increases effectiveness. Each interview led to a discussion explaining that a shared mission leads to a common focus, increased effort, and improved instruction. One specialist stated that creating a shared mission was the most important task of the PLC and explained that when the PLC creates the mission as a group, all the participants understand why they are doing what they are doing. Without understanding the why, many teachers do not sustain the level of effort in reaching the goal. This specialist also stated, "To develop and sustain a common mission is a difficult task because of the level of turnover in improvement schools. These schools typically

have high turnover of staff and as people move in and out of schools, ideas and views change also."

Effect on collaboration. Three administrators indicated that the implementation of PLCs created a vehicle or tool for improving collaboration within their schools. One administrator noted, "We moved from being dysfunctional to functional by breaking communication barriers within the PLC. There were barriers between teachers and barriers between teachers and administrators that we do not have now because of the PLCs." Two specialists responded that PLCs enhanced the total collaborative efforts of the teachers and administrators, but the most successful examples were those that followed protocols early on to establish PLC procedures allowing opportunities for deeper collaboration once the PLCs became more established. Another respondent stated that implementation procedures are necessary in order to maintain a focus throughout the school year.

A common theme of interdependence emerged from each of the interviews. One administrator noted, "They depend on each other. When your collaboration improves, your PLCs are more effective. When you have effective PLCs, your collaboration is better." All ten interviewees described ways that collaboration had improved the effectiveness of PLCs within their buildings. Administrators indicated that improved collaboration has increased the level of PLC effectiveness by having a shared responsibility to participate as teachers had become more willing to talk to each other and share ideas. One administrator noted, "Some of our teachers used to try to avoid involvement, but now teachers collaborate continually, not just because it is required."

Effect of collective inquiry. According to the administrators that participated in the interviews, collective inquiry is still a struggle in the schools. Such inquiry is more assimilated with teachers who have been present throughout the improvement process and since the implementation of PLCs; however, as teachers leave the buildings, the PLC process begins again and, in some instances, teachers are starting from the very basic principles of working together. School improvement specialists validate the PLC as an effective tool for establishing a collective inquiry approach and note that teachers have a natural predisposition to collective inquiry practices when PLCs are effective. One specialist noted, "Collective inquiry became an embedded practice once the PLCs became an effective practice in the school." Respondents noted that "asking the question behind the question" is a good process to teach students how to question. In the PLCs, adults learn how to ask questions of each other, but a high level of trust and respect among team members must exist.

One specialist stated that PLCs must be functioning at least at a moderate level in order to foster collective inquiry. In many improvement schools, functioning at a moderate level is difficult to sustain because of continuously changing staff. Many times, PLCs meet during a planning period or afterschool. Collective inquiry is best over a period of time because some questions are too deep to answer in a small amount of time. The level of effectiveness of the PLC is then affected because the level of questioning requires more time than is available. Another specialist stated that collective inquiry is a key ingredient for successful PLCs and facilitating this level of inquiry allows educators to truly focus on student learning and improved professional practice.

Effect on action orientation and experimentation. All specialists agreed that there is a relationship between the implementation of PLCs and action orientation and experimentation within schools. One stated "Teachers feel safe because the PLC partners will help them. Experimentation is the lifeblood of PLCs. It's why we do them." Administrator responses echo those of the specialists in that they reported seeing a significant change in the professional practice as a result of implementing PLCs. One administrator described the process in the following manner, "We try things. If they work, we keep them. If they don't, we either tweak them until they do or we throw them out altogether." Respondents felt PLCs provide a venue for teachers to share ideas. They are more willing to try new things and PLCs have allowed them to change their perspective on failure. Instead of seeing failure as a negative reflection on their practice, they see it as a learning tool. One administrator stated, "PLCs provide security for teachers to try new things without fear because they are aware of the support others in the PLC provide."

One administrator suggested that full implementation will open the door to true and continuous growth within the school. This administrator explained that even with teacher turnover, PLCs in that school are effective because the PLC members continue to rebuild the foundation as new employees are hired. Another administrator felt that the level of effectiveness of PLCs in the building is greater because teachers feel safe with one another and are not afraid of retribution for failure. They are much more likely to try new things and then bring the results, good or bad, back to the PLC for review and analysis. PLCs encourage new ideas and practices. One of the specialists characterized the impact of action-oriented PLCs as follows, "When PLCs are action-oriented, they are more successful in terms of becoming part of the school's traditions,

norms, and professional landscape." As PLCs become part of the landscape of the school, buy-in is somewhat natural as participation becomes an expectation.

Effect on continuous learning. More than half (n = 6) of the participants felt that PLCs provided teachers a way to learn and grow with the support of their colleagues. One specialist explained, "From the implementation stage of PLCs to the present stage of PLCs in these schools, teachers have always wanted a time to share and plan. PLCs give them the opportunity to do this." Another specialist noted that PLCs are a prime format for continuous learning and that adults must see themselves as learners, not just teachers. One administrator explained the changes in perception since implementing PLCs in the school: "Before PLCs were implemented, there was not a focus on the work. Some teachers showed up, some didn't. Some were prepared, some weren't. Now, as PLCs have developed, teachers don't miss a meeting and they show up with data ready to work." One participant explained that continuous learning is a result of PLCs. Teachers can learn a lot outside of their own four walls and we all know much more as a group than any one individual.

Respondents described a reciprocal relationship with the implementation of PLCs and the improvement process as it relates to continuous learning. One administrator affirmed, "The adults in our schools internalize they are learners and as PLCs facilitate professional growth, the level of effectiveness of PLCs increases. When the PLCs become more effective, teachers are more open to receive instruction and information as learners." Another administrator stated "Teachers have evolved in their expectation for continuous growth and refining their practice. This has increased the intrinsic motivation for actively participating in PLCs, which has made our PLCs more effective in examining and changing instructional practices." One specialist explained the positive relationship between how continuous learning has affected PLCs. As

teachers improve their own knowledge, they improve their skill, which is supported and further developed by participation in the PLC. As more people participate in PLCs as a way to grow professionally, the quality and effectiveness of PLCs increase.

Effect on results orientation. Administrators and specialists stated that the implementation of PLCs provided schools with a guide to ensure that PLCs are results-focused and that increasing student achievement is the primary goal of the school. One administrator stated that the PLC was a way to monitor that action steps and instructional plans were being implemented, not only by the administrator, but also by colleagues. Interviewees believed that PLCs drive the process for data-driven decision making and provide teachers with time during the school day to analyze data and ask questions needed for continued skills assessment. One specialist explained that PLCs align three different cultures and focus them in the same direction. These cultures, the classroom, the grade level, and the school, are aligned to a common goal through the PLC. The PLC then determines the result it wants (goal) and puts a plan in place to reach that goal.

All participants reported that concentrating on results increases the level of PLC effectiveness. Respondents believed that PLC actions without a focus on results produces many meaningless random actions. As long as the focus is based on results and is data-driven, they believe the PLC will remain effective. If a PLC is not results-oriented, it functions ineffectively or at a toxic level. One specialist stated "If you spread out on a calendar all of the things a PLC should be and focused time on each one, you would need to add 'focus on results' with every other characteristic. It has to be a part of every PLC meeting. Results are the purpose for having a PLC. PLCs cannot survive if the members are not focused on results."

Strengths in the implementation of PLCs. The most frequent response was that, when implemented correctly, PLCs are a powerful vehicle for school change. One school improvement specialist stated, "PLCs shift the focus to our students instead of on us. They also help develop teacher leaders in our building." Six of the respondents discussed the implementation of PLCs as a tool used to strengthen the school community through collaboration and a shared sense of responsibility. One building administrator stated, "Teachers in our building no longer work as islands on their own. Everyone participates and everyone is focused on the same goal." Other strengths discussed included improved teacher practice and school culture. One administrator discussed the improvement in school culture and explained that as a result of the PLC work in their building, most teachers no longer distinguished between "my kids" and "your kids", but instead were looking at all students as their responsibility.

Barriers to the implementation of PLCs. The most frequently reported barriers to PLC implementation were time and buy-in. All ten respondents indicated both of these issues were barriers in the implementation of PLCs in their schools. Building administrators discussed time constraints and the heavy load that teachers already have to deal with on a daily basis. One administrator stated "There is just not enough time in the day to get everything done at the level we want to be sustaining." Planning time during the day is essential; however, it means using the teacher's planning time which is not popular, but sometimes necessary, in order to get the work accomplished. Alternatives to using teachers' planning time for PLC collaboration include coming early or staying late, but teachers cannot be required to stay to participate so not all teachers stay. That conflict leads directly to the other barriers: buy-in and accountability. One specialist stated, "Structure and depth of understanding are key components to successful PLCs. PLCs cannot function without a clear understanding of procedures, norms, and responsibilities of

all participants. Each teacher must participate and be held accountable to the group." One specialist also discussed teacher apathy and negative attitudes toward PLCs, further illustrating the importance of buy-in from the teachers. One specialist stated that buy-in from administrators was also important and suggested that if the administrator did not embrace the implementation of PLCs, the teachers would not embrace it either and the resulting PLC would be ineffective.

Ancillary Findings

The researcher also compared findings from this study with another study, "*Implementation and Perceived Effectiveness of Professional Learning Communities in the Kanawha County School District in West Virginia"* (Brucker, 2013). Category and total scores of the studies were compared for both implementation of PLCs and effectiveness of PLCs.

Category and total score data for implantation of PLCs from this study were lower in all categories and in the total score when compared to Brucker's (2013) study. This finding indicated that participating teachers at low-performing schools have a lower perception of implementation of PLCs than participating teachers of the districtwide study in which school performance was not considered as a demographic factor.

Only two of the seven categories scored lower in this study as compared to Brucker's study: Collective Inquiry and Action Orientation/Experimentation. Five of the seven categories had greater scores in this study as compared to Brucker's study. This finding would indicate that participating teachers at low-performing schools have a higher perception of PLC effectiveness in these areas as compared to the other study. The total score for level of effectiveness between the two studies differed by .21, with Brucker's study having the greater total score. In analyzing data, it is important to consider that all category and total scores were statistically significant between the two studies for level of implementation. Only one category showed a statistically

significant difference between the two studies for level of effectiveness. This indicated that the teachers in low-performing schools perceive PLCs to be as effective as teachers in the districtwide study; however, teachers in low-performing schools do not perceive the implementation level to be as strong as teachers in the districtwide study. Comparison data are presented in Tables 17 and 18.

Table 17

Comparisons of Category and Total Scores for Brucker and East Studies for Level of Implementation

	Brucker Study[1]		East Study[2]		
PLC Category/Totals	*M*	*SD*	*M*	*SD*	*t* value
Shared Leadership					
Sum of items a, b, c	11.99	2.56	10.98	2.74	-3.65*
Shared Mission					
Sum of items d, e, f	12.18	2.72	11.38	2.64	-3.01*
Collaboration					
Sum of items g, h, i	11.89	2.82	11.20	2.43	-2.80*
Collective Inquiry					
Sum of items j, k, l	11.28	2.93	9.41	2.43	-7.63*
Action Orientation/Exp.					
Sum of items m, n, o	11.01	2.87	10.32	2.53	-2.71*
Continuous Learning					
Sum of items p, q, r	11.21	2.85	10.19	2.56	-3.94*
Results Orientation					
Sum of items s, t, u	12.81	2.28	11.11	2.69	-6.24*
Total Level of Implementation	82.38	16.16	74.59	14.82	-5.20*

[1]$n = 969$: [2]$n = 98$ *$p < 0.05$

Table 18

Comparisons of Category and Total Scores for Brucker and East Studies for Level of Effectiveness

	Brucker Study[1]		East Study[2]		
PLC Category/Totals	*M*	*SD*	*M*	*SD*	*t* value
Shared Leadership Sum of items a, b, c	10.28	4.28	10.38	3.04	0.32
Shared Mission Sum of items d, e, f	10.37	4.45	10.43	3.15	0.18
Collaboration Sum of items g, h, i	10.35	4.44	10.59	2.80	0.86
Collective Inquiry Sum of items j, k, l	10.01	4.39	9.23	2.70	-2.85*
Action Orientation/Exp. Sum of items m, n, o	9.87	4.27	9.76	2.82	-0.40
Continuous Learning Sum of items p, q, r	10.14	4.38	10.50	2.68	1.33
Results Orientation Sum of items s, t, u	10.89	4.47	10.82	2.62	-0.28
Total Level of Effectiveness	71.91	29.42	71.70	16.81	-.12

[1]$n = 969$: [2]$n = 98$: *$p < 0.05$

Summary of Findings

The purpose of this chapter was to present data gathered to examine the levels of implementation and effectiveness of professional learning communities in improvement schools in West Virginia. Respondents were asked to rate their levels of implementation and effectiveness on 21 indicator items and provide suggestions to enhance and improve the PLC experience. Additionally, 10 administrators and school improvement specialists were interviewed. They were asked 14 questions about their perception concerning the level of implementation of PLCs and the level of effectiveness of PLCs based on the seven characteristics of PLCs (Hannaford, 2010). They were also asked to identify strengths of PLCs and to identify any barriers to implementing PLCs.

In general, teachers described the level of implementation of the indicator items for PLCs in their schools as occurring some of the time or most of the time. When they were asked to describe the level of effectiveness of these indicator items, the teachers responded with effective, very effective, or extremely effective. These same patterns were evident when both implementation and effectiveness responses were analyzed by category and total. Data analyzed by demographic criteria showed no statistically significant difference for either levels of implementation or levels of effectiveness. This finding was true for all demographic variables studied (year of teaching experience, grade/developmental level taught, and sex). Correlation coefficients indicated that the relationships between implementation and effectiveness for categories and total scores were strong and positive (Salkind, 2004). When teachers were asked to provide suggestions to enhance the PLC experience in their school, teachers favored training and content-area instruction. The greatest challenges to PLCs included time and accountability.

Cronbach's alpha results indicated a desirable level of reliability overall for implementation and effectiveness categories for the survey instrument. Coefficients reflected a desirable level (above .7) for all seven categories and for the total implementation and effectiveness scales.

Interview findings suggested that administrators and school improvement specialists view PLCs as a tool for school improvements. Responses indicated that a cyclical relationship between the implementation of PLCs and the level of effectiveness regarding each of the seven characteristics of PLCs. Strengths of PLCs in improvement schools were increased collaboration and sense of responsibility. Barriers to the PLC experience in improvement schools included time and buy-in from teachers. There was a consensus among all of the interviewees that there was a cyclical relationship between the level of implementation of PLCs and the level of effectiveness of the characteristic of the PLC on the school. In many instances, the implementation of the PLC created or enhanced the PLC characteristic among teachers which, in turn, strengthened the PLC.

Ancillary findings showed differences in perceptions of participants of the two studies. Comparison data indicated that participants in the districtwide study had a greater perception of implementation of PLCs than did participants of the low-performing schools. However, teachers participating in the low-performing schools perceived effectiveness of PLCs at higher levels in all but two categories. These data illustrates that teachers in the low-performing schools perceived PLCs to be effective; however, they also perceived them as not fully implemented. Data also indicated that the districtwide study reported higher total scores for both implementation and effectiveness.

CHAPTER FIVE:

CONCLUSIONS, IMPLICATIONS, AND RECOMMENDATIONS

Introduction

This chapter reviews the purpose of the study, research questions, demographic data, methods, and summarizes the findings. The chapter concludes with a presentation of conclusions for the eight research questions, recommendations for further research, and concluding remarks.

Purpose of the Study

The purpose of the study was to assess and describe the levels of implementation and effectiveness of PLCs as perceived by teachers in improvement schools in West Virginia by the following PLC characteristics: shared leadership, shared mission, collaboration, collective inquiry, action orientation and experimentation, continuous learning, and results orientation (Hannaford, 2010). The study further assessed the perceptions of school administrators and improvement specialists of these improvement schools in the same PLC characteristics. The study also examined differences, if any, in levels of implementation and effectiveness of PLCs based on organizational structure, total years of teaching experience, grade/developmental level taught, and sex. Additionally, this study examined what relationships, if any, existed between the levels of PLC implementation and PLC effectiveness. Lastly, this study identified suggestions to enhance the PLC experience as well as barriers that challenged PLC implementation. The following research questions guided the study:

1: What is the current level of implementation, as perceived by teachers, administrators, and School Improvement Specialists, of Professional Learning Communities in improvement schools in West Virginia?

2: Based on specific Professional Learning Community characteristics, how has the level of implementation of Professional Learning Communities affected particular schools?

3: What differences, if any, exist in the implementation levels, as perceived by teachers, of Professional Learning Communities in improvement schools in West Virginia, based on selected independent variables?

4: What is the level of effectiveness, as perceived by teachers, administrators, and school improvement specialists, of Professional Learning Communities in improvement schools in West Virginia?

5: Based on specific Professional Learning Community characteristics, how has the level of effectiveness of PLCs affected particular schools?

6: What differences, if any, exist in the effectiveness levels, as perceived by teachers, of Professional Learning Communities at improvement schools in West Virginia, based on selected independent variables?

7: What are teachers' and administrators' suggestions to enhance their experience with PLCs?

8: What are teachers' and administrators' greatest challenges with PLCs?

Demographic Data

The population for this study included teachers, administrators, and School Improvement Specialists in improvement schools in West Virginia during the 2013-2014 school year. The population included six schools, five elementary and one K-8 configuration, which housed approximately 193 professional teaching staff, 12 administrators and four specialists. Two of the schools declined to participate in the study. The four participating schools were comprised of

133 professional teaching staff, five administrators, and five school improvement specialists. All teachers, administrators, and school improvement specialists were included in the sample.

Methods

The study used a mixed methods design (Johnson, 2004) including a cross-sectional descriptive survey of teachers and a semi-structured interview of building administrators and School Improvement Specialists (Fink, 2003). The survey collected data on all improvement schools at one specific point in time. In addition to the survey, building level administrators and state or county improvement specialists participated in a semi-structured interview examining each of the elements targeted in the survey. The survey instrument was a modified version of the *Implementation and Effectiveness of Professional Learning Communities Survey* developed by Elizabeth Brucker (2013). The modified survey consisted of three parts. Part A contained demographic and attribute questions. Part B consisted of two open-ended response questions asking respondents to offer suggestions to enhance the PLC experience and to identify challenges to the PLC experiences. Part C consisted of two, 5-point scales, one for level of implementation and one for level of effectiveness. Participants used the scales to indicate their perceived level of implementation of PLCs and their perceived level of effectiveness of PLCs based on 21 PLC characteristics.

This survey and a collection box were delivered to each of the school administrators by the Co-Principal Investigator. School administrators and school improvement specialists in each building distributed the survey instrument along with a cover letter and envelope to all teachers in their buildings. Teachers were given the opportunity to complete the survey and return it in an envelope to a collection box located at a designated place in the building. The co-investigator returned to each location to collect the boxes of returned surveys. Administrator and school

improvement specialist interviews were conducted by the Co-Principal Investigator in person or over the telephone.

Data collected to address research questions 1 and 4 were analyzed by individual item, category, and total for implementation and effectiveness. Mean scores and standard deviations were calculated for each item, category, and the total score. A one-sample, *t*-test was conducted to determine the level of significance with $p<0.05$. The sample means for each item, category, and total score were compared to the means from the hypothetical normal distributions for each item, category, and total score. Data collected in response to research questions 3 and 6 were analyzed using an independent sample *t*-test for variables with two groups and an analysis of variance for variables with more than two groups. Each demographic variable was analyzed based on level of PLC implementation and effectiveness. Research questions 2, 5, 7 and 8 were addressed by using emergent category analysis to categorize responses around common themes. Percentages were calculated for the most frequent responses.

Summary of the Findings

Generally, teachers participating in the survey described the level of implementation in their school for the 21 PLC indictors as some of the time or most of the time. When asked to describe the level of effectiveness using the same 21 PLC indicators, teachers described PLCs as effective. No statistically significant differences were found for total level of PLC implementation based on organizational structure, grade/developmental level taught, total years of teaching experience, or sex.

Teachers' suggestions to enhance the PLC experience in their schools most often described changes in logistics of PLC (scheduling) and training for teachers involved. Other suggestions were related to time and content. Teachers reported that the greatest barrier to PLC

implementation was time. Additional barriers included accountability and negative attitudes/negative response to change. Administrators and school improvement specialists repeatedly stated that the relationship between the levels of implementation and the levels of effectiveness were dependent upon one another: as the level of implementation progresses, the level of effectiveness increases.

Conclusions

Data collected as a part of this study were sufficient to support the following conclusions:

Levels of PLC Implementation. Participating teachers reported PLCs to be implemented some or most of the time (Scale: 1 = Rarely, 2 = Infrequently, 3 = Some of the time, 4 = Most of the time, 5 = All of the time). The level of implementation was consistent across the 21 indicator items, the seven categories, and the total implementation score. Interview findings supported survey results.

How Implementation Affects Schools. Administrators and School Improvement Specialists indicated that PLCs had been implemented and worked well in most cases. Concerns were with training new staff after turnover and time constraints.

Levels of Implementation Based on Demographic Variables. There were no significant differences in category or total levels of implementation for any of the selected demographic variables that could be analyzed: total years teaching experience, grade/developmental level taught, or sex. Interview findings support survey results. (However, data on differences based on organizational structure could not be analyzed because of duplicated responses.)

Levels of PLC Effectiveness. Overall, participating teachers reported PLCs to be effective (Scale: 1 = Of little effectiveness, 2 = Somewhat effective, 3 = Effective, 4 = Very

effective, 5 = Extremely effective). The level of effectiveness was consistent across the 21 indicator items, the seven categories, and the total effectiveness level. Interview findings supported survey results.

How PLC Effectiveness Affects Schools. Administrators and school improvement specialists indicated PLC implementation had increased the effectiveness of PLCs and each of the common characteristics of PLCs demonstrated in the school.

Levels of Effectiveness Based on Demographic Variables. There were no significant differences in category and total levels of effectiveness for any of the selected demographic variables: total years teaching experience, grade/developmental level taught, or sex. Interview findings support survey results. (However, data on differences based on organizational structure could not be analyzed because of duplicated responses.)

Suggestions to Enhance PLCs. Teachers most frequently reported suggestions related to logistics and training. Those responses related to logistics included requiring less paperwork, changing the day, time, and/or location of the meetings. Those responses related to training included establish norms, hold teachers accountable, guidelines for participation, and staying on task/remaining focused. Next, teachers reported suggestions related to content and time. Those responses related to content included addition of related arts, special education, and Title I teachers to meetings; have different grade levels or alternate group members, more hands on work and research on a variety of topics.

Challenges to the Implementation of PLCs. Teachers most frequently reported suggestions were related to time, accountability, and negative attitude/response to change. Those responses related to time indicated that teachers' felt there was not enough time to properly conduct a meeting, planning periods were used to conduct meetings and teachers did not have

time to give to PLCs with other demands they already had. Comments included that teachers did not participate outside of regular hours and there were too many other things to do during planning times. Also, multiple comments reflected scheduling difficulties and the inability to schedule a common planning time with their colleagues. Those responses related to accountability, attitude, and response to change indicated that some teachers had a negative attitude toward participating in PLCs and were not open to change. They also indicated that all teachers should participate and all teachers should be held accountable for the work that is done in the PLC.

Discussion and Implications

The study findings provide a basis upon which identified improvement schools' PLCs can be evaluated, teacher efficacy may be strengthened through professional development, and student learning may increase. The overall response rate (74%) and categories that emerged from open-ended responses suggested a substantial level of interest in the topic from teachers, administrators, and school improvement specialists.

The population of schools for this study was identified because each school had been designated as a low-performing school, placed on improvement status, and received School Improvement Grant funds to help facilitate growth and school improvement. Each of the participating schools was finishing the third and final year of the grant. Schools accepting the grant received additional training and guidance focusing on school reform that included training on implementation of PLCs in the schools. Schools receiving the grant and training were given the charge to implement PLCs as a best practice for school improvement. Research has supported implementation of PLCs in low-performing schools to increase student achievement, provided that the schools are organized as such (Lee, 1995).

Levels of Implementation. Study findings for the levels of implementation of PLCs indicate that teachers believe PLCs are implemented some of the time or most of the time. The highest levels of implementation were in the areas of setting benchmarks for student progress and knowledge of school's mission. PLCs work best when there is a focus on student achievement and all teachers are fully accountable for the work that is done in the PLC which leads to the classroom in order to meet the mission and goals of the school (Crowley, 2015).

Another item receiving high levels of response was having a supportive principal. Morrissey (2000) stated that the leadership capacity of the principal is critical in implementation of PLCs. The principal develops people capacity within a school, providing opportunities for people to work together and learn together in a positive working environment. The principal's role is a delicate balance of support and pressure while releasing old ideas of the role of the principal.

Additionally, sharing of ideas and suggestions also received a high level of response from teachers for both implementation and effectiveness. A culture of collaboration is necessary for PLCs to thrive. Research has supported collaboration as a critical component of successful PLCs as they influence a spirit of professional respect and trust, motivating teachers to work together as a team (Morrissey, 2000).

Category totals indicated that teachers perceive an emphasis on building a shared mission is critical to the successful implementation of PLCs, as this item received the highest category response rate. Research has suggested schools with a sense of shared mission and vision are able to commit to student learning and support individual and community improvement (Hord, 1995).

Differences in Levels of Implementation Based on Independent Variables. Differences were examined in perceptions of PLC implementation levels for each of the seven

PLC categories and for the total level of implementation for these independent variables: organizational structure, total years teaching experience, grade/developmental level taught, and sex. There were no statistically significant differences in PLC implementation based on any of these variables; however, the literature has illustrated that demographic factors such as level of teaching experience can affect the implementation of PLCs (Curry, 2010). Although research supports differences in levels of implementation based on years of experience, this study did not have data to concur. In cases of low performing schools, other factors may possibly override teaching experience in the implementation of PLCs. The study found a positive relationship between grade level and implementation of PLCs.

There were no statistically significant differences in PLC implementation based on total years of teaching experience for any of the seven categories or total level of implementation. Teachers in the 3-8 year experience group reported the highest level of implementation. When analyzing data, it is interesting to note the rank order of categories by each group of teachers. This order could be indicative of the focus and comfort level of participation for teachers. The 1-2 year/s of experience group ranked shared mission and then shared leadership as highest implementation, indicating that PLCs are focused on a school-wide goal and are more influenced by leadership, as if this group is learning the structure and procedures of participating in a PLC. The 3-8 years group reported collaboration and shared mission as the highest-ranking categories. As teachers progress in their careers, they have learned the PLC structure and are more focused on the collaborative relationships that are built through PLCs while still adhering to the school-wide mission. These teachers are starting to mature in their roles within the PLC. The 10-19 years group exhibited a focus on collaboration and results orientation. This perspective illustrated further maturation and the recognition of their role in the PLC process. The 20-40

years group also reported highest implementation in results, shared mission, and collaboration indicating that more experienced teachers use PLCs to collaborate with others to reach school goals.

Statistically significant differences in PLC implementation based on grade/developmental level taught were not found. Data shows that both elementary and middle school teachers reported shared mission and collaboration as high priorities for implementation of PLCs as both groups had results for these categories as they were two of the highest three for each group. Many times, PLCs will occur across grade levels within a building (PreK-Kindergarten, 3rd – 5th); however, they do not typically span across a grade band (elementary to middle) (Heitin, 2015). When analyzing differences between males and females, no statistically significant differences were found; however, both groups' results indicated that shared mission, collaboration, and results orientation are perceived to be the highest level of implementation of PLCs.

Levels of Effectiveness. The study findings for the levels of effectiveness of PLCs indicated that teachers believe PLCs are effective. The highest levels of effectiveness were reported in the area of supportive principal, nurturing environment, and setting benchmarks for student progress. Each of these response levels indicated that teachers participating in this study concurred with the body of research that exists supporting these attributes as indicators of successful PLCs. Research has indicated that the principal is critical in creating a supportive environment that is conducive to teacher learning and working (Morrissey, 2000). Research has also suggested that in order for PLCs to be successful, they must focus on assessment of student work and make necessary modifications to instruction (Schmoker, 2005).

Differences in Levels of Effectiveness Based on Independent Variables. Differences were examined in perceptions of PLC effectiveness levels for each of the seven PLC categories and the total level of implementation for these independent variables: organizational structure, total years teaching experience, grade/developmental level taught, and sex. There were no statistically significant differences in PLC effectiveness based on any of these variables; however, research has illustrated that demographic factors such as level of teaching experience can affect the effectiveness of PLCs (Curry, 2010).

Although there are no statistically significant differences based on demographic factors, there are interesting data reported. Examining data based on total years of teaching experience, the 1–2 year/s group reported the highest perceived level of effectiveness with a priority on continuous learning. This was interesting because this group had reported the lowest perceived level of implementation. The 3-8 years group reported a higher priority on collaboration while both the 10–19 years group and the 20–40 years group reported higher priorities of results orientation. As discussed earlier, the experience level of the teacher may influence what they value from participating in a PLC. Elementary and middle school data were not statistically significant; however, both groups reported collaboration, continuous learning, and results orientation as the highest level of perceived effectiveness of PLCs. With a focus on results, teachers view the PLC as an effective way to ensure that all students learn as teachers are able to collaborate with peers on formative and summative assessments.

Suggestions to Enhance the PLC Experience. Sixty-five responses were recorded to the open-ended response question regarding suggestions to enhance the PLC experience. Of the 65 responses, 18 were related to improving logistics of PLCs that existed in their schools. Suggestions included changing the time or location of the PLC meetings, requiring less

paperwork of the PLC, and defining teams differently. A study by Graham (2007) has also cited team configuration as a powerful indicator of team success. Next, 15 teachers suggested that additional or improved training would enhance the PLC experience at their school. Responses indicated that more training in setting up the teams and holding all members accountable would be beneficial to the success of the PLCs. Training new teachers so that the process does not get lost when a teacher leaves and another fills the vacancy was also recommended.

In addition to logistical changes, teachers wanted more effective training. Research has suggested this need for more effective training because often participants lack skill to collaborate (Lujan, 2009). Through the SIG grant, most mandated professional development or instructional strategies are brought to the school through the school improvement specialist, principal, and School Leadership Team (SLT). In the improvement process, the SLT is the first PLC to be implemented. This base gives the principal and team members a positive working model of a PLC. After the SLT is established, the school will develop additional PLCs based on the individual school's needs. The PLCs could be grade-level teams, content-area teams, school-wide teams, etc. The issue with training is that often high rates of turnover in low-performing schools result in a cycle of train and retrain. Sometimes PLCs cannot gain any traction toward their goals because they are forced to start over when teachers leave. A solution to this issue is to train any substitute teacher that works in the school as well as make collaboration and PLC a priority for instruction in teacher prep programs at colleges and universities.

Barriers to the PLC Experience. Sixty-five responses were recorded to the open-ended question asking what barriers threaten the implementation of PLCs. Of the 65 responses, 38 reported that time was a challenge to the implementation and effectiveness of the PLCs in their schools. Responses identified problems scheduling PLC meetings during the workday, yet often

teachers will not stay to participate after school hours. Additionally, daily schedules do not provide teachers enough time to adequately conduct a meeting with results, and common planning times were not always possible with scheduling constraints placed on schools. Teachers reported that they needed additional time during the meetings to discuss issues and develop ideas. Research has noted that the limitations of appropriate time to meet and work together is a barrier to implementation and effectiveness of PLCs (Hughes-Hassell et al., 2012; Lujan & Day, 2010.)

Lack of accountability and poor attitude were also reported by teachers as having detrimental effects on PLC implementation and effectiveness. Research has confirmed this negative attitude as a barrier to effective PLC implementation (Annenberg Institute for School Reform, 2004). In low-performing schools, a number of directives are issued top-down. Negative attitudes may be attributed to the additional responsibilities of participation on top of the numerous other daily responsibilities that teachers have. This top-down approach could also lead to a negative view of PLCs because of the requirement to implement. This circumstance is when the principal and school leaders must step forward and promote the benefits of PLCs in order to change the attitude to positive. Another issue with low-performing schools is that they are trapped in a cycle of high teacher turnover which affects PLC implementation directly. PLCs take time to develop properly. Teachers are trained and as the PLC meetings take place, teachers become more familiar with the process as well as with trusting each other. When teachers leave regularly and new ones replace them, the training must start over and the process of trusting one another also begins again. PLCs in low-performing schools often face this challenge. As a result, some teachers have a negative attitude because they are not able to see the positive changes collaboration can have simply because it is often broken by issues out of the control of the

teachers and the school. This cycle leads to a pessimistic outlook and fosters the idea that working in isolation is better. Teachers are not able to take ownership of their own PLC because so much time is taken to train and retrain teachers.

Recommendations for Further Research

This study examined and provided understanding into the levels of implementation of PLCs and the levels of effectiveness of PLCs in improvement schools in West Virginia. The study also determined the differences in levels of implementation and the levels of effectiveness based on selected independent variables: organizational structure, total years of teaching experience, grade/developmental level, and sex. Finally, the study investigated teachers' suggestions to enhance the PLC experience and barriers that hindered the implementation and effectiveness of PLCs. Based on study findings, the following recommendations for further research are provided:

1. This study focused on a select number of schools in the final year of a school improvement grant. Expanding this study to include schools newly identified as improvement schools may provide additional data that would support general conclusions and implications regarding PLC implementation and effectiveness to improve student learning.
2. This study was conducted using a one-shot survey instrument. Developing a pre-survey to be administered to teachers working in schools beginning the improvement cycle would provide baseline data of perceptions of level of implementation and effectiveness of PLCs. A final survey could be administered to teachers again after the school had completed the established three-year improvement cycle. Additionally, the survey could be given at the end of each school year to measure progress for that year and provide

ongoing data. Administering the survey annually to those teachers participating in the baseline would address the issue of teacher retention. This type of study may provide comparative data of perceived implementation and effectiveness of PLCs over time.

3. The survey instrument in this study included two open-ended items asking participants to identify suggestions to enhance the PLC experience and barriers that hindered the implementation of PLCs. Providing teachers with the option to expand on their suggestions through more qualitative research techniques such as focus groups or interviews may provide a more comprehensive understanding of teachers' perceptions associated with implementation and effectiveness of PLCs.
4. This study focused on schools identified as low-performing with a mandate to implement PLCs with the support and guidance of state agencies. A study of average or high-performing schools choosing to implement PLCs would provide a comparison of teacher perceptions of levels of implementation and levels of effectiveness of PLCs in their schools.

Concluding Remarks

Study findings provide a foundation for improvement schools in West Virginia and West Virginia Department of Education officials. Teachers in the identified schools described the levels of PLC implementation in their schools as some of the time to most of the time and their belief in the levels of effectiveness of PLCs to improve student learning as effective. Additionally, participants identified suggestions to enhance their PLC experience and barriers that mired implementation of the PLC in their buildings.

Teachers', administrators', and school improvement specialists' perceptions that PLCs display high levels of implementation and effectiveness in improvement schools may

significantly increase the usefulness of PLCs as a key component of the school improvement process. Perceptions of high levels of implementation and effectiveness validate that this method of school reform has significance to those who believe that PLC implementation is an effective tool for teachers to utilize to improve student learning.

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Appendix A:

SIG Schools in West Virginia 13-14 SY

County	School	Administrator	School Improvement Specialist	13-14 WVDE Designation
Hampshire	Romney Elementary School	Patty Lipps	Tom Dooley	Transition
Kanawha	Watts Elementary School*	Evelyn Haynes	Michelle Blatt/Erin Sullivan	Priority
Kanawha	West Side Elementary School*	Mellow Lee	Michelle Blatt/Erin Sullivan	Priority
McDowell	Southside K-8	Flo McGuire	Nelson Spencer/Leatha Williams/Lu'Juana Booker	Priority
McDowell	Welch Elementary School	Kristy East	Nelson Spencer/Leatha Williams	Transition
Roane	Spencer Elementary School	David Boggs	Brenda Chadwell	Support

*Declined to participate in the survey and interviews.

Appendix B:

Survey Instrument

Implementation and Effectiveness of Professional Learning Communities Survey

Part A: Background Information - Please provide the following information.

1. How many total years of full-time teaching experience, including current year, do you have?
   (Please give number of years.)

   _____ years

2. What grade/developmental level do you currently teach?
   (Please circle one choice.)

   Elementary Middle High

3. What is your sex?
   (Please circle one choice.)

   Male Female

4. Which of the following best describes the organizational structure of the professional learning community (PLC) in which you participate?
   (Please mark your choice.)

   _____ Grade Level
   _____ Subject/Department
   _____ Team
   _____ Schoolwide
   _____ Other (Please specify.) _____

Part B: Open-ended response questions – Please answer the following questions.

1. What suggestions do you have to enhance the PLC experience in your school?

2. What have been the greatest barriers with PLCs in your school?

<u>Part C:</u> Following is a list of characteristics of Professional Learning Communities. Using the scale provided in Column A, please rate each of the characteristics in terms of the current implementation level within your Professional Learning Community. Using the scale provided in Column B, please rate each of the characteristics in terms of its effectiveness to positively impact student learning.

Characteristics of Professional Learning Communities	Rarely	Infrequently	Some of the time	Most of the time	All of the time	Of little effectiveness	Somewhat effective	Effective	Very effective	Extremely effective
1. Shared decisions and responsibilities.	1	2	3	4	5	1	2	3	4	5
2. Shared roles.	1	2	3	4	5	1	2	3	4	5
3. Supportive principal.	1	2	3	4	5	1	2	3	4	5
4. Knowledge of school's mission.	1	2	3	4	5	1	2	3	4	5
5. Decisions influenced by school's mission.	1	2	3	4	5	1	2	3	4	5
6. Shared responsibility for mission.	1	2	3	4	5	1	2	3	4	5
7. Meaningful collaboration.	1	2	3	4	5	1	2	3	4	5
8. Staff training in collaborative process.	1	2	3	4	5	1	2	3	4	5
9. Sharing of ideas and suggestions.	1	2	3	4	5	1	2	3	4	5
10. Sharing of current research.	1	2	3	4	5	1	2	3	4	5
11. Critical dialogue of experience.	1	2	3	4	5	1	2	3	4	5
12. Inquiry-based learning.	1	2	3	4	5	1	2	3	4	5
13. Experiment with new methods.	1	2	3	4	5	1	2	3	4	5
14. Address goals to achieve mission.	1	2	3	4	5	1	2	3	4	5
15. Hold one another accountable.	1	2	3	4	5	1	2	3	4	5
16. Emphasize continuing education.	1	2	3	4	5	1	2	3	4	5
17. View every opportunity and experience learning.	1	2	3	4	5	1	2	3	4	5
18. Nurturing environment.	1	2	3	4	5	1	2	3	4	5
19. Sharing student progress.	1	2	3	4	5	1	2	3	4	5
20. Sharing methods of remediation.	1	2	3	4	5	1	2	3	4	5
21. Set benchmarks for student progress.	1	2	3	4	5	1	2	3	4	5

Appendix C:

Administrator and School Improvement Specialist PLC Interview Guide

Professional Learning Communities have seven common characteristics: shared leadership, shared mission, collaboration, collective inquiry, action orientation and experimentation, continuous learning, and results orientation. The following interview questions will seek to gain an understanding of your perception of how these characteristics affect the current level of implementation of PLCs and the current level of effectiveness of PLCs in the school.

1. As the building administrator/School Improvement Specialist, what is your perception of how the implementation of PLCs has affected shared leadership within the school?
2. As the building administrator/School Improvement Specialist, what is your perception of how shared leadership within the school has affected the level effectiveness of PLCs?
3. As the building administrator/School Improvement Specialist, what is your perception of how the implementation of PLCs has affected establishing a shared mission within the school?
4. As the building administrator/School Improvement Specialist, what is your perception of how establishing a shared mission has affected the level effectiveness of PLCs within the school?
5. As the building administrator/School Improvement Specialist, what is your perception of how the implementation of PLCs has affected collaboration within the school?

6. As the building administrator/School Improvement Specialist, what is your perception of how collaboration has affected the level effectiveness of PLCs within the school?
7. As the building administrator/School Improvement Specialist, what is your perception of how the implementation of PLCs has affected collective inquiry within the school?
8. As the building administrator/School Improvement Specialist, what is your perception of how collective inquiry has affected the level effectiveness of PLCs within the school?
9. As the building administrator/School Improvement Specialist, what is your perception of how the implementation of PLCs has affected action orientation and experimentation within the school?
10. As the building administrator/School Improvement Specialist, what is your perception of how action orientation and experimentation has affected the level effectiveness of PLCs within the school?
11. As the building administrator/School Improvement Specialist, what is your perception of how the implementation of PLCs has affected continuous learning within the school?
12. As the building administrator/School Improvement Specialist, what is your perception of how continuous learning has affected the level effectiveness of PLCs within the school?

13. As the building administrator/School Improvement Specialist, what is your perception of how the implementation of PLCs has affected results orientation within the school?
14. As the building administrator/School Improvement Specialist, what is your perception of how results orientation has affected the level effectiveness of PLCs within the school?
15. What strengths, if any, do you perceive exist in the implementation of PLCs in improvement schools?
16. What barriers, if any, do you perceive exist in the implementation of PLCs in improvement schools?

Appendix D:

Cover Letter

Dear Educator,

You are invited to participate in an anonymous research survey entitled, **"A Study of Professional Learning Communities: Characteristics of Implementation and Perceived Effectiveness in Improvement Schools in West Virginia"**. The study is being conducted by Dr. Ronald B. Childress and Kristy East from Marshall University and has been approved by the Marshall University Institutional Review Board (IRB). This research is being conducted as part of the dissertation for Kristy East.

The survey is comprised of a two-page paper questionnaire which will take approximately 15 minutes to complete. Your replies will be anonymous. Participation is completely voluntary. If you choose to withdraw or not participate there is no penalty or loss of benefits; you may either return or discard the blank survey. You may choose to not answer any question by simply leaving it blank. By completing this survey, you are also confirming that you are 21 years of age or older.

Please return the completed survey to the survey collection box in your school office by the end of the second work week following receipt of this letter.

Thank you for your assistance with this survey. If you have any questions about the survey you may contact me by phone at (304) 320-7210 or by email at keast@access.k12.wv.us. If you have questions concerning the rights of teachers participating in this research process, you may contact the Marshall University Office of Research Integrity at (304) 696-4303. Dr. Ron Childress, principal investigator for this study, may be reached at rchildress@marshall.edu or (304) 746-1904.

Thank you,

Kristy A. East

Appendix E:

IRB Stamped Document

Marshall University IRB

Approved on:	4/23/14
Expires on:	4/23/15
Study number:	590587

Survey Cover Letter

Dear Educator,

You are invited to participate in an anonymous research survey entitled, **"A Study of Professional Learning Communities: Characteristics of Implementation and Perceived Effectiveness in Improvement Schools in West Virginia"**. The study is being conducted by Dr. Ronald B. Childress and Kristy East from Marshall University and has been approved by the Marshall University Institutional Review Board (IRB). This research is being conducted as part of the dissertation for Kristy East.

The survey is comprised of a two-page paper questionnaire which will take approximately 15 minutes to complete. Your replies will be anonymous. Participation is completely voluntary. If you choose to withdraw or not participate there is no penalty or loss of benefits; you may either return or discard the blank survey. You may choose to not answer any question by simply leaving it blank. By completing this survey, you are also confirming that you are 21 years of age or older.

Please return the completed survey to the survey collection box in your school office by the end of the second work week following receipt of this letter.

Thank you for your assistance with this survey. If you have any questions about the survey you may contact me by phone at (304) 320-7210 or by email at keast@access.k12.wv.us. If you have questions concerning the rights of teachers participating in this research process, you may contact the Marshall University Office of Research Integrity at (304) 696-4303. Dr. Ron Childress, principal investigator for this study, may be reached at rchildress@marshall.edu or (304) 746-1904.

Thank you,

Kristy A. East

Appendix F:

IRB Approval Letter

w w w . m a r s h a l l . e d u

Office of Research Integrity
Institutional Review Board 401
11th St., Suite 1300
Huntington, WV 25701

FWA 00002704

IRB1 #00002205
IRB2 #00003206

April 23, 2014

Ronald Childress, EdD
College of Education and Professional Development

RE: IRBNet ID# 590587-1
At: Marshall University Institutional Review Board #2 (Social/Behavioral)

Dear Dr. Childress:

Protocol Title:	[590587-1] A Study of Professional Learning Communities: Characteristics of Implementation and Perceived Effectiveness in Improvement Schools in West Virginia	
Expiration Date:	April 23, 2015	
Site Location:	MUGC	
Submission Type:	New Project	APPROVED
Review Type:	Exempt Review	

In accordance with 45CFR46.101(b)(2), the above study and informed consent were granted Exempted approval today by the Marshall University Institutional Review Board #2 (Social/Behavioral) Designee for the period of 12 months. Written permission must be obtained from the school prior to distributing any surveys. The approval will expire April 23, 2015. A continuing review request for this study must be submitted no later than 30 days prior to the expiration date.

This study is for student Kristy East.

If you have any questions, please contact the Marshall University Institutional Review Board #2 (Social/ Behavioral) Coordinator Bruce Day, ThD, CIP at 304-696-4303 or day50@marshall.edu. Please include your study title and reference number in all correspondence with this office.

VITA

KRISTY ANN EAST

Education

2015	EdD Curriculum & Instruction	Marshall University
2009	Administrative Certification (PK-Adult)	Marshall University
2005	MA Reading Specialist (PK – Adult)	Marshall University
2002	BS Elementary Education (K-6)	Concord University

Work Experience

2010 – Present	Principal Welch Elementary School
2003 – 2010	Teacher Anawalt Elementary School Berwind Elementary School
2009 – 2010	Part-time Instructor Marshall University