Professional Learning Communities: The Impact on Teacher Practice

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Abstract

The purpose of this research was to explore professional learning communities (PLCs) and their impact on teacher practice. The focus of this single case study was on reviewing the process of the implementation of a PLC (DuFour, DuFour, Eaker, & Many, 2010) within MidAtlantic Elementary School, a Title I school. This school implemented the PLC (DuFour et al., 2010) process following the guiding principles set forth by Richard and Rebecca DuFour and the MidAtlantic School District. The guiding principles include a shared vision and mission, collective inquiry, collaborative teams, action research and experimentation, continuous improvement, and being results oriented. By following these guiding principles, the goal was to show how this process improved teacher practice enough to help students be successful in the first year of opening the school and each consecutive year since the school opened. Results of this research showed the PLC (DuFour et al., 2010) process leads to improvements in teacher practice that positively affect student learning.

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General Audience Abstract

The purpose of this research was to explore professional learning communities (PLCs) and their impact on teacher practice. A PLC can be defined as a group of professionals who come together to create a culture of collaboration, and then develop a way to share their reflections related to their work. The focus of this single case study was on reviewing the process of the implementation of a PLC within one elementary school. The guiding principles included a shared vision and mission, collective inquiry, collaborative teams, action research and experimentation, continuous improvement, and being results oriented. Results of this research showed the PLC process led to improvements in teacher practice that positively affected student learning at this school. This is important, because it shows how the PLC (DuFour et al., 2010) process affects teachers' practice in a positive way. Implications for how this research might be used include (a) implementing the PLC (DuFour et al., 2010) process in middle and high schools to improve teacher practice, and (b) the importance of making sure teachers have buy-in for the PLC (DuFour et al., 2010) process throughout its implementation.

DEDICATION

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CHAPTER I: INTRODUCTION

Background of the Study

Prior to the formation of professional learning communities (PLCs), teachers worked in isolation, meaning they rarely planned together, shared materials or ideas, or collaborated about what was best for students. In the early 1980s, school transformations began to move toward an alignment on standards, accountability, and higher standards for teachers, which was in contradiction to the preceding decade (Blacklock, 2009; Ravitch, 2001). School reform increased impetus as the National Commission on Excellence in Education (NCEE, 1983) published *A Nation at Risk: The Imperative for Educational Reform*. The report showed that education within the nation was moving in the wrong direction. Since *A Nation at Risk* (NCEE, 1983) was published, several reform efforts have been put in place to bring about systemic improvements in the United States related to student achievement. These movements included the standards movement, the No Child Left Behind Act (NCLB, 2002), and, most recently, the Common Core State Standards (National Governors Association, 2010) with the goal of preparing students for college. As a result of these efforts, much attention has been given to the professional development of teachers to ensure new prospects for instruction and learning are met (Borko, 2004; Darling-Hammond, 1996; Darling-Hammond & McLaughlin, 1995). Moreover, researchers have pointed out that stand-alone professional development is less effective than on-site, ongoing professional development (Joyce & Showers, 2002). The focus of the current study was on how protocols and procedures are put in place to ensure PLCs are organized appropriately to provide ongoing learning and improve teacher practice.

Professional Learning Communities

True learning communities have been defined by disciplined professional collaboration and ongoing measurements—teachers do not learn best from outside authorities, by attending conferences, or by executing programs established by outsiders. Teachers learn best from other professional teachers in settings where they literally teach one another the art of teaching (D. R. Johnson, 2011; Schmoker, 2005). Accountability in education requires leaders and educators to look at ways to reform the current system to improve student learning. To provide this accountability in education, there is a need for educators to engage in increased learning and development within their field of expertise and develop better ways of collaboration. Allowing teachers an opportunity to gain professional development from other educators can help improve student learning. There seems to be a direct correlation showing the positive impact of PLCs on teaching practice and student learning. Reforming schools through PLCs is one way to improve student learning. Previous research has provided an outsider's perspective of PLCs and how group work can improve student learning; the current study involved an insider's perspective of how PLCs and group work can improve teachers' practices and student learning.

A PLC is defined by distinct characteristics and attributes. School leaders choosing to implement a PLC must cultivate a collaborative environment and begin to alter the focal point of their efforts from teaching to learning (DuFour & Eaker, 1998). Some researchers argue that five elements are required for a PLC. The first is collective learning or reflective dialogue, referring to the degree to which teachers participate in professional communication (Hord, 2004; Lomos, 2012; Louis & Kruse, 1995). Second

is shared leadership and practice or deprivatization of practice, meaning teachers observe one another's classes with the idea of giving and receiving feedback (Hord, 2004; Lomos, 2012). Hord (1997) asserted that teachers must apply new ideas and information to problem-solve and find solutions that will address students' needs (Stoll, 2010). Fullan (2004) claimed that tacit knowledge is constantly converted into shared knowledge through the interactions resulting from deprivatization.

The third element of PLCs is supportive conditions or collective responsibility where teachers engage in cooperative practices (Hord, 2004). There is extensive acknowledgement in the literature that members of a PLC routinely take mutual responsibility for student learning (King & Newmann, 2001; Kruse, Louis, & Bryk, 1995; Leithwood & Louis, 1998). The fourth element, shared values and vision and sense of purpose, refers to the degree to which teachers agree on the school's mission and operational principles (Hord, 2004; Lomos, 2012).

The fifth element, shared practice and collaborative focus on student learning, represents the commitment of teachers to help students be successful (Lomos, 2012). Collaboration refers to staff development, involving activities with ramifications for numerous people, going beyond cursory exchanges of help, support, or assistance (Louis & Kruse, 1995; Ramful, 2017), such as combined review and critical feedback (Hord, 1997). Feelings of interconnection are central to such collaborative efforts with the goal of developing better teaching processes. These activities are unattainable without the collaborative efforts of teachers, linking collaborative activity and acquisition of a shared purpose (Newmann & Wehlage, 1995; Ramful, 2017). These five elements are reflected in the six guiding principles of the PLC framework espoused by the DuFours. Below are

the definitions set forth to describe the six guiding principles of the PLC (DuFour, DuFour, Eaker, & Many, 2010) framework.

As a part of the PLC (DuFour et al., 2010) framework, there are six guiding principles that are followed by numerous school organizations that implement the guiding principles:

- Action orientation – Here teams turn aspirations into action and vision into reality by realizing the most powerful learning is done by action and engagement in an experience (DuFour et al., 2010).
- Collective inquiry – This allows grade-level teams to acquire new skills and capabilities that lead to new experiences and awareness (DuFour et al., 2010).
- Continuous improvement – Through a systematic approach, members of the organization move through an ongoing cycle and create conditions for perpetual learning (DuFour et al., 2010).
- Results oriented – Being results oriented means each grade-level team develops and pursues measurable improvement goals. The goals align with the school and district goals for student learning (DuFour et al., 2010).
- Shared vision and mission – Vision provides a direction and basis for assessing the current reality of a school and what a school must become to accomplish its purpose (DuFour et al., 2010). The mission asks why the organization exists and what is its fundamental purpose (DuFour et al., 2010).

With these elements as part of a PLC, teachers are able to share the mission of the school, make sure they focus on how students learn, and collaborate with one another using assessments to inform instruction (Hord, 2004). The learning that happens as part

of participation within collaborative learning teams (CLTs) is the most relevant and meaningful part of a CLT. The literature shows that as part of a PLC, teachers participate in reflective dialogue, which leads to more conversations about curriculum, instruction, and student development (Newmann & Wehlage, 1995). A more in-depth discussion of this literature can be found in Chapter II. Figure 1 is a diagram of the CLT cycle that is followed within the MidAtlantic school district that was the focus of this research, along with the guiding principles reviewed as part of this research. Figure 1 shows the procedures and routines the members of CLTs follow in meetings as they discuss student learning, have data dialogues, share instructional strategies, and plan for next steps in the process of improving teacher practice and student learning.

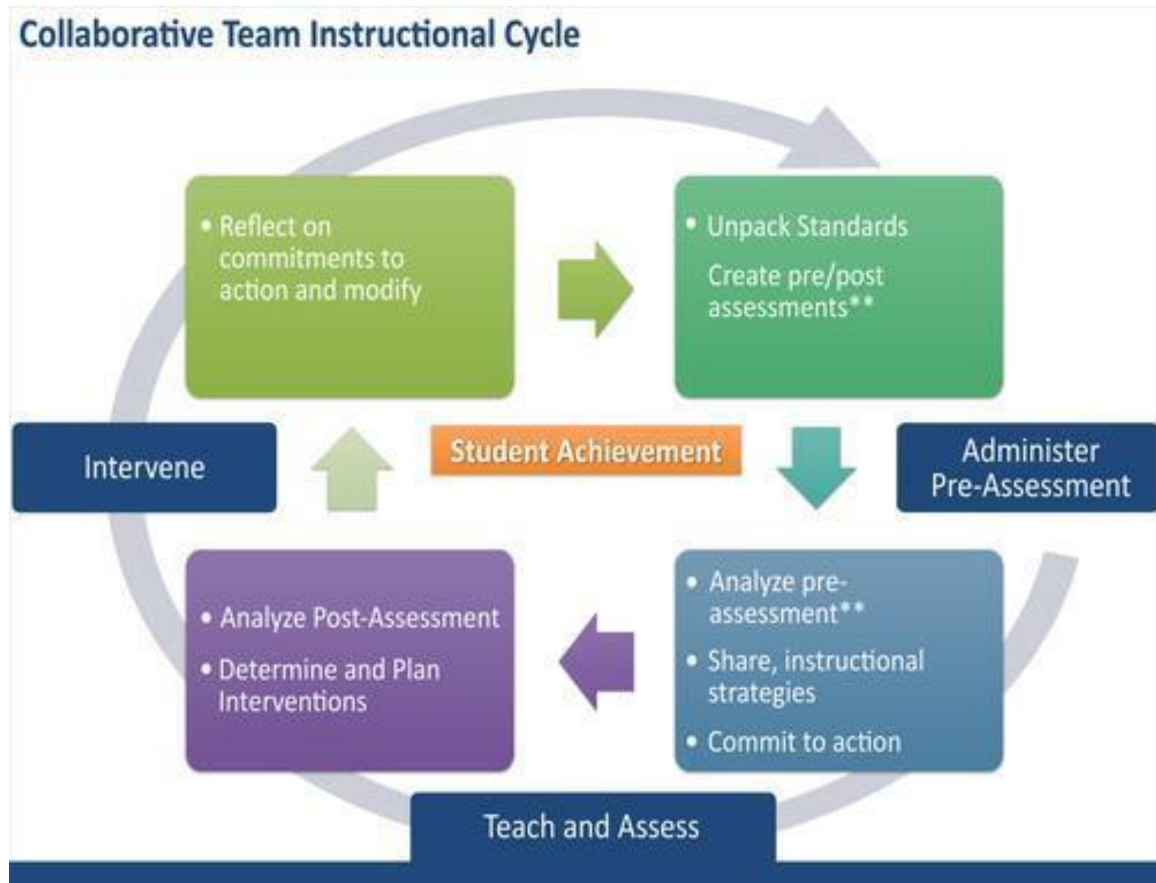

Figure 1. Grade-level PLCs (MidAtlantic Elementary School, a pseudonym).

Figure 1 depicts the process of the grade-level PLCs (personal communication, MidAtlantic School District, 2015) and the guiding principles that are followed within this district. The guiding principles connect to this diagram by showing what is done during the grade-level PLC meetings. Not all elements are implemented within each PLC meeting, but much of the process includes many of the elements within the guiding principles. The six PLC (DuFour et al., 2010) guiding principles within this school district include (a) a shared vision and mission, values, and goals; (b) collective inquiry; (c) collaborative teams; (d) continuous improvement; (e) action research/inquiry-based learning; and (f) being results oriented. The shared vision and mission are a part of the Collaborative Team Instructional Cycle as it relates to what teams commit to in their shared norms for each meeting. Collective inquiry connects to Figure 1 as teachers unpack the standards for each unit of study and develop pre and post assessments for each unit. The collaborative team and action research and inquiry-based learning fit with Figure 1 through analyzing preassessment data and holding data dialogues, sharing instructional strategies, and then committing to actions as they determine the next steps. Continuous improvement and being results oriented relates to Figure 1 through analyzing post assessment data, determining plans for intervention, intervening through various strategies, and then reflecting on how the interventions worked. If necessary, teachers will spiral back and reteach the specific concepts with which students continue to struggle within each unit of study. Key indicators for each guiding principle are delineated by the school district (see Figure 2; Elliott et al., 2012).

Shared Vision and Mission:

- Vision incorporates a mental image of an organization's future
- Staff are encouraged to be a part of the process
- Values and goals are expressed with the vision to share with all stakeholders
- Mission states which stakeholders will be served
- Communicates sense of direction to entire organization
- Norms are created for each grade level team

Collective Inquiry: Ask essential questions, look at data, look at students' needs

- Unpack standards from pacing guide
- Determine what students need to know and big ideas
- Decide how to teach students to self-monitor and self-assess
- Develop explicit language to teach students
- Provide vertical articulation across grade levels
- Analyze reading materials
- Compare pre- and posttests
- Look at students' strengths and weaknesses
- Discuss grouping of students and how they can help one another
- Analyze growth over time
- Determine which students need remediation or enrichment
- Come up with new strategies for re-teaching or enrichment
- Develop plan to look at what teachers have learned from assessments
- Look at resources that could be used to help re-teach or enrich the learning
- Analyze learning styles

Collaborative Teams and Action Orientation/Inquiry Based Learning:

- Use various strategies for teaching
- Find ways to vote on what takes priority
- Have data dialogues or discussions
- Identify issue or decision at hand
- Gather and record 10-15 ideas on chart paper
- Seek clarification and group common ideas
- Take time to speak about ideas
- Have individuals determine which ideas are most important
- Determine which ideas everyone is willing to try

Continuous Improvement: Six Assumptions about Data

- It is our moral responsibility to make significant progress in student learning
- Data have no meaning until we put meaning to them
- Collaborative inquiry is used to construct understanding of student learning
- School culture is collective responsibility, commitment to equity and trust
- Data alone do not improve student learning
- Every member of a collaborative community can act as a leader

Results-Oriented:

- Make data an ongoing cycle of instructional improvement
- Teach students to monitor their own data and set goals for themselves
- Establish school-wide use for data
- Provide supports that cultivate a data-driven culture

Figure 2. PLC guiding principles.

Statement of the Problem

The research that has been done on PLCs and their impact on student learning is substantial and many researchers have attempted to show the importance of PLCs as a means to improve student learning. The gap in the research is that less is known about the impact of PLCs on teacher practice. Hipp, Huffman, Pankake, and Oliver (2008) found that re-culturing schools as PLCs requires a collaborative learning environment to increase student learning. Schools must engage in structured, sustained, and supported instructional practices to improve student learning (Hipp et al., 2008). The purpose of this study was to explore the impact of implementing the PLC (DuFour et al., 2010) framework within one school on teachers' practices to improve student learning.

Statement of Purpose

The focus of this study was to explore the impact of implementing the PLC (DuFour et al., 2010) framework on teachers' practices in a Title I school to improve student learning. This will help teachers define how ongoing professional development is used to enhance teacher learning. CLTs provide opportunities for teachers to work together regularly in groups to gain new knowledge from professional development opportunities, look at data to improve their teaching, and implement best practices within their classrooms. For a better understanding of PLCs (DuFour et al., 2010), the following definition is set forth: A PLC is a group of educators who meet regularly, share their expertise, and work collaboratively to improve teaching skills and the academic performance of students (Louis & Kruse, 1995).

Research Questions

The following questions were used to guide this research study:

1. To what degree does this school implement MidAtlantic School District's PLC model?
2. How does the PLC shape teacher practice?
3. What role do school leaders have in facilitating the successful PLC process in this school?

The framework of the PLC (DuFour et al., 2010) has been implemented in the MidAtlantic public school used in this study as a means of developing a school community organization. The goal of this study was to understand what this one school did that helped improve teacher practice so students could be successful.

Summary

This study was designed to explore the impact of the PLC (DuFour et al., 2010) framework on teachers' practices in a Title I school. The goal was to determine how one school improved teacher practice to help students be successful within the first year of opening the school. What processes were put in place within the PLC (DuFour et al., 2010) that made a difference for the teachers? This knowledge will give leaders of other schools a better understanding of how shared leadership and practice, collaboration, collective learning, and reflective dialogue play an important role in teacher practice.

CHAPTER II: LITERATURE REVIEW

For over a decade, PLCs have been championed by practitioners as an effective structure for providing professional development to teachers and building their knowledge and skills (Bausmith & Barry, 2011). School leaders who were interested in implementing such a reform began shifting their organizations and structure to include the PLC (DuFour et al., 2010) model of organizational learning. Here teams meet on a consistent basis for the objectives of learning, cooperative planning of lessons, and to investigate issues that need to be resolved. Teams operate with a promise to the norms of constant enhancement and analysis and enlist their members in improving their daily work to further the achievement of the school district and school objectives for student learning (Bausmith & Barry, 2011; National Staff Development Council, 2001). Ideally, schools that rely on PLCs to promote student achievement are characterized by shared norms and values, a focus on student learning, reflective dialogue, deprivatization of practice, and collaboration (Hord, 2004; Scribner, Cockrell, Cockrell, & Valentine, 1999).

Educators champion PLCs because they promote professional development and collaboration among educators; however, many PLC models seem to fall short of accounting for the needs of adult learners (Blankenship & Ruona, 2007). This is problematic because scholars have formed a consensus on the importance of teachers' professional learning to improve the quality of education (Darling-Hammond, Chung Wei, Alethea, Richardson, & Orphanos, 2009). Teachers have professionalized in various ways and encounter experiences and challenges along the way (De Neve, Devos, & Tuytens, 2015). The professional learning of teachers is complex and demanding

(Avalos, 2011; Organisation for Economic Co-operation and Development, 2005), and requires that leaders attend to both student and adult learning (Drago-Severson, 2012). The focus of the current study was on teacher practice as it is affected by the PLC (DuFour et al., 2010) framework.

Origins of PLCs

The term professional learning community first materialized among researchers as early as the 1960s when they offered the theory as an alternative to the nature of isolation found in the teaching profession (Solution Tree, n.d.). Stenhouse (1975) disputed that teachers should be the school and classroom researchers, playing an active role in curriculum development. An array of projects and activities were developed on the thinking school and the problem-solving school (Bolam, 1977). Perhaps most notable was the Creative School (Centre for Educational Research and Innovation, 1978), which focused on creative and critical thinking, arose from the school-based curriculum development movement of the 1970s.

The research became more explicit in the late 1980s and early 1990s (Snyder, 2006; Solution Tree, n.d.). McMahon, Bolam, Abbott, and Holly (1984) discussed how a shift occurred to reflect the self-reviewing or self-evaluating school. Results of Rosenholtz's (1989) study of 78 schools showed learning-enriched schools were characterized by collective commitments to student learning in collaborative settings (Snyder, 2006; Solution Tree, n.d.). Improvement of teaching was recognized as a collective rather than individual enterprise. Analysis, evaluation, and experimentation in concert with colleagues are conditions under which teachers improve. Newmann and Wehlage (1995) described research involving over 1,200 schools (Solution Tree, n.d.).

An abundance of the research was bound to quantitative studies (test scores and surveys) but a few included comprehensive, in-depth case studies as well (Snyder, 2006; Solution Tree, n.d.). Newmann and Wehlage reported that the most noteworthy schools were those that restructured themselves as PLCs, where the staff was provided tools to function in the manner of a PLC (Solution Tree, n.d.). That same year, Kruse et al. (1995) found that the most effective and efficient schools, regarding student achievement, functioned as PLCs that were characterized by reflective dialogue, deprivatization of practice, a collective focus on student learning, collaboration, and shared norms and values (Solution Tree, n.d.). As a result of these studies, the definitions and characteristics of PLCs began to take form. In the restructuring of schools today, leaders have continued to use these characteristics to describe PLCs.

Definitions and Characteristics of PLCs

For the past decade, PLCs have been considered the process for developing harmonious, collegial relationships and for building the capacity for modifications within a school (Blankenship & Ruona, 2007; DuFour & Eaker, 1998; Fullan, 2004; Hord, 2004; Senge et al., 2000). Various interpretations of teacher learning communities exist, but they all feature a common image of a professional community. Teachers work collaboratively within a PLC to reflect on their practice (McLaughlin & Talbert, 2006). The relationship between practice and student outcomes is examined as evidence by teachers (McLaughlin & Talbert, 2006). Teachers will make necessary changes that will improve teaching and learning for the students in their classes (McLaughlin & Talbert, 2006). A consensus exists that a PLC functions well when there is a group of teachers sharing and critically reviewing their practice in an ongoing, reflective, collaborative,

inclusive, learning-oriented, growth-promoting way (Stoll & Louis, 2010). The precise definitions of the key factors differ somewhat among researchers (Blankenship & Ruona, 2007). The following definitions have been set forth:

- Reflective dialogue: Is the application of new knowledge related to serious educational issues or problems, which is discussed during reflective dialogue (Louis & Kruse, 1995), as well as seeking new knowledge (Hord, 2004), converting tacit knowledge through interaction with others (Fullan, 2004), and the application of new ideas and information to problem-solving and solutions addressing students' needs (Hord, 1997). The four critical questions that are asked within a CLT include:

  1. What do we want students to know?
  2. How do we know if they have learned it?
  3. What do we do if they have not learned it?
  4. What do we do for students who already know it?

- Deprivatization of practice: This means teachers observe one another's classes with the idea of giving and receiving feedback (Lomos, 2012). Louis and Kruse (1995) stated deprivatization of practice frequently includes an examination of teachers' practices, observations and case analysis of students, and joint planning and curriculum development (Ramful, 2017). Hord (1997) asserted that teachers propose unique concepts and data to resolve issues and find solutions that will address students' needs. In 2004, Hord, expressed that teachers seek new knowledge as a part of the deprivatization of practice.

- Collective responsibility: There is extensive acknowledgement in the literature that representatives of a PLC continuously take mutual responsibility for student learning (King & Newmann, 2001; Kruse et al., 1995; Leithwood & Louis, 1998). Researchers assume that such collective responsibility helps to sustain commitment, holds peers accountable to do their equal share, and eases isolation (Lomos, 2012; Newmann & Wehlage, 1995).
- Shared sense of purpose or values: This refers to the degree to which teachers agree about the school's mission and operational principles (Ramful, 2017). Centrally important to the shared sense of purpose or value, is to have a shared vision (Andrews & Lewis, 2007). In particular, there is an authentic focus on all students' learning (Hord, 2004) because individual self-direction is seen as possibly affecting teacher competence when teachers cannot count on colleagues to support the learning targets (Louis & Kruse, 1995; Newmann & Wehlage, 1995). Louis and Kruse (1995) suggested that when values are shared it provides a framework for shared, collective, principled decision-making (Ramful, 2017).
- Collaborative focus on student learning: Collaboration reflects the commitment of teachers to help students be successful. Collaboration concerns staff engagement in developmental activities with ramifications for numerous people, going beyond superficial reciprocity of help, support, or assistance (Louis & Kruse, 1995), to include a combined review and critical feedback (Hord, 1997). Feelings of interconnection are central to such collaborative efforts, which is a goal of better teaching processes. These activities are

> unattainable without the collaborative effort of teachers, linking collaborative activity and the acquisition of a shared purpose (Newmann & Wehlage, 1995; Ramful, 2017).

The remainder of this section contains discussions of the two PLC models that are the most prevalent: The DuFour and Eaker (1998) model and the Hord (2004) model.

In their literature review on PLCs, Blankenship and Ruona (2007) summarized their findings by indicating the DuFour and Eaker (1998) model and the Hord (2004) model vary based on their approaches to four areas: (a) membership, (b) leadership, (c) orientation to organizational culture, and (d) knowledge sharing. These four approaches to PLCs are described to give a better understanding of the importance of each. Membership within the models varies from being voluntary by virtue of a person's employment or mandatory. Membership can also be affected by work type, common interest, or a strategic need for organizational influences driving the conversations within a group or community (Blankenship & Ruona, 2007). Leadership is more external for PLCs, where the emphasis tends to be stronger with the role of the principal who establishes the supportive conditions for team learning (Blankenship & Ruona, 2007). The principal also has an important role in implementing a shared vision and values for the school. Scribner et al. (1999) stated school leadership is instrumental in fostering trust and a shared sense of purpose. Leaders choose to behave in a manner that requires self-influence to gain the desired outcomes they expect to obtain within their environments.

Within PLCs, orientation to organizational culture is extremely important. Most models contain the idea of a shared vision, an emphasis on collaboration, and trust as key.

Along with these components are cultural norms, which help in the creation of organizational learning (Blankenship & Ruona, 2007). Knowledge sharing varies across the models, with some having it occur through team meetings and others through meaningful group discussions, protocols, or high-tech workspaces (Blankenship & Ruona, 2007). Knowledge sharing can occur at the individual or group level (Blankenship & Ruona, 2007). DuFour and Eaker (1998) believed knowledge sharing occurs naturally through collective inquiry. One way groups share knowledge is through storytelling, which helps groups to come up with solutions by building stories together. In this situation, teachers have the opportunity to reflect on their own thoughts and actions, as well as discuss this reflection with their colleagues.

As mentioned earlier, much has been written about how PLCs help to establish relationships with colleagues and build capacity in subject areas within schools (Blankenship & Ruona, 2007). The following section presents the key characteristics of DuFour and Eaker's (1998) model and Hord's (2004) model (Solution Tree, n.d.). They contain an in-depth comparison of the models in order for professionals to make an informed decision as to which aspects should be incorporated into their school (Blankenship & Ruona, 2007).

Similarities and Differences of the Models

There are distinct similarities and differences in membership, leadership, organizational culture, and knowledge sharing between the PLC models. Regarding membership, each of the PLC models includes being a faculty member on a learning team. Leadership in each model also has similarities and differences. In both PLC models, the principal is the leader within the school, but the role of the principal may

differ depending on the PLC model the school uses. In DuFour and Eaker's (1998) model, the principal shares the decision-making and provides information to the staff about training (Blankenship & Ruona, 2007). In Hord's (2004) model, the principal provides supportive conditions for teachers, such as time to plan lessons and feedback about instructional strategies that can be implemented (Blankenship & Ruona, 2007).

The organizational culture in both PLC models includes a shared mission and vision that drive the work done by staff members. One difference between the two models is that in DuFour and Eaker's (1998) model, collaboration is the most important aspect with a focus on results (Blankenship & Ruona, 2007). In Hord's (2004) model, collaboration is done through shared practice, and a cultural shift occurs within the PLC. When making decisions about teaching and learning, teachers engage in data dialogues about student learning and reinforce or challenge one another during their discussions about teacher and student learning.

The models are more similar when it comes to knowledge sharing. DuFour and Eaker's (1998) model allows members to collaborate and create new knowledge to be shared with one another. Hord's (2004) model uses reflective dialogue, during which teachers and peer coaches share knowledge with one another. Table 1 summarizes the differences in the approaches for the models discussed in this chapter. The next section contains a discussion and definition of organizational learning before moving into a discussion about PLCs. This is important because it is necessary to make sure an organization is set up to embed a PLC model for all elements of the process to occur. The research supports the importance of developing organizational learning, where staff members have opportunities for collaboration and reflection, as well as collective

learning and responsibility. The next section also contains information about professional development, teacher learning, and student learning.

Table 1

Comparison of Characteristics of Professional Learning Communities

Model	Theory Base	Membership	Leadership	Organizational Culture	Knowledge Sharing
DuFour & Eaker (PLCs)	Organizational Learning	Membership is by virtue of status as a faculty member; teachers assigned to collaborative teams; work on student learning	Principal shares decision-making; provides information to staff about training; models behavior that matches vision and values and is results-oriented	There is a shared mission, vision, and values, all of which drives the work done by staff; collaboration is the most important piece; through innovation and experimentation there is a focus on results	Collaboration done by team members so there is less discussion; teams create new knowledge to be shared; discussions are limited
Hord (PLCs)	Organizational Learning	Membership is by virtue of status as a faculty member; size of learning teams varies	Leadership is provided by the principal, who provides supportive conditions for teachers within the school	Shared vision and values help drive the work done by teachers; staff members collaborate through shared practice; cultural shift occurs in a PLC	Reflective dialogue by teachers; peer coaching or receiving feedback is another way to share knowledge

Taken from Blankenship and Ruona (2007).

Organizational Learning

This section includes a discussion of organizational learning, which was introduced in 1958 by March and Simon, who studied knowledge management with a focus on information search, acquisition, integration, and assimilation within organizations. Hedberg, Nystrom, and Starbuck (1976) stated that although organizational learning occurs through individuals, it would be a mistake to conclude that organizational learning is nothing but the cumulative result of an organization's

members' learning. Organizations do not have brains, but they have cognitive systems and memories (Hedberg et al., 1976). As individuals develop their personalities, personal habits, and beliefs over time, organizations develop world-views and ideologies (Hedberg et al., 1976). Members come and go and leadership changes, but organizations' memories preserve certain behaviors, mental maps, norms, and values over time (Hedberg et al., 1976).

According to Leithwood, Leonard, and Sharratt (1998), there are compelling reasons to view schools from an organizational perspective, but the empirical evidence is thin and more research is needed. Researchers are calling for more and better empirical research to understand how capacity building unfolds in schools (Copland, 2003; Galluci, 2008; Higgins, Ishimara, Holcombe, & Fowler, 2012). Galluci (2008) defined organizational learning as a higher order of collective learning that extends beyond a single individual, meaning that individuals within an organization learn from one another (Higgins et al., 2012). Honig (2008) suggested there is a sociocultural learning theory that focuses on individuals' social interactions within an organization where people learn through socially embedded activities, behaviors, and practices (Higgins et al., 2012).

Garvin, Edmondson, and Gino (2008) proposed a framework in which they stated that to understand organizational learning, there needs to be:

- a supportive learning environment where individuals feel psychologically safe to express ideas or concerns;
- concrete learning processes and practices in place to apply information and knowledge gained during learning; and

- leadership that reinforces learning so teachers are being heard about what they need from their leadership.

The framework proposed by Garvin et al. (2008) parallels well with schools that have implemented successful PLCs. A safe learning environment corresponds to one in which there is facilitative leadership, participative decision-making, shared vision and commitment, and collaboration (Giles & Hargreaves, 2006; Hord, 1997; Imants, 2003; Louis, Marks, & Kruse, 1996; Marks & Louis, 1999; Stoll, Bolam, McMahon, Wallace, & Thomas, 2006). This framework helps to understand organizational learning as a key factor in promoting learning and change (Higgins et al., 2012).

This is important, because in order to promote learning and change, it is necessary to make sure an organization embeds a PLC model for teacher collaboration. This aligns well with Garvin et al.'s (2008) framework, as it is necessary to provide concrete learning processes and practices so teachers can apply the information and knowledge gained during professional development and for reflective dialogue to occur. Research supports the importance of developing organizational learning in which staff members have opportunities for collaboration and reflection, and where leadership reinforces learning so teachers are being heard about what they need (Garvin et al., 2008). Later sections include discussions of the research on professional development, teacher learning, and student learning.

According to Scribner et al. (1999), who completed a case study with a focus on modifying schools to lead change efforts in eight elementary schools, nine middle schools, and 10 high schools, four organizational factors influence how school leaders establish PLCs. These include principal leadership (as it pertains to style of leadership),

organizational history (the way communities are linked together), organizational priorities (solving problems that are complex or ill structured), and the organization of teacher work (how teachers work together in learning communities). These organizational qualities are supported by the research of Bryk, Camburn, and Louis (1999), who gathered data from a large urban school district and looked at the structure of the school and the human and social aspects that make up a PLC. Bryk et al. also looked at the impact of a PLC on teacher learning and stated that facilitating factors such as small school size, principal leadership, and social trust among faculty members contribute to the success of PLCs. Marks and Louis (1999) looked at 24 schools nationally that were going through restructuring and determined that if there was a relationship between organizations and teachers, then empowerment was a crucial variable. Hallinger and Heck (2010) conducted a longitudinal study in which they focused on whether working collaboratively and building capacity could lead to improvements to the schools within the study; 192 elementary schools were included in the study and results showed there was academic growth over time. This was done by building capacity of teachers within these schools to increase student learning. A random sampling of third grade students was used for the study and results showed that principal leadership and a collaborative culture created a pattern of growth and improvement in schools in developing an organizational learning environment.

Organizational learning also includes accountability as well as the development of capacity within schools. Copland (2003) reported that accountability and capacity building within schools do not always go hand-in-hand depending on the type of accountability system that is in place. Copland found that about a third of the schools

studied had strong accountability systems, but capacity within those schools was not a factor that contributed to the accountability system. The schools that had strong external accountability usually had low organizational capacity and schools with strong internal accountability had strong organizational capacity (Copland, 2003). By following the policies of distributing leadership, continued inquiry, and collective decision-making, schools were able to make changes more feasibly (Copland, 2003).

Several studies have shown that culture is important in developing a PLC within an organization. Strahan (2003) focused on school culture as it relates to collaboration and improving student achievement and found that administrators can develop expectations and values for teachers and students when they use data to target areas for improvement. Giles and Hargreaves (2006) conducted a case study of three schools and determined that administrators could plan for leadership succession by developing PLCs, created through staff commitment and community involvement, as well as through distributed leadership and teacher cultures (Giles & Hargreaves, 2006). Hipp et al. (2008) focused on two schools that were becoming PLCs and the effect of collaboration on teacher learning. This was a qualitative study looking at two schools as they took the journey toward becoming PLCs. The findings revealed collaborative culture and common planning time as being crucial to maintaining a PLC. Williams, Brien, Crista, and Sullivan (2008) conducted a mixed-methods action research study in two schools in two different districts—one high school and one elementary school—and found that embedding a PLC model provided the staff time to promote internal reflection. Hill and Haigh (2012) conducted qualitative research with nine participants and found schools that included establishing and nurturing teacher researchers provided institutional support that

addressed the impediments and challenges of setting up a PLC. Teachers working in groups also make decisions by reinforcing or challenging one another during discussions about how students learn through curriculum. The next section contains a discussion of the elements of a PLC that make it effective in improving teacher and student learning.

PLC Characteristics

According to DuFour, DuFour, and Eaker (2008), PLCs are "educators committed to working collaboratively in ongoing processes of collective inquiry and action research to achieve better results for their students" (p. 14). DuFour et al. maintained that PLCs provide a structure for collaboration, teacher learning, student learning, and continuous professional development. The characteristics of PLCs include (a) a shared, mission, vision, and goals; (b) collective inquiry, (c) continuous improvement, (d) collaborative teams, (e) action orientation/inquiry-based learning, and (f) results orientation (DuFour, DuFour, & Eaker, 2006). The next sections contain details of the six guiding principles individually to share what each piece looks like within a PLC meeting.

Six Guiding Principles for PLCs

Shared Vision, Mission, Goals, and Necessary Processes

A shared vision incorporates a mental image of what an organization (i.e., a school) determines the future to look like as members work together to make that image a reality (Hord, 2004). Staff are encouraged to be a part of the process of developing a shared vision, which helps guide the decision-making process for the school (Hord, 2004). The values and goals expressed within the vision help to establish how all stakeholders will work together to maintain that vision (Hord, 2004). A mission statement asks why we exist (DuFour & Eaker 2010). Properly crafted mission

statements provide clarity of purpose and can help create priorities that help to guide decisions (DuFour & Eaker, 2010).

Along with the shared vision and mission for the school, a number of processes need to be in place in order for schools to develop smooth running team meetings. Each meeting should allow for team roles and team norms that help to reinforce the effectiveness of the team meeting (Elliott et al., 2012). Team roles might include a facilitator, a recorder who is the note taker, a timekeeper, and a scribe, or the person who writes ideas on charts. Team norms should be created and adhered to by all team members and revisited on a regular basis to be effective (Elliott et al., 2012). Some examples of team norms include (a) stay focused on the task; (b) respect everyone's time; (c) come prepared; (d) start and end on time; (e) be an active participant; and (f) establish a trusting, confidential, and risk-free environment.

Agendas are also needed for the meeting to be successful. An agenda provides a roadmap of how the group will spend time together (Delehant, 2007). The agenda is the key to having a productive meeting and allowing for active participation by the members of the group (Elliott et al., 2012). The key elements of an agenda include (a) the purpose of the meeting, (b) what topics will be covered and what materials are needed, (c) how much time will be spent on each topic, (d) who will be involved, and (e) the intended outcomes (Elliott et al., 2012). The agenda should be given at least a day prior to the team meeting in order for members to be prepared. The next section contains a focus on collective inquiry and what essential questions should be asked during the team meeting.

Collective Inquiry

According to Elliott et al. (2012), once the agenda has been reviewed, the next steps include asking essential questions about what teachers want students to learn, what the data reveal about students and their learning, and what teachers will do if the students already know the material or do not understand what is being taught. When looking at the data and what they reveal, teachers can determine whether students have learned the material by analyzing reading materials, comparing pre- and posttests, looking at students' strengths and weaknesses, reviewing the individual needs of students, discussing groupings of students, and analyzing growth over time. As teachers look at students who understand the concepts already or students who continue to struggle with concepts, they should determine which students need remediation or enrichment, develop new strategies for re-teaching, create a plan for how to use the assessments, find resources that will help students, and analyze students' leaning styles. The next section concerns collaborative teams and how they function to be successful, and what actions or experimentations will take place as a result of any decision-making.

Collaborative Teams and Action Orientation and Inquiry-Based Learning

The environment in which the meeting takes place affects the participants in various ways. Elements of the environment include room arrangement, consideration of participants' needs, affective elements of the space, and needed materials (Elliott et al., 2012; Garmston & Wellman, 2009). Collaborative teams will also be making team decisions that affect students and teachers. Dialogue and discussion are usually required here, along with action orientation and inquiry-based learning (Elliott et al., 2012). Dialogue develops a shared understanding for the group (Elliott et al., 2012). Team

members hold off on giving their opinions in order to fully understand the content of the conversation (Elliott et al., 2012). The purpose is for teams to come to a decision (Garmston & Wellman, 2009). Team members advocate for their own points of view and narrow down choices for decision-making. Using protocols tends to help teams be more successful in their decision-making (Elliott et al., 2012). Action orientation and inquiry-based learning play a strong role in decision-making and the following paragraphs contain a discussion about how the decisions will be made.

Collaborative teams use assorted strategies to make decisions that are best for the team. One such strategy is dot voting, in which members of the team get one dot and place it next to what they consider to be the top priority on the list. Another way to use dot voting is by allowing team members to have multiple dots to make decisions based on their priorities (Elliott et al., 2012). Using the dots, the participants look at the priority ranking using a scale of high to low or low to high and then the team comes together to determine which items on the list should be dealt with first, second, and so on (Elliott et al., 2012). Finally, the team members might use a consensus scale where they show their level of agreement on a scale of 1 to 5 with 1 meaning strongly disagreeing to 5 meaning strongly agreeing. Post-its or number cards would work well with this strategy.

As a part of the action orientation and inquiry-based learning segment, the team comes up with a list of ideas to discuss (Garmston & Wellman, 2009). This subsequent synthesis of ideas shows what the list might look like: (a) identify the issue or decision at hand, (b) gather and record 10 and 15 ideas on chart paper, (c) seek clarification and group common ideas, (d) take time to speak about the ideas, (e) have each person

determine which ideas are most important, and (f) determine which ideas everyone would like to try (Garmston & Wellman, 2009).

The next section contains an in-depth discussion about continuous improvement, including what protocols are needed during the data discussions, how teachers will manage curriculum mapping, what interventions are needed for students, and what enrichment teachers will provide to students. These are questions that need to be answered in the next section.

Continuous Improvement

DuFour et al. (2010) stated there are four essential questions that need to be addressed during a team meeting: What is it that we want each student to learn? How will we know when each student has learned it? How will we respond when students experience difficulty? and How will we enrich and extend the learning for students who are proficient? These are the questions that must be answered as part of the collaborative learning team cycle. Teachers do this by looking at the data they have gathered about each student (DuFour et al., 2010).

There are six assumptions about the data process that should be considered. The first assumption is that it is a moral responsibility of teachers to make significant progress in improving student learning by closing the achievement gap, especially with children of poverty (DuFour et al., 2010). The second assumption is that data have no meaning until teachers put meaning to them using their frames of reference (DuFour et al., 2010). The third assumption is that collaborative inquiry is a process teachers use to construct their understanding of student learning (DuFour et al., 2010). School culture, which is characterized by collective responsibility, commitment to equity, and trust, is the fourth

assumption (DuFour et al., 2010). The fifth assumption is that reviewing data alone does not improve student learning. When teachers receive professional development to improve their teaching practice and implement best practices, they are better prepared to make learning more accessible for students (DuFour et al., 2010). The last assumption is that every member of a collaborative school community can act as a leader. In so doing, they dramatically change the quality of relationships, the school culture, and student learning (DuFour et al., 2010).

In order to understand data protocols, teachers must be able to activate and engage their thinking. This sets the tone for exploring the data, so teachers can make predictions or assumptions about what they see in the data (DuFour et al., 2010). As teachers activate their prior knowledge about data, they make predictions and assumptions, ask questions, and use this as a time for learning (DuFour et al., 2010). The next steps include analyzing the data as teachers compare, contrast, distinguish, and analyze the data using their collective understanding of the facts surrounding the results (DuFour et al., 2010). Last, it is necessary to organize and integrate the data to develop possible causes based on the data. This way teachers are framing the problem and developing solutions (DuFour et al., 2010). Another element that can improve teacher practice and student learning is the use of a curriculum map. A curriculum map is a living document that teachers can consult and revise, based on data analysis and experience (Elliott et al., 2012).

Curriculum maps are developed by collaborative teams so they can identify essential learning, assessments, and resources for teaching (Elliott et al., 2012). The goal of creating a curriculum map is to ensure all students are provided the same academic

goals. Teachers are most effective in helping students learn when they make it clear exactly what students must know and be able to do during their coursework (DuFour et al., 2006). Curriculum maps provide teachers, students, administrators, and parents a guide to what content is being learned. Assessments are more easily aligned with what is being taught and ensure mastery of the essential learning and that all students have access to the same curriculum (Elliott et al., 2012).

Intervention and enrichment help to answer the questions of what teachers will do for students who still do not know the material and what they will do for students who already know the material. This addresses the differentiation discussion that occurs during collaborative team meetings (Elliott et al., 2012). In both situations, teachers must be flexible with student groupings. Intervention may require that teachers provide more one-on-one instruction or small group instruction to those who need the extra help. To remain positive in the language, teachers can say that they are reteaching a concept versus providing remediation (Elliott et al., 2012). When providing enrichment, teachers must ensure they are still teaching the same concepts, but in this scenario, they are allowing students an opportunity to dig deeper into a topic. Both situations require that teachers make modifications for students to provide them with the best instruction possible (Elliott et al., 2012).

Results Oriented

According to DuFour et al. (2010), teachers need to learn how to use data effectively. They provided the following recommendations for the use of the data: (a) make the data part of a continuous cycle of pedagogical growth by interpreting the data and then developing new instructional strategies for reteaching, (b) instruct learners how

to review their own evidence and set learning targets for themselves, (c) organize a clear school-wide use for evidence by defining critical teaching and learning concepts, (d) implement support that cultivates an evidence-based school culture, and (e) create and cultivate a district-wide system by building a district-wide database. Another element of being results oriented is to have students and teachers set SMARTR goals. These goals are set for the evaluation process teachers go through each year, whether it be a formative evaluation or summative evaluation (Elliott et al., 2012). At the beginning of each school year, collaborative teams, as well as individual teachers and students, will develop a SMARTR goal for the school year. SMARTR stands for:

- **S**trategic and specific, which means the goal is aligned with school-wide goals
- **M**easurable, meaning it is a quantitative, observable, and consistent measurement for grade-level content
- **A**ttainable, meaning it is doable, yet inspiring
- **R**esult-based, or having specific outcomes of targets for student achievement
- **T**ime-bound, which establishes a sense of priority to attain the goal
- **R**igorous, or having the appropriate amount of rigor to demonstrate mastery of objective (Elliott et al., 2012).

In order to establish a SMARTR goal, the data must be gathered and analyzed to determine the needs of the students. The collaborative team follows the parameters defined by the SMARTR goal. Once this is done, an action plan is designed to identify the specific strategies that will be used, the team members who will be responsible for different aspects of the goal, the resources that will be needed to meet the goal, and any

evidence that shows effectiveness of the goal (Elliott et al., 2012). The unpacking of standards will help in the process of making sure SMARTR goals will be met.

When teams unpack standards, team members understand what students need to know (Elliott et al., 2012). Through this process, teachers develop a common understanding of how to plan more purposeful instruction (Elliott et al., 2012). The standards set forth are created by each state and each standard includes benchmarks and indicators to dig deeper into the curriculum (Elliott et al., 2012). The standard indicates what the students need to know, the benchmark shows what it should look like at each grade level, and the indicators are specific expectations and behaviors that students should be demonstrating at their grade level (Elliott et al., 2012). Teachers look at standards to determine the thinking level being stressed, such as the nouns, verbs, and actions students need to perform (Elliott et al., 2012). During the process they will also look at what it will look like for students with disabilities, English speakers of other languages (ESOLs), and the advanced academics population (AAP). The next piece is to determine how to assess the students on the standards being taught.

Common assessments can be used to answer the following question: How will we know if the students have learned the concepts? A common assessment is any assessment given by two or more teachers with the intention of using it for collaboration purposes (Elliott et al., 2012). It becomes a part of the assessment–instruction cycle, where teachers teach and then assess students to see where they are in their knowledge (Elliott et al., 2012). The reason teachers assess is to find out what students understand, to gather information on what instructional strategies should be used, to learn whether the objectives have been met, and to reflect on how they can improve their teaching practices

(Elliott et al., 2012). Teachers look at what students learn and how they learn versus just looking at what is being taught. The next sections cover how PLCs affect collaboration, professional development, teacher learning, and student learning.

Collaboration

According to Englert and Tarrant (1995), the development of a collaborative community requires diversity among teachers, a collaborative community, and valued discourse within that community. This idea was supported by the research of Louis and Marks (1998), who looked at 24 schools nationally that were going through restructuring within PLCs; results showed human and social aspects, such as administrative support, respect from colleagues and the community, and professional development, lead to successful PLCs. Lam's (2005) study consisted of 1,330 teachers from 29 different schools in Hong Kong and results showed teachers who have greater control, higher motivation, and collaborative learning have a stronger positive impact on student learning. Goddard, Goddard, and Tschannen-Moran (2007) gathered data from students and teachers in a large urban school district and found that teachers need opportunities to collaborate on issues of curriculum, instruction, and professional development.

Hipp et al. (2008) focused on two schools that were becoming PLCs and the effect of collaboration on teacher learning. Results of this qualitative study showed that what educators must do is re-culture schools as PLCs in order for a collaborative learning environment to be present to have an impact on student learning (Hipp et al., 2008). The focus of an empirical study by Dooner, Mandzuk, and Clifton (2008) was to determine how members of the research team converge to analyze how groups work together. Dooner et al. found that in light of the gaps in the understanding of collaborative work,

educators must examine the promotion of inquiry-based PLCs. One way to do this is through collaborative leadership. This finding is supported by research done by Hallinger and Heck (2010), who completed a longitudinal study that focused on whether working collaboratively could result in improvements to schools. The study and data showed growth in student learning over time, as well as that collaborative leadership positively affected growth by building academic capacity within the schools. Similarly, Roberts (2010) used a mixed-methods survey with 37 elementary schools, 10 middle schools, and six high schools and surveyed the teachers who taught language arts and math. Student achievement data showed that schools must allow teachers more time for collaboration in order for teachers to understand what the data represent in terms of student success. The next section contains a discussion of the professional development needed to learn how to collaborate.

Professional Development

Community is a substantial piece of the PLC concept. Individual teacher professional learning is a focus of the PLC process, but collective professional learning within a community of learners is also important in teacher learning. Englert and Tarrant's (1995) 3-year research study focused on the school culture as it relates to collaboration, professional development, and improving student achievement. The researchers learned that school leaders must ensure that professional development is supported within PLCs (Englert & Tarrant, 1995). Fullan (2004) discovered that effective schools can establish professional collaborative cultures. He also argued that attention should shift from focusing on individuals (e.g., merit pay, career ladders, etc.) to developing schools as PLCs. Strahan (2003) studied administrators who initiated

professional development to target more effective instruction in their schools, thereby achieving positive results. School-based teacher learning communities are found at grade levels across a whole school. They operate at multiple levels within schools where they complement and reinforce teachers' work. Within teacher learning communities, three functions stand out: (a) building and managing knowledge; (b) creating shared language and standards for practice and student outcomes; and (c) sustaining certain aspects of the school culture, such as consistent norms and instructional practice (McLaughlin & Talbert, 2006). The next section focuses on teacher learning as it relates to PLCs and includes the research that supports teacher learning.

Teacher Learning

Louis and Marks's (1998) study included quantitative data that were multilevel and qualitative data for analytical purposes. They looked at 24 schools nationally that were going through restructuring and found that lower staff complexity, in terms of specialization, communication and interaction, common planning time, and teacher empowerment, contributed to an effective PLC. Louis and Marks showed that the ways teachers organize their work to promote professional communities creates a positive relationship between learning and the academic performance of students. The research of Bryk et al. (1999) reinforced the work of Louis and Marks (1998) regarding teacher characteristics that support PLCs and improves student learning. Barab, Barnett, and Squire (2002) completed research through a reflexive process with four participant-observers who used field notes, document analysis, and interview data to interpret community life. The researchers discovered four core factors for teacher learning that bolster PLCs: (a) teachers developing and implementing their own professional

preparation, (b) teachers wanting to be more authentic by being in the classroom to learn versus being in a college classroom, (c) teachers providing portfolios to share with potential employers on their abilities to teach and use best practices, and (d) teachers learning through democratic ideals. Hipp et al. (2008) found that schools must engage in structured, sustained, and supported instructional practices to improve student learning. Vescio, Ross, and Adams (2008) looked at 11 studies from other researchers that met the criteria of their original questions of how teaching practices change as a result of participating in PLCs. The literature supports the idea that PLCs help improve student learning. The bottom line is that participation in PLCs affects teacher practice (Vescio et al., 2008). The next section details how teacher learning affects student learning and the research that promotes this relationship.

Student Learning

Kruse et al. (1995) reported there are five interconnected variables of PLCs: reflective dialogue, deprivatization of practice, cooperative practices, collective responsibility, and a focus on student learning. These variables can be measured when examining PLCs (Lomos, Hofman, & Bosker, 2011). Louis and Marks (1998) found that when these factors are in place within a PLC, they contribute to improvements in student learning. In 1998, Louis and Marks also determined that authentic pedagogy (i.e., students construct meaning and use inquiry-based learning to develop higher-level thinking) improved student learning and social relationships, as well as support in those relationships. Strahan (2003) conducted a case study on three schools where teachers and administrators used data from formal and informal assessments targeting areas of weakness and found improvements in student learning.

Hipp et al. (2008) found that in order to improve student learning, PLCs must be embedded in their daily work. Goddard et al. (2007) found that through teacher collaboration, student achievement increased in mathematics and reading, showing that teacher collaboration improved student learning. This was supported by Vescio et al. (2008), who found that a focus on student learning within PLCs increased student achievement. Having teachers learn in collaborative teams also has a positive impact on student learning (Roberts, 2010). Discussing the specific interventions to be used when teaching reading and mathematics has a positive impact on student learning (Carter, 2008). The research supports the fact that teachers who focus on student learning within PLC meetings help improve student learning.

Summary

From its origins in the late-1980s to the present, the notion of PLCs as a way for teachers to collaborate and improve student learning has been championed by educators and researchers. The research reviewed in this chapter reinforced that by working collaboratively through PLCs, educators are on the right track of functioning as groups at work. Organizational learning is how teachers embed PLCs within schools and the research demonstrates the connection between organizational learning and student learning. Positive outcomes are created when teachers have an opportunity to receive professional development as well as time to collaborate and reflect on the professional development they have received. The research also highlighted the key factor of collaborative leadership through which members are able to build capacity within schools. After reviewing the research on PLCs, where teachers have more time for the

implementing all aspects of the PLC (DuFour et al., 2010) process, a review of all of the processes of a PLC (DuFour et al., 2010) was provided.

CHAPTER III: METHODOLOGY

The purpose of this single case study was to determine how the implementation of the PLC (DuFour et al., 2010) framework affected teachers' practices at a Title I elementary school. This study was conducted in September of 2018, 6 years after the school opened in 2012. The study was done within the bounded system of one elementary school, over a few days, as I completed observations and interviews. I observed teachers from various grade levels during their collaborative team meetings as a non-participant observer to understand how the PLC (DuFour et al., 2010) framework was used to improve teachers' practices and met with administrators to determine their role in the implementation of the PLC (DuFour et al., 2010). The use of observations, interviews, document analysis (Merriam, 1998, p. 122), and reflexive journal (see Gerstl-Pepin & Patrizio, 2009, Rowling, 2000) entries helped determine how the PLC (DuFour et al., 2010) process affected teachers' practices. PLCs (DuFour et al., 2010) are organizational structures in which teachers commit to working collaboratively and using collective inquiry and action research to achieve better results for student learning (DuFour et al., 2008, 2010).

Research Questions

The focus of this research was on how PLCs (DuFour et al., 2010) affect teacher practice and whether the protocols of a PLC make a difference in teacher practice. The study was designed to address the following research questions:

1. To what degree does this school implement MidAtlantic School District's PLC model?
2. How does the PLC shape teacher practice?

3. What role do school leaders have in facilitating the successful PLC process in this school?

All aspects of the PLC (DuFour et al., 2010) process were studied in relation to how the process influenced teachers' practices. The following sections contain details of the methodology, including site selection, research design, data analysis, limitations and delimitations, credibility, transferability, dependability, and confirmability.

Site Selection

I selected MidAtlantic Elementary School for this single case study because it was one of three schools in the nation that won the DuFour Award. The DuFour Award honors schools that implement a model PLC. To be recognized as a model PLC, the school must (a) demonstrate a commitment to PLC concepts; (b) implement the PLC concepts for at least 3 years; (c) present clear evidence of improved student learning; (d) explain the culture, practices, and structures of the school and district; and (e) update the school information on their website.

Another reason I chose this school was because of the continuous growth its students made each year on their standards of learning (SOL) test scores. After reviewing the three previous years starting with the 2015-2016 school year, SOL scores increased in reading for third, fourth, and fifth grade students. The same phenomena occurred in mathematics in third, fourth, and fifth grades. Science is only tested in fifth grade and the SOL scores increased each consecutive year from the 2015-2016 school year to the 2017-2018 school year.

This Title I suburban school has a student population of approximately 500 to 600 students of various racial and ethnic groups. The ethnic groups include students who are

Hispanic (45%), Asian (20%), White (25%), Black (8%), and of other ethnic backgrounds (2%). At least 50% of the total student enrollment qualifies for free or reduced lunch.

The school has three administrators, approximately 60 teachers, several counselors, and approximately 20 instructional assistants. I wanted to know what teachers had done to help improve student learning at this school. What type of professional development had they participated in to help them improve their students' learning? Were they following the PLC (DuFour et al., 2010) process according to the guiding principles offered by the school district? To be granted access to the school, I was required to gain approval from the superintendent of the county, the principal, and teachers at the school (see Appendix A).

Research Design

The design for this research was a single case study focusing on one elementary school's implementation of the PLC (DuFour et al., 2010) framework. The PLC (DuFour et al., 2010) guiding principles that served as a lens for the research included (a) a shared vision and mission, goals and values; (b) collective inquiry; (c) collaborative teams; (d) action orientation and inquiry-based learning; (e) continuous improvement; and (f) results oriented. I began by observing team meetings at various grade levels using a collaborative learning team protocol (Mitchell, 2017; see Appendix B). I took on the role of a non-participant observer to develop extensive field notes of potentially relevant phenomena that developed and could be used for exploratory purposes (see B. Johnson & Christensen, 2012). In this study, the groups being observed were aware of my presence and my purpose for being at the meetings (B. Johnson & Christensen, 2012). As a non-

participant observer, I did not interact with the groups being studied, but was given permission to observe their team meetings. During the observations, I attempted to discern how the PLC (DuFour et al., 2010) process was helping teachers improve their practice. I watched and listened as the PLC-related dialogue occurred and systematically recorded what I saw and heard during the meeting. The goal was to observe teachers from kindergarten through fifth grade and take field notes of what occurred during the meetings.

The next step was to interview two administrators and five teachers in a one-time interview of 30 to 45 minutes. All teacher interviewees were volunteers. I asked the teachers specific questions related to working within PLCs (DuFour et al., 2010) and whether the guiding principles set forth by the school district for a PLC (DuFour et al., 2010) were improving teacher practice (see Appendix C). I reviewed their thoughts about how the PLC (DuFour et al., 2010) process was being implemented in the school and whether it improved teacher practice. The inquiry was centered on the question of whether the teachers believed they had a voice in the PLC (DuFour et al., 2010) process and, if so, how they shared their ideas with their colleagues and administrators. Administrators were asked about their expectations of teachers and specialists during PLC (DuFour et al., 2010) meetings and how they as administrators created an environment of a shared goal within the school (see Appendix D). They were asked whether they believed collaboration and reflective dialogue helped improve teacher practice. Administrators were asked how they provided teachers time to collaborate and plan during their team meetings.

The teacher and administrator interviews took place at the convenience of each teacher and administrator. The interviews were semi-structured and were conducted in-person, recorded, and then transcribed. The purpose of using semi-structured interviews was to probe deeply into the questions being asked by allowing interviewees the opportunity to expand on their responses (see B. Johnson & Christensen, 2012). The intent of this format was to discern from interviewees how the standards implemented through the PLC (DuFour et al., 2010) process had improved teacher practice within this school.

It was necessary to build rapport with the interviewees. I did this by contacting each individual by phone and getting to know him or her better before the in-person interview. In order to maintain the integrity of the research, I explained the purpose of the interview to each interviewee (see B. Johnson & Christensen, 2012). I needed to remain impartial throughout the interview process, so no bias was shown in any way toward the interviewees' responses (see B. Johnson & Christensen, 2012).

Another means of data collection was to complete a document analysis (Merriam, 1998, p. 122; see Appendix E) of the PLC (DuFour et al., 2010) manual and other existing documents related to PLCs (DuFour et al., 2010) that were available within this district. After receiving permission to use the documents in this research, I wrote about what steps were taken during a team meeting process, because a specific cycle of events usually occurs during each meeting for the meeting to be successful. All of these data sources (i.e., interviews, observations, reflexive journal (Gerstl-Pepin & Patrizio, 2009; Rowling, 2000) entries, and document analysis (Merriam, 1998, p. 122) helped with

describing the way the PLC (DuFour et al., 2010) process was being implemented in the school and its impact on teacher practice.

A reflexive journal (see Gerstl-Pepin & Patrizio, 2009; Rowling, 2000; see Appendix F) was used to ascertain various patterns or themes that materialized during the meetings. Entries helped me reflect and write about what I experienced during the observations, interviews, and the document analysis (Merriam, 1998, p. 122). The purpose of the journal was to facilitate the presentation of the findings in a way that would make the most sense to the reader (see Harrison, MacGibbon, & Morton, 2001). It was important to examine my personal assumptions and individual beliefs while writing the reflexive journal (see Gerstl-Pepin & Patrizio, 2009; Rowling, 2000) entries. Writing a reflexive journal also helped me to determine what the teachers were doing to improve their practice as a result of participating in the PLC process. Thus, my data sources included observations, one-on-one interviews, document analysis (Merriam, 1998, p. 122,), and reflexive journal (Gerstl-Pepin & Patrizio, 2009; Rowling, 2000) entries.

Data Analysis

I recorded and transcribed the teachers' and administrators' responses to the open-ended questions (see Appendices C and D). The responses of the teachers and administrators were then coded and analyzed for trends. The themes and trends were written in narrative form to help reveal discrepancies related to the use of the PLC guiding principles by the school district. Observations were analyzed using the reflexive journal entries (see Appendix F). I wrote the entries after each observation was completed. Descriptive field notes were summarized to show what I heard and saw within the observation setting.

The reflexive journal (see Gerstl-Pepin & Patrizio, 2009; Rowling, 2000) was used as a piece of evidence so I could better understand the process teachers and administrators went through during a PLC (DuFour et al., 2010) meeting. The goal of analyzing the reflexive journal (see Gerstl-Pepin & Patrizio, 2009; Rowling, 2000) entries was to identify trends within each grade-level meeting. As the researcher, I found a way to make sure the readers of this research could make sense of what was occurring during a PLC (DuFour et al., 2010) meeting (see Harrison et al., 2001).

A document analysis (Merriam, 1998, p. 122) was a part of the process to demonstrate how PLCs were conducted in this MidAtlantic school district. I analyzed the documents to identify how PLCs (DuFour et al., 2010) were embedded within the county. Permission was granted to use the PLC (DuFour et al., 2010) manual in my research. The review of this document was beneficial in determining what practices should be put in place during a team meeting. Some examples of what practices are embedded include teams creating norms before establishing a team meeting and reviewing which students are struggling and discussing how they can help them. A data dialogue could also be a part of the discussion where instructional strategies would be discussed along with how to implement those strategies within the classroom. The last piece of the PLC (DuFour et al., 2010) was to plan the next unit of study to determine timelines for instruction.

I analyzed the data by coding the information gathered during the interviews, observations, and the document reviews, and then mapping the information for each guiding principle. I used highlighting to track the themes or trends found within the data and sorted the results by each guiding principle. I used constant comparative analysis (Creswell, 2007) to go back and forth between the data sources to identify similarities

and differences within the data. I triangulated this information across the data sources to corroborate, elaborate, and illuminate the research questions (Rossman & Wilson, 1985), and strengthen the study's usefulness for various settings.

Limitations

Much of qualitative research is not intended to be generalizable in its findings, but instead gives an in-depth analysis of a particular setting or community (Creswell, 2007; Maxwell, 1996). The first limitation I experienced was the fact that this study was limited to one school. The school is a Title I elementary school and has been operating as a PLC (DuFour et al., 2010) framework for over 5 years. As such, it is a potential exemplar for other schools in the MidAtlantic School District; this study provides information about day-to-day PLC implementation that may be transferable.

Another limitation was completing interviews and observations within 15 days. By consistently reaching out to the principal, I planned out the time to complete the observations and interviews and contacted the right personnel for the interviews. I developed rapport with the interviewees before the interviews began. Another limitation I experienced was not being able to interview the first principal, despite the numerous attempts to contact him. This could have increased the strength of the data.

Delimitations

Delimitations narrow the scope of a study and define the parameters of an investigation. The delimitations of this study included working with teachers from one school in a MidAtlantic school district that functions within a PLC (DuFour et al., 2010). The teachers within this study worked together in collaborative teams, a process that has been directed by the district leadership team. The population studied included classroom

teachers and administrators. I did not focus on student learning, but instead on teacher learning, in an attempt to show how the PLC (DuFour et al., 2010) process affects teacher practice. Providing professional development within PLCs (DuFour et al., 2010) has improved teacher practice and helped improve student learning at MidAtlantic Elementary School.

Constructs

According to Lincoln and Guba (1985), there are four alternative constructs that can accurately reflect qualitative studies. These constructs encompass credibility, transferability, dependability, and confirmability. The constructs are discussed in the following paragraphs.

Credibility

The credibility of the methods used in any study hinges on the skill, competence, and rigor being used in the fieldwork (Patton, 2002). During my 24 years of working with PLC protocols, my experiences included the application of the protocols that improved teacher practice. These experiences included being a classroom teacher, a math specialist, an instructional coach, and an assistant principal. During my first 3 years working as a classroom teacher and team leader at a failing school, we struggled to provide what was necessary for students to be successful. Once we began to implement the guiding principles of the PLC (DuFour et al., 2010) process, we saw improvements in both teacher practice and student learning, and within 3 years we became a passing school.

As a math resource teacher, my responsibilities included providing resources to teachers to help them unpack the SOL standards connected to the math curriculum during

PLC (DuFour et al., 2010) meetings. I provided professional development that helped to improve teacher practice by using the guidelines of the math workshop. As an instructional coach, my duties included facilitating PLC meetings and ensuring the protocols were followed. Data dialogues were beneficial in developing instructional strategies that improved student learning. These years of experience with the PLC (DuFour et al., 2010) process brought credibility to my analysis of the data.

As an assistant principal, I have been responsible for guiding and facilitating the PLC (DuFour et al., 2010) process within our school. This has included asking guiding questions, taking notes on the process using a CLT protocol, and offering suggestions of instructional strategies.

One potential threat to the credibility of this study was researcher bias (see B. Johnson & Christensen, 2012). This could result in me becoming selective in observations and the recording of information. My point of view had the potential of affecting the data being collected (see B. Johnson & Christensen, 2012). My goal in the reflexive journal (see Gerstl-Pepin & Patrizio, 2009; Rowling, 2000; see Appendix F) was to use critical self-reflection about any potential biases or predispositions that could affect the collection or analysis of the data (B. Johnson & Christensen, 2012).

Transferability

Transferability refers to demonstrating how the inquiry was conducted in an accurate and descriptive way (Lincoln & Guba, 1985). I did this by taking field notes throughout the process of the observations (see Appendix B) to record an accurate description of what was occurring. This required stating the date and time comments were made, as well as other side comments made during the observation. By using an

interview process (see Appendices C and D), I learned from individual teachers and administrators how they felt about the PLC (DuFour et al., 2010) framework and how teachers worked within that framework with their administrators. I wrote reflexive journal entries for self-reflection and reviewed the documentation that was available within this district to reflect on how schools implemented the PLC (DuFour et al., 2010) process. I used triangulation of these multiple sources to corroborate, elaborate, and illuminate the research questions (Rossman & Wilson, 1985), and strengthen the study's usefulness for various settings.

Dependability

Dependability is the third construct I used for understanding the changing conditions of how I gathered the data within the one school setting. As the researcher, I paid close attention to the feelings, thoughts, intentions, and experiences that each participant brought to the table during the observation (B. Johnson & Christensen, 2012). My goal was to represent what each participant was stating and interpret those feelings and tones of voice throughout the observations. I used member checking to ensure I accurately represented what was being said during the observations and in the interviews.

Confirmability

Confirmability is the last construct Lincoln and Guba (1985) discussed, referring to how it captures the objectivity of the study. In this case, I asked my peers to review what I wrote to ensure the data were sound and made sense to the reader of this research (Lincoln & Guba, 1985). According to Lincoln and Guba, this helps to remove the subjectivity of the researcher in the evaluative process. The data must stand on their own

to confirm the general findings and determine any implications of the PLC (DuFour et al., 2010) process for the school being assessed (Lincoln & Guba, 1985).

Summary

Using the PLC (DuFour et al., 2010) guiding principles that were shared in Chapter 1, this study was designed to determine how the PLC (DuFour et al., 2010) guiding principles were improving teacher practice. Did the leadership within this school make sure the protocols were followed to improve teacher practice? The goal was to demonstrate how one school used the PLC (DuFour et al., 2010) process to improve teacher practice through collaboration, reviewing data, implementing collective inquiry/responsibility, and receiving appropriate professional development. This improvement continues to make a difference in the student learning that occurs within the chosen school.

CHAPTER IV: DATA COLLECTION, DESCRIPTION, AND ANALYSIS

After receiving Internal Review Board (IRB) approval from my university, and then IRB approval from the district, I was able to collect data for my research (Appendix G). The purpose of this single case study was to understand the impact of the implementation of the PLC (DuFour et al., 2010) framework on teachers' practices in a Title I school. Teachers in kindergarten through fifth grade were observed during their team meetings to determine the PLC (DuFour et al., 2010) processes and protocols that were followed throughout the meeting time. Reflexive journal (see Gerstl-Pepin & Patrizio, 2009, Rowling, 2000) entries were written in response to each team meeting that was observed. Included in the data collection were interviews with two administrators and five teachers. Each administrator and teacher was interviewed individually, and a reflexive journal (see Gerstl-Pepin & Patrizio, 2009; Rowling, 2000) entry was written as a reflection of what I heard. Other materials that were gathered included the Collaborative Learning Team protocol created by Mitchell (2017) and documents that were analyzed directly from the school system within the study, as well as from the school where the data were gathered.

The research questions that were focused on throughout this research included the following:

1. To what degree does this school implement MidAtlantic School District's PLC model?
2. How does the PLC shape teacher practice?
3. What role do school leaders have in facilitating the successful PLC process in this school?

Overview of MidAtlantic Elementary School

MidAtlantic Elementary School opened its doors in 2012. The school, located in a suburban area, includes children from approximately 40 countries. I selected MidAtlantic Elementary School for this single case study because it was one of three schools that won the DuFour Award, and has had continuous growth in SOL scores in consecutive years, beginning with the year it opened its doors in 2012 through the 2017-2018 school year in Grades 3 through 5. The demographics of this Title I suburban school represent various ethnic groups, including Hispanic, Asian, White, and Black students. At least 50% of the total student enrollment qualifies for free or reduced lunch.

This school has embraced the PLC (DuFour et al., 2010) philosophy, meaning no teacher is left in isolation and teams take a collective responsibility approach so all students can be successful. The administration and teachers have developed collective commitments to achieve this goal. Another fact that should be noted relates to teacher turnover. Despite administrative turnover, the teacher turnover has been minimal. Most of the teachers have been there since the school opened.

All teachers are given time during the school day to meet to collaborate, inquire, use best practices, and celebrate successes. This became quite clear through the observations. The approach taken by administrators, coaches, specialists, and teachers was to begin each grade-level meeting with either a grounding activity or a celebration of what occurred in each teacher's classroom that week. Some began with job-embedded professional development, such as learning how to do a number talk with students. One key element of this process was the participation of the administrative staff, who were present for every team meeting. This fit with the administrative team's commitment to

the actions they stated at the beginning of the school year. The next sections contain the information gained during the data collection time period through document reviews, observations, and interviews.

Document Analysis

I used a document review protocol (Merriam, 1998, p. 122) to analyze the documents used in this research. The protocol gave credibility to the documents being analyzed.

The first document I analyzed, "A Blue Print for Success: Collaborative Team Manual," was written in December of 2017 and is the manual used at the school with which I am affiliated, to organize and meet the requirements of the PLC (DuFour et al., 2010) through collaborative learning team meetings. This is the document teachers and instructional coaches use to commit to meeting the needs of the students at the school. The document was organized and designed by the principal and assistant principal to guide teachers in the PLC (DuFour et al., 2010) process throughout the school year. Because the principal was new to the building, he changed the original document that was written by the previous administration to include more up-to-date processes he had implemented within his other schools, making it a much more comprehensive document.

The purpose of "A Blueprint for Success: Collaborative Team Manual" is to have teachers commit to increasing student learning through the process of using collaborative learning teams (CLTs) within the PLC (DuFour et al., 2010) at the school. The common purpose is so teachers can engage in the work of the PLC (DuFour et al., 2010) to develop their understanding and skills around the curriculum, sound instructional practices, and collegial relationships. The reasoning for the creation of the document by

the principal and assistant principal, was to define the work that supported the goal of learning together, how this work would help them achieve this goal, and how they would accomplish the work within their school. The document is intended for the instructional coaches to use as a guideline to help teachers become more proficient in the CLT processes. The principal gathered the research based on his own research about organizational learning. He also followed many of the guidelines set forth in the district's PLC (DuFour et al., 2010).

"A Blueprint for Success: Collaborative Team Manual" represents many of the principal's firsthand experiences as a principal in another district for 10 years before coming to this district. His biases were that he knows this work as a result of having done it for so long, and he knows its impact on teacher practice and student learning. The principal was honest about what he wrote because he wanted to share the information at his new school. The school he came to was a failing school, and after 1 year of implementing the processes within this document with the staff, the scores improved, and the school is now fully accredited. There are numerous documents within the county that have shown the benefits of CLTs within PLCs (DuFour et al., 2010). There is a district document and documents from all over the district for each school. They are called "living documents," which are documents that are referenced daily at each school in the district. These documents are available to the public. However, each school's manual is private and must be requested for a specific purpose.

The second document analyzed, "A Resource Guide for Professional Learning Communities" (RGPLC; Elliott et al., 2012), was first developed in October of 2012 and was written by 15 different authors who are or were instructional coaches within the

chosen school district. I obtained the RGPLC document through the district's website, which is available to the public. Its purpose is to ensure all schools within the district are using similar procedures and protocols when conducting their CLT meetings.

The RGPLC document is complete as it was originally constructed and has remained the same since October of 2012 (Elliott et al., 2012). The RGPLC document continues to be the district's manual or guide, used when schools are beginning the PLC (DuFour et al., 2010) process and for periodic recalibration. It was produced to support the development of PLCs (DuFour et al., 2010) within the district. The document is a compilation of research-based concepts, strategies, and protocols shared by consultants and used by instructional coaches within the district. It is also used to support data dialogues, working conditions surveys, and best practices. The authors of this document attempted to set up protocols and guidelines for all schools to ensure they are following a similar format throughout the district to organize a PLC (DuFour et al., 2010).

The document is intended for administrative teams and instructional coaches to use to implement the processes within all schools. The authors followed the guidelines set forth by numerous experts in this field, such as DuFour et al. (2006), McLaughlin and Talbert (2006), and Schmoker (2005). This document is based on the research done by DuFour et al. (2006) and documented in their book, *On Common Ground*.

The authors of this document created it as a resource guide to support well-organized CLT meetings as part of the PLC (DuFour et al., 2010) process within all schools. To make an impact on teacher practice, they wanted the document to be based on previous research (Elliott et al., 2012). The goal of the document is to help schools improve teacher practice and student learning. Other documents exist in this district

showing the benefits of a PLC (DuFour et al., 2010). Most schools within the district have developed a "living document" that they use for organizing their PLCs. Some schools do not have a document or manual, but they do have a website with dedicated information on this topic and how it works within their school.

The next document I reviewed, "Collective Commitments," came from MidAtlantic Elementary School where I completed this single case study. The school does not have a collaborative team manual because the school strictly follows the protocols in *Learn by Doing* (DuFour et al., 2010). The collective commitments are created each year with the objectives and commitments for the staff being clearly outlined for the whole school year. It is part of the DuFour model, which requires the administration and staff to make a commitment to one another to do what is best for all students and staff. I was given this document by the principal of the school. It can also be found online on the school's website. However, some of the other documents I wanted to review needed special permission to access. This document was written by the administration, and each staff member must sign the document, committing to the guidelines set forth in the document.

The collective commitments were produced to ensure the teachers and specialists who were hired would be committed to the students at the school. The goal is to improve student learning and teacher efficacy. It is intended for all personnel hired at this school and based solely on the research done by Richard and Rebecca DuFour. The document represents what the principal at this school directly learned from Richard and Rebecca DuFour. The principal's bias was that he was a strong proponent of Richard DuFour's work on professional learning communities. The principal who opened this school was

honest with his staff about the work he envisioned for the school. He wanted to be sure that he did not misrepresent the work done by the DuFours. There are other documents that support this work and there is other research that takes a slightly different approach to the research done by the DuFours. Other books about PLCs are available in bookstores and libraries.

The documents I analyzed helped to guide the observations and interviews. I had the opportunity to analyze the documents prior to going to the school chosen for this case study. Learning more about the school's philosophy showed me the administration's commitment to continually improving teacher practice, which has led to improved student learning. The documents were very informative and were all connected to what is important to the staff at this school. Reviewing the documents helped me to better understand the PLC (DuFour et al., 2010) process in a more in-depth manner. These documents also reinforced what I have personally experienced as a member of an administrative team that believes in the PLC (DuFour et al., 2010) process. The next section contains details of the teams that were observed, the number of members on each team, their position, and their responsibility.

Description of Team Groupings

Tables 2 through 7 represent the participants observed at each team meeting, including their gender, position, and responsibility. The tables include observations of the kindergarten, first grade, second grade, third grade, fourth grade, and fifth grade team meetings. Table 8 includes the progress monitoring meeting that was held by the second-grade team the following week. In the tables, ESOL represents a teacher of English speakers of other languages and SBTS represents a school-based technology specialist.

Table 2

Kindergarten Team Meeting Representatives

Number of Participants	Gender	Position	Responsibility
1	Female	Kindergarten	Classroom Teacher
2	Female	Kindergarten	Classroom Teacher
3	Female	Kindergarten	Classroom Teacher
4	Female	Kindergarten	Classroom Teacher
5	Female	Kindergarten	Classroom Teacher
6	Female	Special Education	Spec. Ed. Students
7	Female	Reading Teacher	Struggling readers
8	Female	Principal	Administrator
9	Female	ESOL Teacher	ELL Students

Table 3

First-Grade Team Meeting Representatives

Number of Participants	Gender	Position	Responsibility
1	Female	1st Grade Teacher	Classroom Teacher
2	Female	1st Grade Teacher	Classroom Teacher
3	Female	1st Grade Teacher	Classroom Teacher
4	Female	1st Grade Teacher	Classroom Teacher
5	Female	Reading Specialist	Struggling readers
6	Female	Principal	Administrator
7	Female	ESOL Teacher	ELL Students

Table 4

Second-Grade Team Meeting Representatives

Number of Participants	Gender	Position	Responsibility
1	Female	2nd Grade Teacher	Classroom Teacher
2	Female	2nd Grade Teacher	Classroom Teacher
3	Female	2nd Grade Teacher	Classroom Teacher
4	Female	2nd Grade Teacher	Classroom Teacher
5	Female	Reading Specialist	Struggling Readers
6	Female	ESOL Teacher	ELL Students
7	Female	SBTS	Technology
8	Female	Special Education	Spec. Ed Students
9	Female	Principal	Administrator
10	Male	Asst. Principal	Administrator
11	Male	Asst. Principal	Administrator

Table 5

Third-Grade Team Meeting Representatives

Number of Participants	Gender	Position	Responsibility
1	Female	3rd Grade Teacher	Classroom Teacher
2	Female	3rd Grade Teacher	Classroom Teacher
3	Female	3rd Grade Teacher	Classroom Teacher
4	Female	3rd Grade Teacher	Classroom Teacher
5	Female	Instructional Coach	Facilitator
6	Female	SBTS	Technology
7	Female	Math Specialist	Math Teacher
8	Female	Math Specialist	Math Teacher
9	Female	Advanced Academics	AAP Teacher
10	Female	ESOL Teacher	ELL Students
11	Female	Principal	Administrator

Table 6

Fourth-Grade Team Meeting Representatives

Number of Participants	Gender	Position	Responsibility
1	Female	4th Grade Teacher	Classroom Teacher
2	Female	4th Grade Teacher	Classroom Teacher
3	Female	4th Grade Teacher	Classroom Teacher
4	Female	Instructional Coach	Facilitator
5	Female	Instructional Asst.	Classroom Support
6	Female	SBTS	Technology
7	Female	Math Specialist	Math Teacher
8	Female	ESOL Teacher	ELL Students
9	Female	Advanced Academics	AAP Teacher
10	Female	Special Education	Spec. Ed. Teacher
11	Male	4th Grade Teacher	Classroom Teacher
12	Male	Asst. Principal	Administrator

Table 7

Fifth-Grade Team Meeting Representatives

Number of Participants	Gender	Position	Responsibility
1	Female	5th Grade Teacher	Classroom Teacher
2	Male	5th Grade Teacher	Classroom Teacher
3	Male	5th Grade Teacher	Classroom Teacher
4	Female	Instructional Coach	Facilitator
5	Female	Instructional Asst.	Classroom Supporter
6	Female	ESOL Teacher	ELL Students
7	Female	SBTS	Technology
8	Female	Principal	Administrator
9	Male	Asst. Principal	Administrator
10	Male	Asst. Principal	Administrator

Table 8

Second-Grade Data Dialogue Meeting Representatives

Number of Participants	Gender	Position	Responsibility
1	Female	2nd Grade Teacher	Classroom Teacher
2	Female	2nd Grade Teacher	Classroom Teacher
3	Female	2nd Grade Teacher	Classroom Teacher
4	Female	2nd Grade Teacher	Classroom Teacher
5	Female	Reading Specialist	Struggling Readers
6	Female	ESOL Teacher	ELL Students
7	Female	Special Education	Spec. Ed. Students

As an outside non-participant observer, I used a collaborative learning team (CLT) protocol (see Creswell, 2007) as a pre-designed recording form to capture notes about what occurred during the observations. This tool, along with an audio recording, was used to acquire the needed data during the observation of each grade-level meeting. The purpose of the protocol (Mitchell, 2017) was to observe the evidence of collaborative work, conversations about student work, and evidence of professional practice.

After completing the observation, a reflexive journal (see Gerstl-Pepin & Patrizio, 2009; Rowling, 2000) entry was written to reflect on my observation. This reflexive journal (see Gerstl-Pepin & Patrizio, 2009; Rowling, 2000) entry focused on the description of the environment and included a self-reflection about what I know, how I know it, what shapes my perspective, how my perceptions affect the data collection, and how I perceived the members of the team. The reflexive journal (see Gerstl-Pepin & Patrizio, 2009; Rowling, 2000) also targeted what the members of the team know, what shaped their worldview, and how they perceived me as the researcher. There was a section in the reflexive journal (see Gerstl-Pepin & Patrizio, 2009; Rowling, 2000) about

how the audience who reads my research will receive my findings, what perspective they bring to my findings, how they perceive me as a researcher, and how their perceptions affect my research. Each reflexive journal (see Gerstl-Pepin & Patrizio, 2009; Rowling, 2000) entry helped me think deeply about what the research meant to me.

Observations

The observations took place over a 2-day period where I sat in the grade-level CLT meetings to review the PLC (DuFour et al., 2010) process conducted by the members of the team. Using a CLT protocol (Mitchell, 2007), I learned that each team discussed items related to mathematics or language arts. Each upper-grade team's focus was connected to math concepts, such as fractions and decimals, place value, and rounding. The lower-grade teams focused on reading and writing during their grade-level team meetings. I noticed the organic nature of these meetings, meaning that the teams naturally flowed from one topic to another without saying "let's move into our data dialogue," or "now it's time to plan next week's unit of study." Teams moved from one topic to another with ease.

During the fifth-grade team meeting, the discussion began with a data dialogue connected to an assessment that had been given the week before. The teachers noticed the fact that many of the students missed the same question, which led to the decision to change the verbiage of that question. One teacher noted her students did not do as well as others, and asked the team members, "What did you do to help your students be successful with this question?" The other teachers shared some strategies they used to teach prime and composite numbers using factors to determine whether a number was prime or composite. This demonstrated how teams collaborated and built trust among

themselves. The ESOL teacher spoke about how she worked with her struggling students and used a “rainbow strategy” to help her students determine the factors. The instructional coach posed the question about the number one. She was referencing a different question on the assessment. She asked, “Where would you put the number 1? Is it prime or composite?” The teachers decided to add the word “why?” at the end of this question to assure rigor with this question. After the data discussion, the team moved into planning the next unit of study on fractions and decimals.

Focusing on results where rigor is the main outcome, one of the fourth-grade teachers stated at the beginning of the meeting, “I’ve had great success increasing the rigor at the beginning of the lesson with an open-ended task. The students love this.” This was cause for celebration among the team members. From here, another teacher shared her thoughts, saying, “I used open-ended tasks in my classroom as well, and the students loved sharing their ideas of how they thought through the process.” The other teacher spoke about how his students built tenths after creating a whole number and then adding tenths to that number. Once the celebrations were complete, the team moved into the collective inquiry portion of the meeting by unpacking the essential standards for the next unit of study and developed questions for their next assessment related to place value. The math specialist had placed the standards for this unit on the large whiteboard at the front of the room. Teachers were asked to take the questions that were printed on slips of paper for the preassessment and place them under the appropriate standard. There were three essential standards with sub standards, and 20 questions to be placed under the appropriate standard. The teachers were given 5 minutes to sort the questions by standard before their discourse began. This gave the teachers an opportunity to dig

deeper into each question. They had to think critically about the purpose of each question and took collective responsibility for what the assessment would look like once it was completed. Once the questions were placed under the standards, the teachers, math specialist, and instructional coach initiated a conversation related to whether the questions were placed under the appropriate standard or if a question was even needed for this preassessment. This portion of the meeting took about 25 minutes. The last section of the meeting focused on planning the unit that was connected to the preassessment.

As part of the PLC (DuFour et al., 2010) process where action orientation and inquiry-based learning is a focus, the third-grade team began their grade-level meeting with a number talk. This showed they were willing to provide other ways for student learning through a number talk strategy. The instructional coach wrote the following equation on the whiteboard: “47-19.” She began by saying, “I want you to push yourselves to try and solve this problem two different ways.” The teachers were then asked to turn and talk to the person next to them to share ideas of how they could mentally solve the equation in two different ways. After 2 minutes they were asked to share their solution and how they solved the problem. The variety of responses were interesting to hear. Each group was asked to defend their answer. One teacher said, “I added 1 to 19 to get 20 then subtracted 20 from 47 and got 27. Then I remembered to add 1 back to the equation.” Some of the teachers were confused and needed a visual representation to see how the teacher solved the problem. Using a number line drawn on the whiteboard, the teacher showed the team how she came up with her answer.

What was interesting to watch was the open conversation among the teachers and how they all felt safe to share their ideas. This led to a discussion of whether they were

teaching students how to make a pictorial representation to solve the problem or whether the focus was on teaching a strategy. They wanted their students to first be fluent with pictorial representations and only one strategy at a time. They believed their students would not be comfortable with more than one strategy, as too many strategies at one time might confuse the students.

From this exchange of ideas, the teachers began planning the next unit of study related to rounding numbers. This is where the previous discussion came into play about using a pictorial representation to show how students round numbers. There was a debate around the idea of using a picture of a hill to represent how students determine when to round-up or round-down. The instructional coach made a strong case for not using the hill to round numbers, as she believed this was not a true mathematical concept. What was most notable about each of the observations was the free-flowing of ideas. The collaborative nature of this grade-level meeting was quite interesting to witness.

The second-grade team began their grade-level meeting with a celebration of what occurred in their classrooms during the previous week. The ESOL teacher shared how she began working with her small group of students on multi-syllabic words:

> I upped the ante with a lot of multi-syllabic words so that teachers will talk about the stress on the syllables. For example, when saying the word “di-no-saur,” make sure you don’t let students stress the middle syllable like “di-NO-saur.” Make sure that you tell your students to get their mouths ready to say each syllable carefully.

One teacher mentioned that she played a syllable game during her morning meeting by having the students clap the syllables in their names. The reading specialist shared a

strategy she used to help students pay attention to syllables in words: “You can have your students pay attention to how they open their mouths when they say the vowel sound and have them place their hand under their chins to feel how it moves with each new syllable.”

After the celebrations, the discussion turned to the Developmental Reading Assessment (DRA) and when teachers would administer this assessment. Being conscious of the action orientation and experimentation guiding principle of the DuFour (DuFour et al., 2010) model, the teachers shared that they had completed the assessment and would be prepared for the progress monitoring session the following Tuesday. There were a few questions that were put on the table to be discussed at the next progress monitoring meeting. These questions were related to comprehension and fluency and how students should be grouped. The reading specialist mentioned that all teachers should come prepared the next week with their analysis of the data to place each child in the appropriate intervention or enrichment group. She also shared a video with the teachers that showed how a student who worked with authentic text was more successful in responding to the comprehension questions. This led to the next part of the meeting where they determined whether they would use the Fountas and Pinnell benchmark reading program.

The first-grade team began their meeting by talking about a reading celebration in which their students would participate from September through November. What the team really liked about this was that they could allow their students to dress up like a book character at the end of the read-a-thon. One teacher said, “Oh, my kids are going to love this.” The team moved directly into planning the next unit of writing and reading.

By setting the goals for the unit in "I Can" statements, the students can take ownership of their work and set goals for themselves. This speaks to the collective inquiry done by teams to teach the essential standards to their students. The focus of writing and reading will be on how characters change throughout a story, and the students will be asked to respond to how the characters change as they write in their reading response journals about how the characters change. As there are a variety of levels in the class, some students will be offered the option to draw a picture and label their pictures.

Kindergarten was the last team I observed in their grade-level meeting. This team was the most enthusiastic and upbeat of all teams observed. It was clear that rapport was strong between the teachers. It was easy to see the trust, collaboration, and support that each team member provided to one another. The exchange of ideas between the members of the team, while monitoring student progress, made it clear that collaboration was extremely important to this team.

When the discourse began, the teachers spoke about how many students struggled with letter recognition. The discussion turned to how they would differentiate the instruction and strategies used to instruct groups of students. One teacher stated:

> First, we need to have our students say their name and read their name. From there, we will have them say the letters in their name and then have their names placed on their book boxes. So, we will start by learning upper and lowercase letters in their names.

The teachers shared by modeling the letters in their own names.

It was apparent from the field notes that collaboration was valued by all teams. At most schools where I have been a member of a grade-level team or a specialist, we

were very deliberate about what would be covered within our limited collaborative learning team meeting. What was different about observing the teams at MidAtlantic Elementary School was how they allowed things to work organically. If a topic was brought forth during the meeting, it was discussed right when it was asked. They did not wait and say, "Oh, that's not on our agenda today, we can talk about that at our next meeting." The teams shared ideas and instructional strategies, provided support to their teammates, and celebrated their successes "in the moment" (See Table 9).

Table 9

CLT Observation Data: Frequency of Ideas Shared

Number of Teachers	Number of Administrators	Grade	Evidence of Collaboration	Student Works	Professional Practice
8	1	Kindergarten	3	4	3
6	1	First	4	5	3
8	3	Second	3	2	4
10	1	Third	3	3	3
10	1	Fourth	3	6	4
7	3	Fifth	4	7	7

Data Dialogue

As mentioned in the second-grade team meeting, they had planned on holding a progress monitoring/data dialogue the following week. This observation demonstrated the team's commitment to collective responsibility as it related to language arts and where their students were in their progress. The reading specialist began the meeting by reviewing the goals for the 3-hour discussion. Each teacher took on a role or responsibility during the session, such as note-taker, time-keeper, or data gatherer, among others. Displayed on the whiteboard at the front of the room was the data page where all information about individual students would be placed. The main goals of the meeting

were to determine how they would group students, what supports would be put in place, how they would track individual progress, how they would communicate goals, and what would the instruction look like when implementing various levels of text.

The data gathered included DRA scores, World-Class Instructional Design and Assessment (WIDA) information, and iReady data. The last data point mentioned played a minuscule role in the decisions made at this meeting. The teams relied more on common assessments instead of iReady data based on the nature of the data they collected. IReady is a universal screener that is required by the county, but it does not provide teachers the comprehensive data they are looking for in an assessment. As a result, the focus was on DRA and WIDA results. The dialogue moved in the direction of how they would group their lowest students first. This would require using a variety of programs, such as "Fundations," a phonics-based program that is used nationwide, and paying attention to the phonemic awareness of their students.

What I noted from this group of teachers was that they spoke about every child by name and by need before placing them in a group for instruction. The lowest groups would focus on letter sounds, applying beginning sounds to words and learning the 25 sight words needed to get them started with reading. The second group would begin working with Level three books from the DRA levels with the goal of making Level six by November. Throughout this meeting, the teachers felt safe to ask questions, provide instructional strategies, and provide general support to their peers.

A first-year teacher asked, "What does a year's worth of growth look like?" The reading specialist shared a chart with the team showing what a year's growth looked like within the DRA. Another teacher on the team asked, "How can we stretch that goal so

that our students can make even more progress?" For ESOL students, teachers wanted to know their WIDA levels to help determine where instruction would begin. With each group that was discussed, the focus would change. For example, the next group's focus was on blends, which are words where two or more consonants are blended together, but each sound may be heard in the blend; consonant-vowel-consonant (cvc) patterns in words; and digraphs, which are groups of two or three consonants in words that makes a distinct consonant sound. One unique technique students like to use is tapping, where the students tap the syllables on their face or on the table. This strategy helps them to sound out syllables in words. The fourth group was going to focus on tapping and blending. With each new group, the DRA reading level would move up in instruction. The team concluded with 14 groups that would receive various levels of instruction and rotate between classrooms and work with different second-grade teachers. Students reading higher-level texts would read fiction and non-fiction texts with a focus on comprehension and retelling of stories. Teachers would also have students practice their fluency.

The intentionality of the discussion and the need to hold each other mutually accountable was paramount in this progress monitoring meeting. Collective inquiry about what essential standards would be taught, along with how instruction would be differentiated, was important to the classroom teachers. It was apparent how well the teachers knew their individual students and their needs at such an early time in the school year.

Table 10

CLT Observation Data–Data Dialogue: Frequency of Ideas Shared

Number of Teachers	Number of Administrators	Grade	Evidence of Collaboration	Student Works	Professional Practice
7	1	Second	5	11	9

Administrative Interviews

Interviews were an important part of the work that was done. I conducted face-to-face, in-person interviews with administrators, classroom teachers, and specialists. I established rapport with each interviewee by participating in the grade-level team meeting as an observer. Each interviewee felt comfortable talking to me because we had established a bond prior to the interview. After each interview, I wrote a reflexive journal entry to reflect on what I learned in the interview.

Interviews were held on two different days starting with the administrators of the school. Table 11 shows the number of times each administrator shared information connected to the four pillars of the PLC (DuFour et al., 2010) process as well as the standards covered during the PLC (DuFour et al., 2010) process.

Table 11

Numbers of Times Each Pillar or Guiding Principle was Mentioned During Administrator Interviews

Themes & Guiding Principles	Assistant Principal	Principal
Foundations & Pillars	2	2
Shared Vision & Mission	4	3
Values & Goals	3	3
Culture	5	10
Collective Inquiry	6	9
Collaborative Teams	8	5
Continuous Improvement	2	6
Action Orientation & Experimentation	4	7
Results Oriented	2	3

Assistant Principal Interview

The assistant principal (AP) provided background information to demonstrate what led to the decision to fully implement the DuFour (DuFour et al., 2010) model of the PLC process. The commitment began when the first principal of the school felt this was the right direction to lead his staff and to make sure this demographic of students would experience success from the first year the school opened. He was a strong proponent of the DuFour (DuFour et al., 2010) PLC model. He worked very closely with the DuFours and their team to implement the PLC process.

The AP shared with me the philosophy of needing to "go slow to go fast." What he meant by this was that when the first principal came to this school, he had a plan to follow the DuFour PLC model (DuFour & Eaker, 1998). This meant having to think very carefully about how to get the staff to buy-in to this philosophy. They began by determining the administrations' commitments to the staff, and to also have the staff help

in creating the vision and mission statements for the school. The AP shared with me the collective commitments that the administrative team put together so their staff would understand that they were very serious about their role in this new way of learning together.

The administrators had to define their mission and their vision for the school, which were a part of the foundations of the PLC. The DuFour model (DuFour & Eaker, 1998) created the four pillars of a shared vision, shared mission, values, and goals. The focus was to have the staff behave in a way that served the mission of the school. This has helped MidAtlantic Elementary School to be successful in the implementation of the PLC (DuFour et al., 2010) framework. The administrators have spent a great deal of time creating an environment where the staff has committed to doing whatever it takes to help students be successful.

When asked about creating an environment of shared values and goals, one of the AP's responses was that the administrative team embraced the co-principal model. Just as they expected teams to collaborate, they embodied that work as an administrative team: "We try to model collaboration amongst ourselves." They were also transparent with their staff, especially when it came to celebrations across the building. Through a weekly newsletter, the administrative team highlighted what was going on in the building through pictures and text. Every week they highlighted something exciting going on with teams or with individual teachers and their students. Even when they sent an e-mail out to the staff, all of their names were on that e-mail. They also implemented a "guided coalition" where they did not have team leaders. Instead, a group of teachers and

specialists chose to be a part of the guided coalition to help develop new ideas for continuous improvement to be shared with the staff.

One interview question was, "How does the PLC process improve teacher practice?" This was the heart of this research. The AP's response was:

> We find that we are more effective when we come together to collaborate and share ideas, rather than going to our classrooms and working in isolation. Our teachers constantly reflect on how their lessons went, asking themselves what worked and what didn't work,

The teachers also collaborated during data dialogues when they talked about all of the students, not just the students on their roster. He mentioned that the teachers allowed themselves to be vulnerable so they could be open to suggestions of ways to make a lesson better.

Another question was, "In what ways could the PLC (DuFour et al., 2010) process be modified to further teacher practice?" The AP stated it was not so much about modifying the process, but more about making it better. What was interesting was that all the interviewees had a similar answer about how they were always trying to get better. The words used were "we never arrive," meaning they were always working to make the process better for the teachers and for the students.

In response to the question related to how administrators provided time for teachers to collaborate and plan so it did not interfere with instructional time, he shared how the specialists created the master schedule: "The specialists are the individuals who are most critical to making the process work." The reasoning behind this was so the specialists could develop a schedule where there was an hour of common planning time.

This allowed teams to plan, create common assessments, share instructional strategies, have data dialogue, and celebrate successes.

Principal Interview

The interview with the principal supported what the AP said during his interview. When asked about how well the PLC (DuFour et al., 2010) framework was implemented at the school, she said, “We administrators take this process very seriously.” The school followed Learn by Doing (DuFour et al., 2010) to implement the four pillars of the PLC (DuFour et al., 2010) process: “We implement it to a very high capacity, but I believe there are always things that we can get better at every year.” The administrative team started the school year with a grounding in the PLC (DuFour et al., 2010) philosophy developed by Richard DuFour. At their first meeting each year they came back to the shared vision and mission and their collective commitments. The goals were based on current data and where students were instructionally. New team members learned about the commitments from their administrators. They also learned from their experienced teammates who shared what it meant to be a member of this school.

When asked about expectations of teachers and specialists as they looked at their practices in their grade-level meetings, the principal stated that the first and most important part of implementing the PLC (DuFour et al., 2010) process was to create the culture: “Being a professional learning community is how we function.” She mentioned that her staff were a collaborative community of learners. She stated, “The administrative team develops collective commitments, which holds them accountable to their staff.” Just as teams created norms for their grade-level meetings, the administrators developed norms for how they would work together, revisiting them periodically to ask

themselves how they were doing. In both interviews, the administrators shared that their philosophy also allowed for tight and loose team structures. For example, they were tight on norms, data dialogues, and progress monitoring, but loose on teachers' teaching styles. Teachers could be creative in how they presented their lessons and the work they needed to do to help their students be successful.

The principal's response to the question about how the administrators created an environment of shared goals and values was interesting: "We make sure that we're a part of the conversation as much as possible." Part of this was done through the school improvement plan. The teachers and specialists also looked at data very carefully to determine where students were at and what they could do to improve the instruction. The main thought was that students came first and there were always high levels of learning in every classroom, as well as high levels of learning for teachers during their job-embedded professional development.

I asked the question, "How does the PLC (DuFour et al., 2010) process contribute to improving teacher practice?" The principal's response was, "The PLC process is part of how they improve teacher practice and allow for continuous growth through the various teams. Teachers have content job-embedded professional development that will be used as soon as the teachers go back to their classrooms." This was evident during the third-grade team meeting when the teachers learned about doing a number talk. "I was a part of the team meeting and participated in the number talk. I shared my strategies of how I solved the problem mentally, and the team discussed my strategy using a pictorial representation." The principal knew that the teachers would go back to their classrooms, and during the math lessons they would start with a number talk: "This is what I mean

about the content job-embedded professional development." She knew the teachers would go back and discuss pictorial representations versus strategies, as they implemented this right away. Another way teachers improved their practice was through observations of other teachers: "It's all very organic. Teachers are learning from one another every day."

Next, I asked how the PLC (DuFour et al., 2010) process might be modified to improve teacher practice. Here the principal echoed what the AP said, stating they had "to go slow to go fast . . . To modify the process is not what we need to do, but we can learn from one another, which is how we can improve teacher practice." One thing she had noticed about her teachers was that they had strong professional and social capital, meaning they worked closely as a team. "Teachers also have decisional capital, because they are given the opportunities to decide what their teams need." This goes to collective efficacy where teachers are not alone but work closely together.

The last question related to how the administrative team provided time for teachers to collaborate and plan without interfering with the instructional schedule. The principal's answer was very similar to the AP's response: "We have members from all the teams and the specialists who come together to share how they want the schedule to work." As a final response to this question, the principal said, "Culture involves everyone in the process, so everyone who is impacted by the schedule has a say in how it will work."

Teacher Interviews

The teacher interviews began during the second day at MidAtlantic Elementary School. Each teacher came to the interview prepared to share his or her commitment to

the PLC (DuFour et al., 2010) process in a face-to-face interview. Table 12 depicts the responses by the teachers as they spoke about the four pillars of the PLC (DuFour et al., 2010) framework and the standards that were part of the PLC (DuFour et al., 2010) process.

Table 12

Number of Times Each Pillar or Standard was Mentioned During Teacher Interviews

Themes & Standards	4th Grade Teacher	Advanced Academics Teacher	3rd Grade Teacher/ SBTS	Reading Specialist	Kindergarten Teacher
Foundations & Pillars	1	1	5	1	4
Shared Vision & Mission	2	1	1	1	1
Values & Goals	1	3	2	2	1
Culture	4	2	5	3	7
Collective Inquiry	9	4	8	4	9
Collaborative Teams	6	4	6	4	6
Continuous Improvement	5	3	4	3	6
Action Orientation & Experimentation	2	3	3	1	5
Results Oriented	3	1	1	2	3

Interview with Fourth-Grade Teacher

I began this interview by introducing myself and getting to know the background of the fourth-grade teacher, named Jack. He mentioned that he began his teaching journey at MidAtlantic Elementary School 3 years ago. He had taught at other schools in other counties, but he was ready for a fresh start and MidAtlantic seemed to be the “right fit” for him. When asked whether he felt the PLC framework was fully implemented he stated, “Yes, and it is a completely different way of being here at this school. Everything we do is for the students.”

He mentioned that teachers followed the four pillars of a shared vision and mission, values, and goals as they worked together. When asked what he believed was the most important piece of the PLC (DuFour et al., 2010) process and why, Jack said he had been at a school prior to MidAtlantic Elementary School that said they were a PLC, but the teachers worked in isolation. "Here at MidAtlantic Elementary School we provide a total collaborative team culture. It's not just my students, but all of our students." Jack mentioned that planning meetings and progress monitoring meetings were held at this school. "I don't feel like I'm on an island like I did at my other school." Another thing he mentioned was how all teachers and administrators took collective responsibility for what happened at the school to ensure high levels of learning for adults and students. "So, when a student isn't learning, we ask ourselves, what can we put in place to help the student, and if they already have mastery of a concept what can we give them to enrich their learning?"

I asked Jack, "How does the PLC (DuFour et al., 2010) process contribute to the improvement of teacher practice?" He was very forthcoming in his answer. He shared about the collaborative culture that existed and the focus on results. He also shared that administrators provided opportunities for teachers to receive job-embedded professional development to make sure there were continuous improvements in teacher practice. Jack stated:

> We do learning-walks, where teachers can sign-up to go around to different classrooms to view what's going on in those classrooms. So, by doing classroom observations and professional development during grade-level meetings or after

school opportunities, teachers take advantage of improving their practice every day.

When asked about how he might suggest improving the PLC (DuFour et al., 2010) process at the school, he felt that this was a difficult question to answer. His response was:

> I think what we need to do is make sure we continue to hire people who are committed to what we are doing at our school and continue to improve ourselves as teachers during our PLC process through more professional development.

When asked what ways teachers had a voice in the PLC protocols that were followed, Jack's response was, "We have a 'guided coalition' that leads our teams within our school. These teachers come together to make decisions as a group that supports our professional learning community." Another element he brought up was how he felt very comfortable bringing ideas to the table where he felt that his voice was heard and considered in the decision-making process. "As a team, we hold ourselves accountable for what happens with our students."

Interview with Advanced Academics Teacher

The second teacher interview was with Norma, the advanced academics teacher at the school. She worked with students at all grade levels and brought a unique perspective to the interview. When asked about how fully the PLC (DuFour et al., 2010) process was implemented at MidAtlantic Elementary School, she said, "I think it is implemented very well; however, there is always room for growth and improvement." This was surprising, but less so after hearing how important continuous improvement was at this school. She talked about how at the beginning of the school year the whole staff came together to re-

commit themselves to the PLC (DuFour et al., 2010) process. This harkened back to the statements made by the AP and principal of the school.

In the second question about what she believed was the most important piece of the PLC (DuFour et al., 2010) process, Norma referred to the culture of the school when she talked about what they wanted their students to learn and how they were going to learn the curriculum. Using the four driving questions of what do we want our students to learn, how will we know if they have learned it, what will we do if they have not learned it, and what will we do if they already know it, they planned in meetings how they would meet the needs of their students. Norma commented on the fact that numerous people came to the table to support the students: "For me, it's important that we have the right people at the table, such as the classroom teachers, specialists, and the administrators all playing an important role in making sure we do what is best for kids." Norma also made a powerful statement when she said, "It's like true ownership of our students and what we will do to help our students be successful."

I next asked Norma, "How does the PLC (DuFour et al., 2010) process contribute to the success of the school?" She alluded to the fact that for the school to be successful, they needed to meet the needs of the students: "We look at individual needs of students and then provide the best instructional strategies and materials to help our students be successful." She also said, "If we don't act as a true professional learning community we aren't functioning properly, and that doesn't benefit our students at all." She also mentioned that they were collectively responsible for all students at a grade level: "It's not just one teacher's class, it's everybody's classes. So, the teachers share in that responsibility to be successful."

When asked how the PLC (DuFour et al., 2010) process contributed to the improvement of teacher practice, Norma was quite emphatic about the fact that continuous improvement through this process was one of the ways teachers improved their practice. "We have shared professional development opportunities at each grade-level team meeting. We also have shared knowledge and a common language across the school." Sharing strategies at CLT meetings is a powerful way to get everyone on the same page with relation to instructional strategies and the next steps in instruction.

The next question, which seemed to be the most difficult question for everyone, was what would she do to improve the PLC (DuFour et al., 2010) at her school? Norma felt that:

> By fine-tuning progress monitoring and what that looks and sounds like, we might look at more longitudinal data. For students, we try to have different ways of recording data, but I think there could be more efficient ways of tracking our data for progress monitoring.

Norma was interested in seeing the growth over time to determine where students struggled and where they were successful, as this might help to better hone the reteaching process.

The next question was about in what ways teachers have a voice in the PLC (DuFour et al., 2010) process. Norma said:

> As a part of our culture there is this concept of loose and tight. We're tight on how we follow the four driving questions and progress monitoring, but we are loose on what that looks like at each grade-level meeting.

Norma stated teachers had more autonomy in their instructional practices or how they communicated the material to their students, as long as it helped students be successful.

The last question pertained to the role leaders played in the PLC (DuFour et al., 2010) process. Norma was quick to state that the administration was constantly present at the grade-level meetings: "They are in our classrooms, they participate in the professional development with the teachers, they provide the funding needed for training and coverage for teachers." What she really liked was how they shared in what was going on during each team meeting. They did the work with the teachers. I saw this in action as a non-participant observer. I have been in other team meetings where I did not feel as though I was a part of the process. The PLC (DuFour et al., 2010) meeting was only meant for teachers, not for administrators.

Interview with Third-Grade Technology Specialist

The third-grade teacher, Lisa, recently became the school's technology specialist, so she had experience with both worlds. I met her during the grade-level meeting and she was a wealth of knowledge. She was anxious to share her perspective on how the PLC (DuFour et al., 2010) process worked at the school. When asked how well the PLC (DuFour et al., 2010) framework was implemented at MidAtlantic Elementary School, she was very forthcoming. She had been there since the school opened and was one of the staff members who was fortunate enough to meet the DuFours when the PLC (DuFour et al., 2010) process began at the school. Lisa said the administrators collectively created a mission and vision statement along with their collective commitments to the staff. They were expected to embrace the PLC (DuFour et al., 2010) philosophy from the beginning. She stated, "So I believe we implement the PLC

(DuFour et al., 2010) framework very well. We do an excellent job at this, and it is instilled in every teacher and every educator in our school."

I asked Lisa what she believed was the most important piece of the PLC (DuFour et al., 2010) process and why? Her comment was, "That's a loaded question. To me, it's collaboration and shared ownership of the learning for our students and staff." She mentioned that prior to coming to MidAtlantic Elementary School she worked at a school where everything was done in isolation. Lisa said, "There's no way you can meet the needs of all of every single learner in your classroom. Here at this school, we have planning meetings, progress monitoring, and we can even chit-chat in the hallway." She shared that it was the coming together and the collective responsibility that made the difference.

In her response to the next question, Lisa discussed how the PLC (DuFour et al., 2010) process contributed to the success of the school:

> So, it's the culture we've created where we all come together at the beginning of the school year and for old and new members of our school we get grounded in the philosophy of the work that we believe in as a staff.

She characterized the importance of the four critical questions, the team planning to figure out what students need, the progress monitoring to see what students had learned or not learned, to plan for them. "It is constantly revisiting and going over the process and refining it each year. We believe that we can always improve, and we all have the same beliefs and values."

Lisa expressed her thoughts on whether the PLC (DuFour et al., 2010) process affected teacher practice: "I think teachers learn best from each other and most of our

professional development is job-embedded." She also felt that "teachers have strong professional relationships with each other, so they feel invested in what we're doing. There is a trust and willingness to share even when we make mistakes." An example she gave was when the teams were looking at the data: "If your data is up, and your students did not do well, there is a willingness to find out from the other teachers on the team what they did to help their students succeed." Lisa mentioned that the teachers shared strategies with one another and walked through the process of that strategy with each other.

The next question was how she would improve the PLC (DuFour et al., 2010) process at her school. Lisa stated, "One thing that comes to mind is vertical articulation. It would be wonderful to serve as agents across teams to deepen our knowledge about another grade level's curriculum." She communicated a scenario that occurred during the previous week's team meeting where the third-grade team and fifth-grade team came together to learn something about guided reading, and how it might look one way in third grade but another way in fifth grade. As there were students working at various levels, the fifth-grade teachers were able to take some of the third-grade strategies back to their classrooms to use with their students. Lisa said, "If there was a more systematic approach they could find to do this, it might go a long way in improving the PLC process at our school."

When asked in what ways teachers had a voice in the PLC (DuFour et al., 2010) process, Lisa also brought up the concept of loose and tight structures at this school:

> We have an expectations document that we sign when we begin at our school, and there are certain things that the administration is tight on. For example, teams

> meet formally to do progress monitoring, plan units, collaborate on strategies, and then they are loose on how they will plan the units, and how they will teach the curriculum.

The teachers had a pacing guide they followed, but they had the autonomy to use the strategies that worked best for them.

When addressing the question about the role the school leaders played in the PLC (DuFour et al., 2010) process, again Lisa mentioned the culture of the school: “So, it’s about shared ownership, a shared vision, and mission, as well as our collective commitments to each other.” She believed the administration had created an environment where teachers felt comfortable expressing themselves and sharing their ideas. Lisa also stated that the administration protected staff and kept them focused on the vision and mission of this school.

Interview with Reading Specialist

Susan was the reading specialist who worked with all grade levels and had a distinct perspective, as her focus was mainly connected to language arts and how she could help support struggling readers. When she entered the room, she seemed a little nervous, but willing to participate in the interview. When asked how she felt the PLC (DuFour et al., 2010) framework was implemented at her school, she stated, “I think that we have a pretty strong implementation of the PLC framework because we have the opportunity to collaborate with one another every day.” She did not believe that anyone was resistant to this environment.

When asked what she believed was the most important piece of the PLC (DuFour et al., 2010) process, Susan said, “I believe that collaboration around the planning piece is

very important." Her thought was that if a teacher was working in isolation, that teacher would struggle to meet the needs of learners. In the type of environment where collaboration is honored, the teachers can thrive because they have other members of their team to support them: "It comes back to the collective responsibility to help our students succeed." I asked her how the PLC (DuFour et al., 2010) process contributed to the success of the school. Susan expounded on the fact that this process helped teachers be successful with their students: "The other team members can kind of push them up and help them when they are struggling. This is what makes our students so successful."

This helped to answer the next question when I asked Susan how the PLC (DuFour et al., 2010) process contributed to the improvement of teacher practice: "I think it is huge in improving teacher practice. So many teachers think that it will destroy individual creativity, but it does just the opposite." She talked about how teachers shared their strategies and ideas and felt safe doing this because they were supported by their team members. From my own experiences in the PLC (DuFour et al., 2010) process, I believe this to be the case. If a teacher feels safe to speak up and others compliment the teacher on his or her ideas, the teacher will be willing to share more often.

With regard to the next question related to what she would do to improve the PLC (DuFour et al., 2010) process at her school, Susan echoed some of what Lisa had said about vertical articulation:

> There's not as much vertical articulation as I might like to see. I worked with the third and fifth-grade teams on sharing guided reading strategies, and both teams were ecstatic when they each learned that they could use similar strategies in both of their classrooms.

She also mentioned that having teachers go into each other's classroom to see the strategies in action would be a wonderful experience.

When asked about whether teachers had a voice in the PLC (DuFour et al., 2010) process, Susan said she believed they did. She mentioned that the administration was tight on making sure teams met to plan weekly, but that teachers had a voice on how those meetings were run, which speaks to the loose portion of the PLC (DuFour et al., 2010) process. "Our administration believes that all of us are leaders in this building, so we're given opportunities to work on different projects that are happening in our school." In her response to the last question about what role the school leaders played in the PLC (DuFour et al., 2010) process, Susan said, "They set the tone for what is happening in our building. So they know that I'm an expert in my area as a reading specialist, so they trust me to share information with all of the teams." Susan stated the administration attended the grade-level meetings and were active participants. This speaks volumes to their teams that they were all in this together.

Interview with Kindergarten Teacher

The last interview was with the kindergarten teacher, Lucy. Lucy was enthusiastic as she entered the room and excited to share what she knew about her school. To the first question about whether she believed the PLC (DuFour et al., 2010) framework was fully implemented at her school, her response was, "I definitely believe 100% that the framework is fully implemented at our school. I started at the school when it first opened, and I've been on this journey now for 7 years." Lucy believed there was always continuous work that needed to be done, so the teachers never feel they have truly arrived. "We're always trying to get there, but everyone who works here believes in our

vision and our mission." She stated that teachers worked collaboratively and tried to answer the four critical questions.

In response to the second question regarding what Lucy what she believed was the most important piece of the PLC (DuFour et al., 2010) process, she immediately said collaboration: "There I am, a classroom teacher trying to meet the needs of all of my students. When I rely on other people, we're going to get better results." She spoke about the collaboration within team meetings, and how as a team they could split up the lessons for a unit and only focus on one lesson while others focused on another lesson. "You can totally devote yourself to providing the best strategies, materials, and ideas to that one lesson, and then share it with your team members, and they, in turn, share their lessons with you." Lucy mentioned there was less burnout because teachers were not doing it all by themselves. She gave another example of working with children:

> When you're working hard to help a child, and you've tried everything you can think of, but it's not working, so you turn to others to help you, and they can give you a different perspective of how to help that child. It's a win-win situation.

I asked Lucy how she felt the PLC (DuFour et al., 2010) process contributed to the success of the school. She spoke directly to the collective responsibility piece, where teachers believed all of the students were their students, not just the students in their class.

> So, in this situation, we focus on the individual child to find out their need because we want them to succeed in our school. The team looks at the data together and analyzes that data, so we can come up with strategies together to help that student be successful. It's more culture versus climate I think . . . I have

> my classroom climate that I can read every day, but the big picture is our school culture and how we're going to help the students in a classroom where another teacher might be struggling. Our culture dictates that we support one another in every situation.

Here Lucy mentioned that teachers were mutually accountable for what happened at their grade level.

When asked how the PLC (DuFour et al., 2010) process contributed to the improvement of teacher practice, Lucy talked about how it was for her when she first began teaching 7 years ago and how much she had grown since then. "But I'm going to continue to grow every year, because of the supports that have been put in place. This school promotes growth." She again referred to the mutual accountability piece and how teachers within this school supported one another. It did not seem to matter what grade level a teacher was at because everyone knew everyone else and made sure that everyone was made to feel successful. Lucy stated, "We have a 'guided coalition,' which in our school includes teachers from any grade level who want to step up and be leaders in our building." Here she spoke about how that team came together and took learning-walks called "Tiger Trails" to see what teachers were doing in the building. They brought that information to the grade-level meetings and shared strategies with various teams. Sometimes teachers would videotape themselves to share with teachers who did not have time to visit another teacher's classroom. They did job-embedded professional development to improve their teaching.

When asked what she would do to improve the PLC (DuFour et al., 2010) process at her school, Lucy mentioned how different specialists did push-in to the classroom to

work with students, but they did not do a lot of pull-out instruction. “I think about our kindergarten students who are second language learners, yet all of our kindergarten students are language learners. It would be great if we could support them more in the process of language learning.” She was speaking in reference to what supports might be put in place to help all students learn the language more proficiently. “We need to make sure we are differentiating our instruction and figuring out strategies during our grade-level meetings that will help our students be successful.”

The next question related to whether Lucy believed teachers had a voice in the PLC (DuFour et al., 2010) process. Lucy said it went back to the foundations and culture of the school: “We’ve all created collective commitments as administrators and teachers that we will follow each year. So yes, we have a voice, but we also hold each other accountable for what is tight and what is loose.” She shared that all teams had norms, which was tight, but every team’s norms could be different. If someone violated a norm he or she was held accountable. “By establishing these norms ahead of time, people on the team know that they will be called on it if they don’t follow a norm that was already written.”

The last question was, “What role do the school leaders play in the PLC (DuFour et al., 2010) process?” Lucy started by stating the importance of the collaboration piece of the PLC (DuFour et al., 2010) process. She realized the importance of the administration making certain decisions about what structures were put in place, but she also recognized that the school leaders gave teachers certain freedoms to do what they believed was best for their students:

> So, it might include one of the administrators coming in and covering a class, or one of them going to the cafeteria to help if we're short-handed. They are always visible . . . that visibility piece is so critical because there's never a time when you don't feel comfortable asking them for something.

Analytical Framework

The teachers all provided open and honest answers, which made it easy to see how much they loved working in this type of environment. The interviewees were knowledgeable and spoke eloquently about what the PLC (DuFour et al., 2010) process meant to them as individuals and as members of a team. Figure 3 shows the standards each person spoke of throughout the interviews.

Shared Mission, Vision, Values & Goals	Collective Inquiry	Collaborative Teams	Cont. Improv.	Action Orientation/ Exper.	Results Oriented
All students can learn	Unpacking SOL standards	Commitment to collaboration	Small group instruction	Provide various opportunities for students to learn	Celebrate success of student learning
Expectations document	Determine essential vocabulary	Trust to speak their truth	Continuously Improve practice	Use variety of assessments	Increase rigor
Collective commitments	Teaching of essential standards	Vertical articulation	Tier 1- Core instruction	Analyze pre and post assessments	Provide feedback for ongoing progress
Grounding in PLC process	Develop shared understanding	Unpacking SOL standards	Tier 2 - Strategic intervention	Analyze assessments by question	Reflect on next steps
Guiding coalition	Common assessments	Collaborative team meetings	Tier 3 – Intensive instruction	Use Multi-Tiered Systems of Support (MTSS)	Document and share effective instructional strategies
Planning	Enrichment activities	All voices heard	Progress monitoring	Review interventions	Data dialogues
Four Critical Questions	Interventions	Progress monitoring	Targeted feedback	Review work samples	Self-reflection
Mutual accountability	Differentiated instruction	Differentiated instruction	Determine students' misconceptions	Progress monitoring	
		Data dialogues			

Figure 3. Guiding principles shared within reflexive journals.

Summary

In summary, this chapter was devoted to describing the data collected through document reviews, observations, interviews, and reflexive journal entries at MidAtlantic Elementary School. The data revealed the commitment of both the administrators and teachers to helping their students succeed. Following the *Learning by Doing* (DuFour et al., 2010) philosophy, the staff at this school used the guiding principles set forth by the model. The focus was on the four pillars and guiding principles of (a) a shared vision,

shared mission, values, and goals; (b) collective inquiry; (c) collaborative teams; (d) continuous improvement; (e) action orientation and inquiry-based learning and (f) results oriented. The culture of the building was maintained by the collective commitments made by the staff.

Within the various themes and guiding principles was some overlapping of characteristics in the different standards. For example, unpacking SOL standards is in both collective inquiry and collaborative teams. The reason for this is that as teams are doing collective inquiry as they discuss what is important about these essential standards, there is also a collaborative effort to determine which essential standards are reviewed at each meeting. Progress monitoring is also found in collaborative teams and action orientation/experimentation. Every teacher on the team is responsible for completing the data gathered for progress monitoring, and they are also responsible for making decisions about how they will make sure all students are learning. Differentiated instruction overlaps with collective inquiry and collaborative teams because teams talk about how they will differentiate instruction and share instructional strategies as they collaborate to improve student learning.

Other themes emerged while gathering data in the observations and interviews. The first theme was connected to the culture of the building. It was easy to recognize the safety and comfort of the interviewees as they spoke about how they felt free to speak up during team meetings, staff meetings, and in their classrooms. If they wanted to try something new or bring a new initiative to the table, they felt comfortable and safe to do so. The environment promoted risk-taking. This is profound, because administrative support for risk-taking within an inquiry stance is necessary if a school's leaders want to

change the school culture to one where everyone feels safe and comfortable to speak their mind.

Another theme that was mentioned during the interviews, especially by the administration, was the idea that "we need to go slow to go fast." What was meant by this is that when they first decided to use the DuFour model, it required the administration to "think through what they were committing to as a new school." This meant they had to determine what their collective commitments would be to the staff, allow themselves and the staff to come up with a new vision and mission statement that would be shared by all, and determine the goals and values of their school. This took time and energy so they could be successful that first year.

There was also the theme or idea of "tight and loose" within this organization. When asked what was meant by this, both administrators and every teacher who was interviewed stated that they:

> Have to be tight on things such as everyone will collaborate, team meetings will be held weekly, teams will create norms for themselves, all teams will gather data, and all teams will go through progress monitoring meetings to determine next steps for the students.

Where teams could be loose was in what norms they wrote for their team, how they used instructional strategies, and the types of professional development they would attend outside of school or within their team meetings. These sentiments were echoed in the observations of the various teams.

The most intriguing theme was the idea that "we never arrive." The principal and three of the teachers mentioned that "we are always a work in progress so that we never

arrive at a final destination." The administration, teams, individual teachers, and specialists knew they had to continue to grow so their students would be successful. The way they tried to improve teacher practice was from the job-embedded professional development they did at almost every meeting. They went on learning-walks called "Tiger Trails," they videotaped themselves to share with others who could not be in a class to observe, and the administration was committed to providing substitute teachers or other coverage to help teachers attend professional development as needed. What became clear was how committed the administration and teachers were to their students, and how they always felt they could do better the next day.

CHAPTER V: FINDINGS, IMPLICATIONS, AND REFLECTIONS

This chapter contains a summary of the analysis and conclusions. This research was a single case study of one school to determine how implementing the PLC (DuFour et al., 2010) framework affected teachers' practices. Several themes emerged from the research. Themes related to the guiding principles were evident, as anticipated. In addition, three themes emerged that did not necessarily fit neatly within the guiding principles. I will report on the findings about my initial themes first and then answer my research questions, interweaving the themes I did not expect to find into the narrative.

The main themes, which are part of the DuFour model (1998), were reinforced by the data included the following: (a) shared mission, vision, values and goals; (b) collective inquiry; (c) collaborative teams; (d) continuous improvement; (e) action orientation/inquiry-based learning; and (f) results oriented. This school's commitment to school culture was mentioned in every interview and is addressed in the Findings section. The themes I had not anticipated were (a) the idea of "we go slow to go fast," (b) the idea of tight and loose structures, and (c) the belief that the work was never finished. I address the main themes first before moving to the additional themes that were defined after the observations and interviews.

Guiding Principles and Themes

Shared Mission, Vision, Values and Goals: Guiding Principle #1

In this theme, the administration, classroom teachers, and specialists all created collective commitments to get the work done to improve teachers' practices and student learning. Working from the philosophy that all students can learn, each member of the

school who participated in the interviews and observations was committed to doing whatever it took to help students succeed.

This was witnessed during the fourth grade-level meeting, where classroom teachers, specialists, and administrators came together to determine what they believed to be best for students. An example of this was their discussion about what they planned to assess in the next unit of study. The math specialist, Katie, suggested they review the standards for the next unit by reviewing the curriculum framework and developing the assessment to use for the pre and post assessments. Katie stated, “So I’m coming around with the questions for the assessment, and on the board are the standards. Take the question(s) you have and place them under the correct standard.” Once the team members placed the questions under the standard, they reviewed this process as a group to determine whether they all agreed that the questions were under the correct standard. At this time of the year, the team was focused on place value, which is a beginning of the year standard. They used this same process for each question they reviewed. The teachers had an opportunity to voice their thoughts about how the assessment should look, to determine how well their students understood place value. In this grade-level meeting, the creation of the preassessment on place value was the main focus for the hour they were together. At other grade-level meetings, they discussed other topics, but the format of the meeting was similar to what I witnessed in this group. When looking at how this connects to the literature, Barab et al. (2002) found that four core factors bolster the PLC process: (a) teachers develop and implement their own professional preparation, (b) teachers want to be more authentic by being in the classroom, (c) the work they do can be developed into portfolios, and (d) teachers learn through democratic ideals. What

I observed during this meeting was the development and implementation of the teachers own professional preparation, as the teachers and specialists developed the assessment. The teachers had an opportunity to learn through democratic ideals, as everyone in the meeting had a voice to express their ideas and concerns.

A major component of this theme was commitment, as illustrated by collaborative teams holding meetings weekly to plan, share strategies, progress monitor, hold data dialogues, and hold one another accountable for the work done in these meetings. When talking with the Samantha, the principal, she mentioned:

> What our goals are for the year is based on our current data, where we are, and making sure everybody's back in the same place, as well as bringing our new teachers up-to-date, by recommitting to these ideals that we have set forth.

This was how the administration developed their collective commitments and shared them with the staff. Through these collective commitments, DuFour and Eaker's guiding principal 1 was embedded in the school culture (DuFour & Eaker, 1998).

Collective Responsibility/Inquiry: Guiding Principle #2

This theme emerged from the teams working with all students at their grade level. Numerous times in the observations and during the interviews, teachers and specialists referred to the students "as all of our students." This was evident from the field notes based on the CLT protocol (see Mitchell, 2017) used when observing the collaboration among team members. The focus of these conversations was students, thereby showing teachers' professionalism during the meetings. The CLT meetings provided a vehicle for teachers to speak freely throughout their time together. The teachers also held one another accountable for their participation as well as their responsibilities to the team.

As stated by the fourth-grade teacher interviewed, “We take collective responsibility for what happens at this school to ensure high levels of learning for adults and students.” Therefore, in the work done at MidAtlantic Elementary School, the teachers, administrators, and specialists took collective responsibility for student learning. They asked themselves, “What can we put in place to help the students, and if they already have mastery of a concept, what can we give them to enrich their learning?” This finding aligns with the county document entitled, “Resource Guide for Professional Learning Communities” (Elliott et.al., 2012).

As a part of collective inquiry, the teams took time to unpack the SOL standards and determine the essential standards that must to be taught at each grade level. The teachers took the time to talk about each student by name and by need so they could meet the students at their level. By creating common assessments to determine which students understood the topic and which students were struggling, the teachers were more prepared to provide intervention or enrichment to their students. This also helped teachers know how to differentiate their instruction. Senge, Ross, Smith, Roberts, and Kleiner (1994) described this process as “the deep learning cycle . . . the essence of the learning organization” (p. 18). This also allowed team members to develop new skills and capabilities as described by DuFour et al. (2010).

Collaborative Teams: Guiding Principle #3

In collaborative teams, the members are able to speak their truth without judgment or repercussions from other members of the team. The collaborative nature of this school’s setting allowed members to take risks that they might not take otherwise. As teams created norms for their meetings, it helped to create a safer environment. All

teams decided on their own norms, such as participate and share ideas; be open-minded; be honest, considerate, and respectful; and keep the best interests of students in mind. When I observed the grade-level meetings they always began with a reminder of the team norms for the meeting. The third-grade team meeting had four norms: (a) always come prepared, (b) all voices should be heard, (c) respect each other's opinions, and (d) no sidebar conversations. This last norm referred to how the team did not believe that other teachers or specialists should be talking while someone else was speaking. The norms helped to ground the meeting before the team began other discussions. Many of the teams had similar norms, but they were worded a little differently. Teams created roles for members so the meetings ran smoothly. These roles included a facilitator, who remained neutral during the meeting; a timekeeper; a recorder, who took notes of the meeting; and a scribe, the person who charted the ideas shared by the team. The teams observed in this study put these practices in place during the meetings and made sure the specialists' voices were heard.

During the interviews, each participant used the word collaboration. The third-grade technology specialist stated, "To me, collaboration and shared ownership of the learning for students and staff is the most important part of the PLC process." Having been at a school where collaboration was not a priority, she shared, "There's no way you can meet the needs of every single learner in your classroom without collaboration." She referred to the collaborative teams as a part of the culture of the building. Lucy, the kindergarten teacher, stated, "There I am, a classroom teacher trying to meet the needs of all of my students. When I rely on other people, we're going to get better results." When discussing collaboration within team meetings, she mentioned how as a team they could

split up the lessons for a unit and only focus on one lesson, while others focused on another lesson. “You can totally devote yourself to providing the best strategies, materials, and ideas to that one lesson, and then share it with your team members, and they, in turn, share their lessons with you.” This supports the research of Lam (2005), who stated collective learning has a strong positive impact on student learning. It also reinforces the research done by Hallinger and Heck (2010), whose longitudinal study showed growth in student learning over time as a result of the collaborative leadership and teams at the schools they studied.

Continuous Improvement: Guiding Principle #4

The topic of continuous improvement was mentioned during the interviews with the administrators and teachers. Continuous improvement was happening all the time throughout the school day. Teachers talked to one another about the strategies they implemented every day. This was not a discussion that occurred only at collaborative team meetings but could occur when they visited a classroom or during a discussion in the hallway. Professional development was embedded in almost every team meeting. This was evident in the observations of the math CLT grade-level meetings. Samantha, the principal, echoed this sentiment during her interview when she stated:

> They have job-embedded professional development that will be used as soon as they go back to their classrooms. As part of the team meeting, I participated and shared my strategies of how I would solve the number talk problem using a pictorial representation.

Another part of professional development was when teachers took learning-walks called “Tiger Trails” to observe one another’s classrooms so they could learn what their

teammates were doing. This practice, though enthusiastically endorsed by the teachers, is not part of the DuFour PLC process. If they could not attend a learning walk, teachers would videotape themselves teaching a lesson and share it with other teachers. Many of the teachers mentioned this type of professional development as being instrumental in improving teacher practice. Jack, the fourth-grade teacher, stated in the interview, "We do learning-walks, where teachers can sign-up to go around to different classrooms to view what's going on in those classrooms."

Embedded professional development within schools has been described by other researchers. McLaughlin and Talbert (2006) stated there are three functions of successful staff development: (a) building and managing knowledge; (b) creating a shared language and practice for student outcomes; and (c) sustaining certain aspects, such as consistent norms and instructional practices. Barab et al. (2002) advocated for the idea of teacher learning in grade-level meetings. The factors they found included professionally prepared teachers who were more authentic in their classrooms, teachers using best practices, and teachers learning through democratic ideals, such as sharing ideas and strategies. These findings support the research done by Barab et al. (2002) and McLaughlin and Talbert (2006) mentioned previously in this paragraph.

Action Orientation/Inquiry-Based Learning: Guiding Principle #5

The teachers often found that this principle was somewhat abstract, making it difficult to turn aspirations into action, a phenomenon cited by DuFour et al. (2010). This was where teachers provided various opportunities for students to learn and used many different types of assessments to determine what students knew or needed to know. An example is a "plan, do, act" cycle. Teachers took the time to analyze both pre and post

assessments and dug deeper into the questions asked on an assessment. During the fourth-grade team meeting, the teachers were asked to develop a preassessment for the next unit of study. The math specialist had the teachers take the questions they were provided and place them under what they believed was the appropriate standard. Alice, the math specialist, stated, “So what is coming around are three different chunks of questions since we are reviewing three standards. Please come up when you are ready and place your questions under that standard you believe fits your question.” After the teachers placed the questions under what they believed was the appropriate standard, an inquiry-based discussion was held, and teachers were asked whether everyone agreed with where the questions were placed. Once everyone agreed that the questions fell under the appropriate standard, the math specialist took those questions and created the assessment.

The next process in the team meeting included reviewing a post assessment that students had previously taken. As the classroom teachers and specialists came together to analyze these assessments, they incorporated multi-tiered systems of support to look at student success. This could include looking more in-depth at Tier 1 instruction or core instruction; Tier 2 instruction, which looks at strategic interventions such as Leveled Language Instruction (LLI); and finally looking at Tier 3 instruction, which is more intensive instruction, such as Corrective Reading and Transmath. This is where reviewing student work and holding data dialogues made the most sense.

During the progress monitoring and data dialogue with the second-grade team, the teachers and reading specialist reviewed the data from the DRA, iReady Universal Screener, and the WIDA test scores to determine next steps for their second-grade

students. The goals were to develop guided reading groups, and decide which students needed intervention and which students needed language groups. Once the teachers and specialist reviewed the data, the information was transferred into their progress monitoring data sheet (see Appendix H). This tool helped teachers look at students longitudinally over a 3-year period. Anastasia, the reading specialist, stated, "Guided reading and the support groups that happen during the week is where we get the most bang for our buck. We need to be purposeful when we make our groups." Because the data showed students were struggling with recognizing letters and their sounds, the teachers implemented a program called "Fundations," a phonics and phonemic awareness program that is used in this county to provide support to struggling students.

The principal mentioned that the teachers in the grade-level meetings had "decisional capital," referring to the fact that the teachers made decisions about what was best for students. Collective efficacy came into play when this occurred. Teachers worked closely together to benefit students and used their professional capital to make decisions based on the data they reviewed. Through this process, teachers modified what students needed, and the modifications helped them teach their students.

Results-Oriented: Guiding Principle #6

This guiding principle is probably one of the most important pieces of what is being done at this school. Jack, who taught fourth grade, said "We focus on results. We do this through learning-walks (tiger trails), where teachers sign-up to visit one another's classrooms, we have job-embedded professional development, and we have classroom observations." He mentioned that after-school professional development helped improve

teachers' practices. The kindergarten teacher, Lucy, mentioned the "tiger trails" as well, stating:

> We have these walks around the building to see what is happening in other teachers' classrooms. Our administration believes in the process of the tiger walks and will help us by finding coverage for our classes, while we visit other teachers.

According to Senge et al. (1994), "the rationale for any strategy for building a learning organization revolves around the premise that such organizations will produce dramatically improved results" (p. 44). This leads to the development of and measurable improvement in goals (DuFour et al., 2010). This practice reinforces instructional rigor, which is part of the teaching being done; in their PLC (DuFour et al., 2010) process, teachers give feedback to colleagues as they review student work, reflect on next steps, and celebrate successes. The next section contains a discussion of the three themes that are not a part of the DuFour model of a PLC. In the next section, I also answer the research questions set forth in previous chapters.

Findings

The goal in this section is to answer the research questions that were set forth from the beginning of the writing. This qualitative study involved interviews with administrators and teachers, observations of CLT meetings, document analysis (Merriam, 1998, p. 122), and reflexive journal (Gerstl-Pepin & Patrizio, 2009; Rowling, 2000) entries to learn from them how implementing the PLC framework affected teachers' practices. The findings include the unanticipated themes that emerged from answering

the research questions. The findings show there was a positive impact on teachers' practices. The following were the research questions:

1. To what degree does this school implement MidAtlantic School District's PLC model?
2. How does the PLC shape teacher practice?
3. What role do school leaders have in facilitating the successful PLC process in this school?

Research Question 1: To What Degree Does This School Implement MidAtlantic School District's PLC Model?

MidAtlantic Elementary School fully implements the district's PLC (DuFour et al., 2010) model. The district's publication, "A Resource Guide for Professional Learning Communities" (RGPLC; Elliott et al., 2012), is a guide used within the district to help schools implement a PLC (DuFour et al., 2010) framework. Its purpose is to ensure schools within the district are following similar procedures and protocols when conducting their grade-level meetings. Many schools have used this guide to create their own living document, which replicates many of the procedures and guidelines described within the RGPLC document. The document is a compilation of research-based concepts, strategies, and protocols shared by consultants and used by instructional coaches within the district. It is also used to support data dialogues, working conditions surveys, and best practices.

Well prior to the publication of the RGPLC document, the first principal of this school met with Richard and Rebecca DuFour in 2012. This was prior to the opening of the school and led to him making the decision to implement the DuFour PLC model

(DuFour et al., 2010) from the beginning. The school adopted the *Learning by Doing* (DuFour et al., 2010) philosophy and has continued this philosophy long after the first principal retired. They incorporated the guiding principles developed in this model and focused on the idea that all students can learn. The administration grounded the staff at the beginning of each school year by sharing their collective commitments with the staff. Samantha, the principal, mentioned, "We always go back to the *Learning by Doing* (DuFour et al., 2010) as part of our summer reading to prepare for the upcoming school year." She said, "We're always going back to where we ended the year before and saying okay, now we're going to restart this year by collaborating and working together." The staff then created their own collective commitments to the administration. Newmann and Wehlage (1995) shared that such collective responsibility helps to sustain commitment and puts peer pressure and accountability on all staff members in order to share the work and ease isolation. As a part of the culture at this school, the focus is on the four critical questions about student learning.

Culture. Culture was one of the of the findings that resonated throughout the interviews with administrators and teachers alike. The assistant principal mentioned culture five times and the principal mentioned it 10 times and stressed the importance of the culture within the building. One of the main ideas of the school's culture was the "collective commitments" to the staff. Both administrators referred to the collective commitments throughout their interviews. What they were referring to was the commitments they made to their staff at the beginning of each school year. Through these commitments they held themselves accountable to the staff.

One way this commitment was demonstrated was by starting the school year with a grounding in the PLC (DuFour et al., 2010) philosophy. The whole staff was re-immersed in this philosophy at the beginning of each new school year. Teachers who had been there since the school opened also participated in this training. The principal stated, "Being a professional learning community is how we function. Culture is always the first thing before the structures." Both administrators spoke of making sure that they "model collaboration amongst themselves." As a part of this collaborative learning team, they created norms, just as the grade-level teams did. They also spoke about transparency with the staff. One way they did this was by sharing a weekly newsletter with everyone in the building. When an e-mail was sent to the staff, all the administrators signed the e-mail. They also implemented a guided coalition that helped to develop new ideas for continuous improvement within the building to be shared with the staff.

During the interviews with teachers, much of what was said by the administrative team was reiterated in their responses. Jack, the fourth-grade teacher, said that the culture for him was the "right fit." In previous schools, he did not feel as though he was a part of anything. When he arrived at MidAtlantic Elementary School, that all changed: "It is a completely different way of being, here at MidAtlantic. Everything we do is for the students." Norma, the advanced academics teacher, said:

> The culture here is how we respond to our students. We use the four critical questions to guide our work. For me, it's important that we have the right people at the table, such as the classroom teachers, specialists, and administrators, making sure we do what's best for kids.

Lisa, the third-grade technology specialist, stated:

So, it's the culture we've created where we all come together at the beginning of the school year, and for old and new members of our school we get grounded in the philosophy of the work that we believe in as a staff.

Going slow to go fast. The first unanticipated finding fit within the PLC (DuFour et al., 2010) framework and was fully implemented at this school. This theme was the idea of "we go slow to go fast." This meant there was a great deal of planning prior to creating this new philosophy at this school. The previous principal was a huge proponent of the DuFours' work and felt strongly that this was the way he wanted to proceed when he began his journey at MidAtlantic Elementary School. Elmore (2006) referred to the idea of "reciprocal accountability," meaning that for every piece of performance demanded, there is an equal responsibility to give what is needed to meet that expectation. Bill, the assistant principal, stated, "I think it's this idea of going slow to go fast, where we took time before we opened the school to really think through what we were wanting to commit to as a new school." Now, at the beginning of each school year, the administration grounded the staff in the DuFour Model (1998) and looked at their annual plans. The administration defined goals for the school year, and the expectation was that the entire staff would be involved in executing that goal. This goes along with the collective commitments that the administration provided to the staff. The administration had to plan all aspects of this philosophy out carefully before presenting this to the staff to get buy-in.

Research Question 2: How Does the PLC Shape Teacher Practice?

The PLC framework played an important part in shaping teachers' practices. The teachers were collectively responsible for all students, which required them to collaborate

in their grade-level meetings. In these meetings they planned out units of study as they unpacked the standards, determined essential vocabulary, and developed a shared understanding of the various concepts being taught. They also developed common assessments as a part of their collective inquiry process. From these common assessments, they could determine what interventions needed to be put in place to improve student learning or enrichment activities that needed to be created to extend student learning.

One way this was done was through job-embedded professional development. Teachers practiced instructional strategies shared by specialists or other teachers. As they learned about new programs that were available to them, such as "Fundations," a phonics-based program, they applied the program to help students learn their letters and sounds of letters. First-grade and second-grade teams discussed how their students could use this program in their classrooms to help students who were struggling with letter and sound connections. All of the team members have been trained to use this program, and they believed this program helped their struggling readers.

An example in math was learning to use a "number talk" to help children share different ways to solve a problem and explain their thinking. The teachers in third grade, along with the specialists and administrators, participated in a number talk. Gesell, the instructional coach, stated, "So, we're going to do a number talk so that we can talk about strategies and representations." The number talk was used to help develop number sense with the third-grade students. When I spoke to Samantha, the principal, she mentioned her participation in the number talk and said, "I know that those third-grade teachers went back to the classroom this afternoon and used that strategy with their students." The

fourth-grade team developed a pre and post assessment on place value to determine what their students knew before teaching the unit of study. Each of these grounding activities prepared the teachers to take what they learned in the grade-level meeting back to their classroom that day. The fifth-grade team reviewed an assessment their students took on prime and composite numbers. What was interesting to hear during this meeting was the fact that the teachers noticed some classes did better on certain questions than others. Harriet, one of the classroom teachers, asked her teammate, “What did you do to help your students understand the question about prime and composite numbers?” Joe responded, “I used a number sentence to help my language learners, which helped them make sense of the difference between prime and composite numbers.” One of the other teachers mentioned that she used sorting cards to help students know the difference. The other fifth-grade teacher said he used a rap using a song from the Hamilton play. All of these strategies helped students be successful. These were just a few of the examples of how teachers improved their practice. They were constantly participating in job-embedded professional development. This reinforced Schmoker’s (2005) finding that teachers learn best from other teachers in settings where they literally teach each other the art of teaching. This occurred at any point in the day or during the week. There was a great deal of professional development being done throughout the school.

Tight and loose structures. Tight and loose structures were the second unanticipated theme that emerged from the interviews with administrators and teachers. Tight and loose structures in schools are practices within the organization where certain expectations have been established, yet there is flexibility in how those expectations are accomplished. These structures helped to improve teachers’ practices. The idea of tight

and loose structures was mentioned by almost all of the interviewees. Samantha, the principal, referred to "tight and loose" when she spoke about team structures. Just as the administrative team held themselves to tight and loose structures, the teams needed to do the same. An example of tight structures was team norms, but what was loose was the types of norms for teams. This was shared by Lisa, the SBTS, when she said, "The teams come up with their own norms and come up with the protocols if someone is breaking the norm." They developed what worked best for them. Another structure that was tight was team meetings, which were held weekly, but what was loose was the structure of the team meetings. Each team discussed topics that met their needs. Susan, the reading specialist, made this clear to me when she said, "We have planning meetings every week, and the administration is tight on the fact that grade-level teams will meet twice a week, but what is loose is the agenda items that each team will discuss." She also mentioned how the administration was tight on developing a schedule that allowed for common planning time, but the collaborative nature of the meeting was loose, showing how teams built relationships with one another, and they knew what worked best for them. Another structure that was tight was how teams held data dialogues and used a protocol for that data dialogue. All teams used the same data dialogue structure, but what was loose was how they reviewed the data. Progress monitoring meetings were tight, but the way each team worked within that meeting was loose. Every student was discussed by name and by need, but how teams grouped the students was loose, because the students needed different structures. Norma, the AAP teacher, stated, "We're tight on, we are a professional learning community as we follow the four driving questions, but what our meetings look like or instructional practices that are discussed, teachers have a lot of say

in this piece." Instructionally, teachers must teach essential standards, but Lisa, the SBTS, said, "Even though it is tight about the essential standards that need to be taught, the teachers have a choice and voice on how the standard will be taught." Each of the teachers discussed these same structures in the interviews.

Research Question 3: What Role do the School Leaders Have in Facilitating the Successful PLC Process in this School?

The school leaders took time at the beginning of each school year to ground the staff in the philosophy of the PLC (DuFour et al., 2010) framework. They created collective commitments as an administrative team to let their staff know that they promoted and protected the vision, mission, goals, and values of the school. They built shared knowledge through collaborative teams and various structures. They promised to support the collaborative teams by providing sufficient time to meet, ongoing feedback, clear direction for their work, and funding trainings that were necessary to improve teachers' practices. These findings align with Hipp et al.'s (2008) research describing that re-culturing schools as a PLC requires a collaborative learning environment to increase student learning. The administrative team provided resources to ensure teams had a deep understanding of the essential standards in academics and behaviors. They also created opportunities for leadership within the school and celebrated successes when the intended results were achieved. The leaders within this school promoted equity for all students by ensuring the teams provided access to the same knowledge and skills and had students' work assessed using the same criteria regardless of which teacher was assigned to the students.

By building shared knowledge, common language, and participating in collective inquiry, the administration attempted to resolve important questions raised in team meetings. The leaders provided job-embedded professional development where teachers worked together to meet the needs of all their students. They allowed teachers to learn collectively, focusing on issues that had the most powerful impact on teaching and learning. As far as continuing to develop the culture at MidAtlantic Elementary School, the administration continued to hire professionals who were committed to the learning of all students and would be positive contributing members to their team.

We never arrive. "We never arrive" was the most interesting unexpected finding noted by each administrator and teacher during the interviews. It demonstrated how the leadership in this building played a very important role in developing this type of mindset. Teachers and staff were continuously growing and changing each day, week, and year. Samantha, the principal, mentioned "teachers are learning from one another every day." Norma, the advanced academics teachers, shared, "We have a common language across the school, and that is our goal, to always find ways to improve our instruction." Lisa, the third-grade teacher/SBTS, responded by saying, "We believe that we can always improve, and we all have the same beliefs and values." Lucy, the kindergarten teacher, stated, "There is always continuous work that needs to be done, so we never feel that we've truly arrived. We're always trying to get there, but we do it because we believe in our vision and mission."

Summary

The school used in this study is an example of how implementing the PLC (DuFour et al., 2010) framework can make a positive difference in teacher practice and

lead to improvements in student learning. As they followed the guiding principles set forth by the DuFours (i.e., a shared vision and mission, values, and goals; collective inquiry; collaborative teams; continuous improvement; action orientation/inquiry-based learning; being results oriented), the administrators, teachers, and specialists influenced teachers' practices and the outcomes for students at MidAtlantic Elementary School.

Implications for Future Research

The purpose of this single case study was to examine how the PLC (DuFour et al., 2010) framework affected teachers' practices to improve student learning in one elementary school. Examining the findings from this study points the way for additional questions related to the PLC framework in other settings.

Question #1. How might principals at elementary, middle, and high schools implement "learning walks" in their schools to improve teacher practice? Through my interviews with various teachers at MidAtlantic Elementary School, I learned the "learning walks" were important for teachers to learn more about how to implement various instructional strategies and develop job-embedded professional development. In grade-level meetings, teachers planned for classroom visits and shared what was observed.

Question #2. How does teacher efficacy affect the PLC (DuFour et al., 2010) process at middle and high schools? Are teachers at these levels buying-in to the PLC (DuFour et al., 2010) process with fidelity? How is it different from the elementary school PLC (DuFour et al., 2010) process? These questions arose from the principal's comment regarding teacher efficacy at MidAtlantic Elementary School. She stated, "Teachers also have decisional capital, because they are given the opportunities to decide

what their teams need." This goes to collective efficacy where teachers are not alone but work closely together.

Question #3. How effective are tight and loose structures at the middle and high school levels? The school I researched provided numerous of tight and loose structures, such as grade-level meetings where norms were expected, but each grade-level could create their own norms. Data dialogues were tight, but how the data were reviewed was loose. This meant teams could discuss their data in a way that fit their teams' needs.

Implications for Practice

Based on the findings within this research of the DuFour et al. (2010) PLC model, the following are recommendations for school systems and future administrators.

Recommendation #1. District personnel and school administrators who would like their staff to implement and participate in the DuFour et al. (2010) professional learning model should engage in the professional development themselves and visit DuFour sites so they have a clear understanding of what is required to make this successful. From my research, I learned that the administrators at MidAtlantic Elementary School participated in professional development at the beginning of each year to re-immerse themselves in the DuFour PLC model philosophy. This created a more positive environment in the school. They were open to observations from colleagues within their district.

Recommendation #2. School administrators who wish to apply the PLC (DuFour et al., 2010) framework within their schools must be willing to develop collective commitments to their staff and be willing to accept a culture of collective commitments from their staff so the framework is effective. As a part of the professional development

at the beginning of each school year, the administration and teachers at MidAtlantic Elementary School developed collective commitments to one another so they were able to improve their practice to affect student learning.

Recommendation #3. District personnel who want to have their schools engaged in the PLC (DuFour et al., 2010) framework need to be willing to provide funding and time for professional development for their administrators and teachers. After interviewing the principal at MidAtlantic Elementary School, she made it very clear that if funding was required to provide professional development, she and the administrative staff were willing to provide whatever funding was needed for trainings.

Recommendation #4. School leaders need to provide time for teachers to have common planning time and allow teachers time to build the positive relationships needed on teams to collaborate effectively. It was quite evident how important common planning time was for teachers. This gave teachers at MidAtlantic Elementary School an opportunity to share instructional strategies, talk about data, and participate in job-embedded professional development.

Recommendation #5. Principals must find ways to build capacity on teams so teachers can teach one another through observations in various environments. As I observed various teams, I could see how the instructional coach and specialists at MidAtlantic Elementary School provided opportunities for the staff to learn from one another and build capacity within teams.

Recommendation #6. School administrators who wish to implement the PLC (DuFour et al., 2010) framework within their schools must be willing to eliminate barriers and provide the resources schools need, such as time required for trainings,

structures, and a designated meeting room, to change the process that currently exists at their school. All observations occurred in one of two rooms for the grade-level meetings. The teachers at MidAtlantic Elementary School knew exactly where they would be meeting, what resources they needed to bring with them, and what resources would be provided to them during their meetings.

Recommendation #7. School administrators should be a part of the grade-level meetings to show teams they are vested in the process and not just paying lip service to the process. This is where the collective commitments to the staff were beneficial. The importance of collective responsibility made a powerful statement to the teachers at MidAtlantic Elementary School, because the administrative staff attended every grade-level meeting and participated in the job-embedded professional development.

Reflections

This dissertation challenged me in ways that are difficult to describe, but I believe it is important for others to read about them before embarking on this journey. Writing this dissertation took me down many unexpected paths before getting to my final destination. What I learned from my research was how the processes I observed or learned about through interviews reinforced many of my own experiences as a member of a professional learning community. Developing norms for meetings, making sure we had agendas to keep us organized, unpacking standards, data dialogues, and progress monitoring were a part of the process I experienced. However, I learned that at MidAtlantic Elementary School, the process can be more organic in nature. This contradicts the stringent manner of the grade-level meetings I have experienced in my career. These meetings were developed with specific timelines to discuss various topics

or data during the meeting time. The organic nature of the meetings at MidAtlantic Elementary School helped to drive the meetings. Being more organic helped meet the needs of the participants of the meeting, such as learning numerous instructional strategies, participating in job-embedded professional development, and data discussions, which improved their practice. This made a difference in affecting student learning.

Another piece I found interesting was how much culture plays an important role at this school. Everyone I interviewed stated that "our culture in this building is a way of being." I understand the importance of culture in any organization, but it is not usually discussed to the level it was at MidAtlantic Elementary School. The next section of this reflection focuses on my personal journey.

When I began writing my dissertation, I had all intentions of finishing within a 3-year period. Unfortunately, that did not occur. What did occur was how I developed relationships with people I never expected to meet and reconnected with professors who helped me get to my final destination. My first inclination that I might be in over my head was my first statistics class. I felt that after taking the statistics class, writing a dissertation was not for me, but I completed the course and ventured onto the next course. I still felt I was not cut out for this process, but I learned I was mistaken. With the amazing support I received from my professors and colleagues, I managed to complete the coursework. As they say, "it takes a village." I never realized the power of that statement until I attempted to complete this work. Once the coursework was done, the real work began.

I knew from the beginning what I wanted to research, and I never wavered from that course. What I did not expect were the number of directions I would take throughout

this process. I believe I went down 10 different paths, or rabbit holes as we lovingly called them, before finally settling on PLCs and their impact on teacher practice. While going down these paths, thoughts of "giving up" loomed constantly in my mind. Being the persistent creature that I am, I kept moving forward with encouragement from my colleagues and professors.

After completing my first exam, I began to feel somewhat successful. I had the opportunity to work with two wonderful professors who kept me moving forward, as well as an outside advisor who was extremely encouraging and helpful. She and I would meet periodically to review the work I was doing. She kept me moving forward through patience and kindness. The two professors I worked with were wonderful. They continued to restore my faith in myself, but my husband was my true rock. He would not let me give up, because he understood how much this meant to me. They all seemed to understand I was not going to withdraw from this learning experience. Thank goodness for all of them.

I also learned that writing a dissertation is nothing like writing a "normal" research report. What I did not realize was that you must go through numerous processes before you begin to sit and write your initial chapter, which is the literature review. I was under the impression that I could just begin writing, not realizing I needed to go through every article, periodical, or book I read in a systematic way. This was probably the most frustrating piece for me. Once I did that, my writing began to fall into place, and I was beginning to make more sense of my topic. I remember our professors saying, "When you are through with this process, you will be an expert." Somehow, I doubted these words, but after completing this writing I now feel as though I am an expert in the PLC

framework. It has been an exhausting undertaking, but one of the most rewarding experiences I have ever completed. I believe I have learned more about myself as an educator as well. I know that when I put my mind to something, I will accomplish what I set out to do.

REFERENCES

Andrews, D., & Lewis, M. (2007). Transforming practice from within: The power of the professional learning community. In L. Stoll, & K. S. Louis (Eds.), *Professional learning communities: Divergence, depth and dilemmas* (pp. 132–148). Maidenhead, UK: Open University Press.

Avalos, B. (2011). Teacher professional development in teaching and teacher education over ten years. *Teacher and Teacher Education, 27*(1), 10–20. https://doi.org/10.1016/j.tate.2010.08.007

Barab, S. A., Barnett, M., & Squire, K. (2002). Developing an empirical account of a community of practice: Characterizing the essential tensions. *Journal of the Learning Sciences, 11*(4), 489–542. https://doi.org/10.1207/s15327809jls1104_3

Bausmith, J. M., & Barry, C. (2011). Revisiting professional learning communities to increase college readiness: The importance of pedagogical content knowledge. E*ducational Researcher, 40*(4), 175–178. https://doi.org/10.3102/0013189X11409927

Blankenship, S. S., & Ruona, W. E. A. (2007, February 28-March 4). *Professional learning communities and communities of practice: A comparison of models, literature review*. Online submission. Paper presented at the Academy of Human Resources Development, Intentional Research Conference in the Americas, Indianapolis, IN.

Blacklock, P. J. (2009). *The five dimensions of professional learning communities in improving exemplar Texas elementary schools: A descriptive study* (Unpublished doctoral dissertation). University of North Texas, Denton, TX.

Bolam, R. (1977). Innovation and the problem-solving school. In E. King (Ed.), *Reorganising education: Management and participation for change*. London, England: Sage Publications.

Borko, H. (2004). Professional development and teacher learning: Mapping the terrain. *Educational Researcher, 33*(8), 3–15. https://doi.org/10.3102/0013189x033008003

Bryk, A., Camburn, E., & Louis, K. S. (1999). Professional community in Chicago elementary schools: Facilitating factors and organizational consequences. *Educational Administration Quarterly, 35*, 751–781. https://doi.org/10.1177/0013161992196881

Carter, B. (2008). *The impact of a professional learning community on student achievement* (Doctoral dissertation). Available from ProQuest Dissertations & Theses database. (3336713)

Centre for Educational Research and Innovation. (1978). *Creativity of the school: Final report*. Paris, France: Organisation for Economic Co-operation and Development.

Copland, M. A. (2003). Leadership of inquiry: Building and sustaining capacity for school improvement. *Educational Evaluation and Policy Analysis, 25*(4), 375–395. https://doi.org/10.3102/01623737025004375

Creswell, J. W. (2007). *Qualitative inquiry & research design: Choosing among five approaches*. Thousand Oaks, CA: Sage Publications.

Darling-Hammond, L., Chung Wei, R., Alethea, A., Richardson, N., & Orphanos, S. (2009). *Professional learning in the learning profession: A status report on*

teacher development in the United States and abroad. Stanford, CA: National Staff Development Council and The School Redesign Network.

Delehant, A. (2007). *Making meetings work*. Thousand Oaks, CA: Corwin Press.

De Neve, D., Devos, G., & Tuytens, M. (2015). The importance of job resources and self-efficacy for beginning teachers' professional learning in differentiated instruction. *Teaching and Teacher Education, 47*, 30–41. https://doi.org/10.1016/j.tate.2014.12.003

Dooner, A. M., Mandzuk, D., & Clifton, R. A. (2008). Stages of collaboration and the realities of professional learning communities. *Teaching and Teacher Education, 24*, 564–574. https://doi.org/10.1016/j.tate.2007.09.009

Drago-Severson, E. (2012). *Helping educators grow*. Cambridge, MA: Harvard Education Press.

DuFour, R., DuFour, R., & Eaker, R. (2006). *Learning by doing*. Bloomington, IN: Solution Tree.

DuFour, R., DuFour, R., & Eaker, R. (2008). *Revisiting professional learning communities at work*. Bloomington, IN: Solution Tree.

DuFour, R., DuFour, R., Eaker, R., & Many, T. (2010). *Learning by doing* (2nd ed.). Bloomington, IN: Solution Tree.

DuFour, R., & Eaker, R. (1998). *Professional learning communities at work: Best practices for enhancing student achievement*. Bloomington, IN: Solution Tree.

DuFour, R., Eaker, R., & DuFour, R. (2005). *On common ground: The power of professional learning communities*. Bloomington, IN: National Education Service.

Elliott, L., Iannuzzi-Forgy, R., King, S., Lane, T., Lis, M., Miller, A., . . . Seymour, K. (2012). *Resource guide for professional learning communities*. Fairfax, VA: Fairfax County Public Schools.

Elmore, R. (2006). *School reform from the inside out: Policy, practice, and performance*. Boston, MA: Harvard Educational Press.

Englert, C. S., & Tarrant, K. L. (1995). Creating collaborative cultures for educational change. *Remedial and Special Education, 16*(6), 325–336, 353. https://doi.org/10.1177/074193259501600602

Fullan, M. (2004). *Leadership and sustainability: System thinkers in action*. Thousand Oaks, CA: Corwin Press.

Galluci, C. (2008). Districtwide instructional reform: Using sociocultural theory to link professional learning to organizational support. *American Journal of Education, 114*(4), 541–581. https://doi.org/10.1086/589314

Garmston, R., & Wellman, B. (2009). *The adaptive school: A sourcebook for collaborative groups* (2nd ed.). Norwood, MA: Christopher Gordon.

Garvin, D. A., Edmondson, A. C., & Gino, F. (2008). Is yours a learning organization? *Harvard Business Review, 86*(3), 109–116.

Gerstl-Pepin, C., & Patrizio, K. (2009). Learning from Dumbledore's pensieve: Metaphor as an aid in teaching reflexivity in qualitative research. *Qualitative Research, 9*(3), 299–308. https://doi.org/10.1177/1468794109105029

Giles, C., & Hargreaves, A. (2006). The sustainability of innovative schools as learning organizations and professional learning communities during standardized reform.

Educational Administration Quarterly, 42, 124–156. https://doi.org/10.1177/0013161x05278189

Goddard, Y. L., Goddard, R. D., & Tschannen-Moran, M. (2007). A theoretical and empirical investigation of teacher collaboration for school improvement and student achievement in public elementary schools. *Teachers College Record, 109*(4), 877–896. http://www.tcrecord.org

Hallinger, P., & Heck, R. H. (2010). Leadership for learning: Does collaborative leadership make a difference in school improvement? *Educational Management Administration & Leadership, 38*(6), 654–678. https://doi.org/10.1177/1741143210379060

Harrison, J., MacGibbon, L., & Morton, M. (2001). Regimes of trustworthiness in qualitative research: The rigors of reciprocity. *Qualitative Inquiry, 7*(3), 323–345. https://doi.org/10.1177/107780040100700305

Hedberg, B., Nystrom, P., & Starbuck, W. H. (1976). Camping on seesaws: Prescriptions for a self-designing organization. *Administrative Science Quarterly, 21*, 41–65. https://doi.org/10.2307/2391877

Higgins, M., Ishimara, H., Holcombe, R., & Fowler, A. (2012) Examining organizational learning in schools: The role of psychological safety, experimentation, and leadership that reinforces learning. *Journal of Educational Change, 13*(1), 67–94. https://doi.org/10.1007/s10833-011-9167-9

Hill, M. F., & Haigh, M. A. (2012). Creating a culture of research in teacher education: Learning research within communities of practice. *Studies of Higher Education 37*(8), 971–988. https://doi.org/10.1080/03075079.2011.559222

Hipp, K. H., Huffman, J. B., Pankake, A. M., & Olivier, D. F. (2008). Sustaining professional learning communities: Case studies. *Journal of Educational Change, 9*, 173–195. https://doi.org/10.1007/s10833-007-9060-8

Honig, M. I. (2008). District central offices as learning organizations: How sociocultural and organizational learning theories elaborate district central office administrators' participation in teaching and learning improvement efforts. *American Journal of Education, 114*(4), 627–664. https://doi.org/10.1086/589317

Hord, S. (1997). *Professional learning communities: Communities of continuous inquiry and improvement*. Austin, TX: Southwest Educational Development Lab.

Hord, S. (2004). Professional learning communities: An overview. In S. Hord (Ed.), *Learning together, leading together: Changing schools through professional learning communities* (pp. 5–14). New York, NY: Teachers College Press.

Imants, J. (2003). Two basic mechanisms for organizational learning in schools. *European Journal of Teacher Education, 26*(3), 293–311. https://doi.org/10.1080/0261976032000128157a

Johnson, B., & Christensen, L. (2012). *Educational research: Quantitative, qualitative and mixed approaches*. Los Angeles, CA: Sage.

Johnson, D. R. (2011). *A quantitative study of teacher perceptions of professional learning communities' context, process and content* (Doctoral dissertation). Avaialble from ProQuest Dissertations & Theses database. (3472692)

Joyce, B., & Showers, B. (2002). *Student achievement through staff development*. Retrieved from https://www.nationalcollege.org.uk/cm-mc-ssl-resource-joyceshowers.pdf

King, M. B., & Newmann, F. M. (2001). Building school capacity through professional development: Conceptual and empirical considerations. *International Journal of Educational Management, 15*(2), 86–94. https://doi.org/10.1108/09513540110383818

Kruse, S. D., Louis, K. S., & Bryk, A. S. (1995). An emerging framework of analyzing school-based professional learning community. In K. S. Louis, & S. D. Kruse (Eds.), *Professionalism and community: Perspectives on reforming urban schools* (pp. 23–44). Thousand Oaks, CA: Corwin Press.

Lam, Y. M. J. (2005). School organizational structures: Effects on teacher and student learning. *Journal of Educational Administration, 43*(4), 387–401. https://doi.org/10.1108/09578230510605432

Leithwood, K., Leonard, L., & Sharratt, L. (1998). Conditions fostering organizational learning in schools. *Educational Administration Quarterly, 34*(2), 243–276. https://doi.org/10.1177/0013161x98034002005

Leithwood, K., & Louis, K. S. (Eds.). (1998). *Organizational learning in schools*. Lisse, Netherlands: Swets and Zeitlinger.

Lincoln, Y., & Guba, E. (1985). *Naturalistic inquiry*. Beverly Hills, CA: Sage.

Lomos, C. (2012). *Professional community and student achievement*. Retrieved from the University of Groningen UMCG research database.

Lomos, C., Hofman, R. H., & Bosker, R. J. (2011). Professional communities and student achievement: A meta-analysis. *School Effectiveness and School Improvement: An International Journal of Research, Policy and Practice, 22*(2), 121–148. https://doi.org/10.1080/09243453.2010.550467

Louis, K. S., & Kruse, D. (1995). *Professionalism and community: Perspectives on reforming schools*. Thousand Oaks, CA: Corwin Press.

Louis, K. S., & Marks, H. M. (1998). Does professional community affect the classroom? Teachers work and student experiences in restructuring schools. *American Journal of Education, 106*, 532–575. https://doi.org/10.1086/444197

Louis, K. S., Marks, H. M., & Kruse, S. (1996). Teachers' professional community in restructuring schools. *American Educational Research Journal, 33*(4), 757–798. https://doi.org/10.3102/00028312033004757

Marks, H. M., & Louis, K. S. (1999). Teacher empowerment and the capacity for organizational learning. *Education Administration Quarterly, 35*, 707–750. https://doi.org/10.1177/00131619921968806

Maxwell, J. (1996). *Qualitative research design: An interactive approach*. Thousand Oaks, CA: Sage Publications.

McLaughlin, M. W., & Talbert, J. E. (2006). *Building school-based teacher learning communities*. New York, NY: Teachers College Press.

McMahon, A., Bolam, R., Abbott, R., & Holly, P. (1984). *Guidelines for review and internal development in schools (primary and secondary school handbooks)*. York: Longman/Schools Council.

Merriam, S. B. (1998). *Qualitative research and case study applications in education: Revised and expanded from case study research in education*. San Francisco, CA: Sage.

Mitchell, C. M. (2017). *Protocol-structured discussions to improve teaching and interdisciplinary learning: A school's journey to school reform* (Unpublished

doctoral dissertation). Virginia Polytechnic Institute and State University, Falls Church, VA. Retrieved from https://vtechworks.lib.vt.edu/bitstream/handle/10919/76748/Mitchell_CM_T_2017.pdf?sequence=2

National Commission on Excellence in Education. (1983). *A nation at risk: The imperative for educational reform*. Washington, DC: U.S. Department of Education.

National Governors Association. (2010). *Reaching higher: The Common Core State Standards validation committee*. Washington, DC: Author.

National Staff Development Council. (2001). *Standards for staff development*. Oxford, OH: Author.

Newmann, F. M., & Wehlage, G. G. (1995). *Successful school restructuring: A report to the public and educators by the Center on Organization and Restructuring of Schools*. Madison, WI: CORS.

No Child Left Behind Act of 2001, Pub. I. No.107-110, 115Stat. 1425. (2002).

Organisation for Economic Co-operation and Development. (2005). *Teachers matter: Attracting, developing and retaining effective teachers*. Paris, France: OECD Publishing.

Patton, M. Q. (2002). *Qualitative research & evaluation methods*. Thousand Oaks, CA: Sage Publications.

Ramful, S. (2017). *The support of the school leadership in the development of a professional learning community: A study in Mauritian secondary schools* (Doctoral thesis). doi:10.13097/archive-ouverte/unige:102587

Ravitch, D. (2001). *Left back: A century of battles over school reform*. New York, NY: Touchstone.

Roberts, M. L. (2010). *Improving student achievement through professional learning communities* (Doctoral dissertation). Available from ProQuest Dissertations & Theses database. (3427792)

Rosenholtz, S. (1989). *Teacher's workplace: The social organization of schools*. New York, NY: Teachers College Press.

Rossman, G. B., & Wilson, B. L. (1985). Numbers and words: Combining quantitative and qualitative methods in a single large-scale evaluation study. *Evaluation Review, 9*, 627–643. https://doi.org/10.1177/0193841x8500900505

Rowling, J. K. (2000). *Harry Potter and the goblet of fire*. New York, NY: Scholastic Press.

Scribner, J., Cockrell, K. S., Cockrell, D., & Valentine, J. (1999). Creating professional communities in schools through organizational learning: An evaluation of a school improvement process. *Educational Administration Quarterly, 35*, 130–160. https://doi.org/10.1177/0013161X99351007

Schmoker, M. (2005). No turning back: The ironclad case for professional learning communities. In R. DuFour, & R. DuFour (Eds.), *On common ground: The power of professional learning communities* (pp. 135–154). Bloomington, IN: National Educational Service.

Senge, P. M., Camron-McCabe, N., Dutton, J., Kleiner, A., Lucas, T., & Smith, B. (2000). *Schools that learn: A fifth disciple fieldbook for educators, parents and everyone who cares about education*. New York, NY: Currency/Doubleday.

Senge, P., Ross, R., Smith, B., Roberts, C., & Kleiner, A. (1994). *The fifth discipline fieldbook: Strategies and tools for building a learning organization*. New York, NY: Doubleday.

Snyder, K. K. (2006) *The relationship of formative assessment to the professional development and perspective transformation of teachers* (Doctoral dissertation). Available from ProQuest Dissertations & Theses database. (10142894)

Solution Tree. (n.d.). *History of PLC*. Retrieved from http://www.allthingsplc.info/about/history-of-plc

Stenhouse, L. (1975). *An introduction to curriculum research and development*. London, England: Heinemann.

Stoll, L., Bolam, R., McMahon, A., Wallace, M., & Thomas, S. (2006). Professional learning communities: A review of the literature. *Journal of Educational Change, 7*(4), 221–258. https://doi.org/10.1007/s10833-006-0001-8

Stoll, L., & Louis, K. S. (2010). *Professional learning communities: Divergence, depth and dilemmas*. New York, NY: Open University Press.

Stoll, L. (2010). Professional learning community. In P. Peterson, E. Baker, & B. McGaw (Eds.), *International encyclopedia of education* (pp. 151–157). Oxford, UK: Elsevier. https://doi.org/10.1016/B978-0-08-044894-7.00435-8

Strahan, D. (2003). Promoting a collaborative professional culture in three elementary schools that have beaten the odds. *Elementary School Journal, 104*(2), 127–146. https://doi.org/10.1086/499746

Vescio, V., Ross, D., & Adams, A. (2008). A review of research on the impact of professional learning communities on teaching practice and student learning.

Teaching and Teacher Education, 24, 80–91. https://doi.org/10.1016/j.tate.2007.01.004

Williams, R., Brien, K., Crista, S., & Sullivan, G. (2008). Professional learning communities: Developing a school-level readiness instrument. *Canadian Journal of Educational Administration and Policy, 74*, 1–17.

APPENDIX A: CONSENT TO PARTICIPATE AND PERMISSION FOR CONFIDENTIAL RELEASE OF INFORMATION VIRGINIA POLYTECHNIC INSTITUTE AND STATE UNIVERSITY

Informed Consent for Participants

in Research Projects Involving Human Subjects

Title of Project: Professional Learning Communities: Their Impact On Teacher Practice?

Primary Investigator(s): Dr. Walter Mallory WMallory@vt.edu (703) 501-7930

Investigator: Debra Wines drwines@vt.edu (703) 231-4446

Purpose of this Research Project

You are being asked to participate in a proposed study, which aims to establish a framework for developing a good understanding of the process that is needed within professional learning communities (PLC), and to look at the standards of the PLC framework and its' impact on teacher practice. I am asking you to take part in an interview, because you have been a teacher or administrator within the Fairfax County Public School system. The research will help develop a more in-depth understanding of how professional learning communities play a role in improving teacher practice and student learning. My intent is to publish the data within my dissertation and use in academic publications. The total number of subjects will be five teachers and two administrators ranging in ages from 22-65 and will be composed of a diverse population.

Please read this form carefully and ask any questions you may have before signing this form.

II. Procedures

Should you agree to participate in the study you will be interviewed about you knowledge related to professional learning communities (PLC's) and their impact on teacher practice. For example if you are a teacher you will be asked a series of questions related to your experiences within PLC's and how the PLC process improves teacher practice. If you are an administrator, you will be asked questions related to what your expectations are of your teachers within PLC's.

Listed below are additional instructions involved with this interview.

1. Each teacher and administrator will be interviewed one time during a 30-45 minute session where they will be audio recorded.
2. The interviewee and the researcher will agree upon a location to meet.

III. Risks

There are no known risks beyond the risks of daily living.

IV. Benefits

The benefits of this study will be in improving student learning as we determine how useful Professional Learning Communities (PLC's) are in improving teacher practice. This study will be used to determine whether or not PLC's really help teachers, which has been stated in previous research. No promise or guarantee of benefits has been made to encourage you to participate.

V. Extent of Anonymity and Confidentiality

Should you choose to participate the data we collect from you will remain confidential. All data will be coded so that no names or addresses of any kind will be used as identifiers of participants. Research records will be kept in a locked file; only the researcher will have access to the records. If we record the interview, we will destroy the

tape after it has been transcribed, which we anticipate will be within six months to one year of taping. The findings of this research will be published in a dissertation and made public.

Quotes may be included in the dissertation and presentation. Pseudonyms will be used, however due to the small sample size, so it may be possible for someone to ascertain your identity. Any identifying information will be stripped before publication of the dissertation.

The person conducting this research is Debra Wines (Debra.Wines@vt.edu), and Professor Walter Mallory (wmallory@vt.edu), and Professor William Glenn (wglenn@vt.edu), will have access to the study. Taking part in this study is completely voluntary. You may skip any questions that you do not want to answer. If you decide to take part, you are free to withdraw at any time. The Virginia Tech (VT) Institutional Review Board (IRB) may view the study's data for auditing purposes. The IRB is responsible for the oversight of the protection of human subjects involved in research. At no time will the researchers release identifiable results of the study to anyone other than individuals working on the project without your written consent. The IRB is responsible for the oversight of the protection of human subjects involved in research.

VI. Compensation

No compensation will be earned by participants in this study.

VII. Questions or Concerns

Should you have any questions or concerns about the study's conducts or your rights as a research subject, or need to report a research-related injury or event, you may contact the Virginia Tech Institutional Review Board at irb@vt.edu or (540) 231-3732.

VIII. Freedom to Withdraw

It is important for you to know that you are free to withdraw from this study at any time without penalty. You are free not to answer any questions that you choose or respond to what is being asked of you without penalty.

IX. Subject's Consent

I have read the Consent Form and conditions of this project. I have had all my questions answered. I hereby acknowledge the above and give my voluntary consent:

____ Date__________

Subject signature____

Subject printed name____

CONSENT TO PARTICIPATE AND PERMISSION FOR CONFIDENTIAL RELEASE OF INFORMATION VIRGINIA POLYTECHNIC INSTITUTE AND STATE UNIVERSITY

Informed Consent for Participants

in Research Projects Involving Human Subjects

Title of Project: Professional Learning Communities: Their Impact On Teacher Practice?

Primary Investigator(s): Dr. Walter Mallory **WMallory@vt.edu 703) 501-7930**

Investigator: Debra Wines **drwines@vt.edu (703) 231-4446**

I. Purpose of this Research Project

You are being asked to participate in a proposed study, which aims to establish a framework for developing a good understanding of the process that is needed within professional learning communities (PLC), and to look at the standards of the PLC framework and its' impact on teacher practice. I am asking you to take part in an observation, because you have been a teacher or administrator within the Fairfax County Public School system. The research will help develop a more in-depth understanding of how professional learning communities play a role in improving teacher practice and student learning. My intent is to publish the data within my dissertation and use in academic publications. **Please read this form carefully and ask any questions you may have before signing this form**.

II. Procedures

Should you agree to participate in the study you will be observed during your collaborative team meeting, as you go through the Collaborative Team (CT) Cycle. The Collaborative Team (CT) Cycle is defined by six standards that are followed during the process. The standards that are followed are a shared vision and mission, collective inquiry, collaborative teams, action research and experimentation, continuous improvement, and being results oriented. Shared vision and mission relates to what teams commit too in their shared norms at each meeting; collective inquiry connects to how teachers unpack standards for each unit of study, and develop pre and post assessments for each unit; collaborative team and action research and experimentation fit with through analyzing pre assessment data and holding data dialogues, sharing of instructional strategies, and then committing to actions as they determine next steps; and continuous improvement and being results oriented relates to analyzing of post-assessment data, determining plans for intervention, intervening through various strategies and then reflecting on how the interventions worked. I will be a non-participant observer gathering field notes as part of the observation process. You will not be asked anything from me, but I will record various responses teachers, specialists and administrators give throughout the collaborative team cycle.

Listed below are additional instructions involved with this observation:

3. The team members will be observed during a team meeting to show how the collaboration process works within this school.
4. The researcher will use a CT protocol to observe the meeting to be transcribed later.
5. No personal information will be connected to anyone participating in the process.

III. Risks

There are no known risks beyond the risks of daily living.

IV. Benefits

The benefits of this study will be in improving student learning as we determine how useful Professional Learning Communities (PLC's) are in improving teacher practice. This study will be used to determine whether or not PLC's really help teachers, which has been stated in previous research. No promise or guarantee of benefits has been made to encourage you to participate.

V. Extent of Anonymity and Confidentiality

Should you choose to participate the data we collect from you will remain confidential. All data will be coded so that no names or addresses of any kind will be used as identifiers of participants. Research records will be kept in a locked file; only the researcher will have access to the records. The findings of this research will be published in a dissertation and made public.

Quotes may be included in the dissertation and presentation. Pseudonyms will be used, however due to the small sample size, so it may be possible for someone to ascertain your identity. Any identifying information will be stripped before publication of the dissertation. The person conducting this research is Debra Wines (Debra.Wines@vt.edu), and Professor Walter Mallory (wmallory@vt.edu), Professor William Glenn (wglenn@vt.edu), will have access to the study. Taking part in this study is completely voluntary. You may choose not to participate in the observation. If you decide to take part, you are free to withdraw at any time.

The Virginia Tech (VT) Institutional Review Board (IRB) may view the study's data for auditing purposes. The IRB is responsible for the oversight of the protection of human

subjects involved in research.

At no time will the researchers release identifiable results of the study to anyone other than individuals working on the project without your written consent. The IRB is responsible for the oversight of the protection of human subjects involved in research.

VI. Compensation

No compensation will be earned by participants in this study.

VII. Questions or Concerns

Should you have any questions or concerns about the study's conduct or your rights as a research subject, or need to report a research-related injury or event, you may contact the Virginia Tech Institutional Review Board at irb@vt.edu or (540) 231-3732.

VIII. Freedom to Withdraw

It is important for you to know that you are free to withdraw from this study at any time without penalty. You are free not to answer any questions that you choose or respond to what is being asked of you without penalty.

IX. Subject's Consent

I have read the Consent Form and conditions of this project. I have had all my questions answered. I hereby acknowledge the above and give my voluntary consent:

____ Date__________

Subject signature____

Subject printed name____

APPENDIX B: OBSERVATION PROTOCOL FOR CLT OBSERVATIONS

Created by Clint Mitchell

Purpose of this tool: This protocol serves as an observation tool to depict the work schools do as they engage in organizational learning practices. The information contained in this tool is based on the literature review on protocol-structured discussions, particularly as Collaborative Learning Teams (CLTs) engage in looking at student work, collaboration and engage in professional learning.

Part 1: Background Information:

Observer: ______________________ Observation Date: ___________

Observation Start Time: ___________ Observation End Time: ______

School Name/District: _____________ CLT: ____________________

Total # of participants in CLT: _______ Subject: __________________

Participants Names/Title: ____

Part 2: Observation Notes: Evidence of Collaborative Work

1. **Do members of the CLTs share ideas freely?** (Creation of goals, strategies, materials, pacing, questions, concerns, and results)**: ______**
2. **Is there trust and commitment among CLT members? __**
3. **Do members of the CLTs allow for members to deliberately and critically explore issues of teaching? _______**
4. **Do members of the CLTs critique the practice of their peers, and offer explicit instructional advice? ______**
5. **Are the CLTs focusing lessons on appropriate standards? ______**

Provide evidence to support observations:

Evidence of Conversations around Student Work

1. **Student work (artifacts) is available for CLTs to review from individual teachers: ______**
2. **CLTs have relevant data available to gain deeper understanding and dig deeper into evidence: _______**
3. **Teachers raise questions about student learning: __ _____**
4. **CLTs engage in continuous learning about their practice: _______**
5. **Teacher action plans (Units plans, DDDM protocols) are developed based on standards and assessment results: __ _____**
6. **Do they create SMART goals based on current data? ________**

Provide evidence to support observations:

Observation Protocol for CLT Observations

Created by Clint Mitchell

Evidence of Professional Practice
1. **Do members of the CLTs analyze student work in order to reflect on their practice? ________** 2. **Is there evidence and documentation (protocol) to document conversations during the CLT meetings? __ _____** 3. **Are CLT meetings focused on student learning and teacher practice? _____** 4. **Are the CLT meetings focused on lesson planning, curriculum design, differentiation, and instructional strategies? _ _____** 5. **Is there evidence of normalizing problems, revising accounts of the problem, and developing of action plans? _______** **Provide evidence to support observations:**

Part 3: Interactions between Teachers and Specialists and Teachers and Administrators

How do members of the school community interact with one another when engaged in organizational learning? Capture examples of questions asked among the groups as well as responses to the questions.

Interactions between Teachers and Specialists	**Interactions between Teachers and Administrators**
What do you see?	**What do you see?**
What did you hear?	**What did you hear?**
What did you think?	**What did you think?**

APPENDIX C: INTERVIEW PROTOCOL/QUESTIONS FOR TEACHERS

Interview Case Number:____

Interviewee Position:____

Date of Interview:____

Teachers:

1. How well do you believe the PLC framework is implemented fully at your school?
    a. Probe the response for strong points and weak points of the implementation.
2. What do you believe is the most important piece of the PLC process and why? how,
3. How does the PLC process contribute to the success of the school?
4. How does the PLC process contribute to the improvement of teacher practice?
5. What would you do to improve the PLC process at your school?
6. Please describe some of the ways in which teachers have a voice in the way PLC protocols are followed?
    a. Probe whether the teacher thinks other approaches could be used to provide the teachers greater voice regarding the protocols.
7. What role do your school leaders play in the PLC process within your school?

APPENDIX D: INTERVIEW PROTOCOL/QUESTIONS FOR ADMINISTRATORS

Interview Case Number:____

Interviewee Position:____

Date of Interview:____

Administrators:

1. How well do you believe the PLC framework is implemented fully at your school?
    a. Probe why there is not a full implementation, if that is the response.
2. What are your expectations of teachers and specialists when they look at their practices within PLC/CLT meetings?
3. How do you create an environment of shared goals and values within your school?
4. How does the PLC process contribute to improving teacher practice?
5. In what ways could the PLC process be modified to further improve teacher practice?
6. How do you provide time for teachers to collaborate and plan within your school so that it does not interfere with instructional time?

APPENDIX E: DOCUMENT ANALYSIS AUTHENTICITY PROTOCOL

Date:

Document Analyzed:

Questions for determining authenticity

What is the history of the document?

How did I get it?

What guarantee is there that it is what it pretends to be?

Is the document complete, as originally constructed?

Has it been tampered with or edited?

If the document is genuine, under what circumstances and for what purposes was it produced?

Who was/is the author?

What was he/she trying to accomplish? For whom was the document needed? What were the maker's sources of information? Does the document represent an eyewitness account, a secondhand account, reconstruction of an event long prior to the writing, an interpretation?

What was or is the maker's bias?

To what extent was the writer likely to want to tell the truth?

Do other documents exist that might shed additional light on the same story, event, project, program, context? If so, are they available, accessible? Who holds them?

(Merriam, 1998, p. 122) citing (Lincoln & Guba, 1981) citing Clark (1967, pp. 238-239).

APPENDIX F: REFLEXIVE JOURNAL ENTRY PROTOCOL

Date: **Participants:**

Location: **Facilitator:**

Reflexivity Protocol

"The Pensieve" (Gerstl Pepin & Patrizio, 2009; Rowling, 2000)

Thick rich description (including context)

Quotes

Self Reflexivity - *Prompts:* What do I know? How do I know what I know? What shapes and has shaped my perspective? How have my perceptions and my background affected the data I have collected and my analysis of those data? How do I perceive those I have studied? With what voice do I share my perspective? What do I do with what I have found?

Reflexivity About Participants - *Prompts:* How do those studied know what they know? What shapes and has shaped their world view? How do they perceive me as the inquirer? Why? How do I know?

Reflexivity About Audience - *Prompts:* How do those who receive my findings make sense of what I give them? What perspectives do they bring to the findings I offer? How do they perceive me? How do I perceive them? How do these perceptions affect what I report and how I report it?

APPENDIX G: IRB TUTORIAL COMPLETION CERTIFICATE

VIRGINIATECHVIRGINIATECHVIRGINIATECHVIRGINIATECHVIRGINIATECH

Certificate of Completion

This certifies that

Debra Rae Wines

Has completed

Training in Human Subjects Protection

On the following topics:

Historical Basis for Regulating Human Subjects Research

The Belmont Report

Federal and Virginia Tech Regulatory Entities, Policies and Procedures

on

February 15, 2014

David Moore, IRB Chair

VIRGINIA TECH.

Office of Research Compliance
Institutional Review Board
North End Center, Suite 4120
300 Turner Street NW
Blacksburg, Virginia 24061
540/231-3732 Fax 540/231-0959
email irb@vt.edu
website http://www.irb.vt.edu

MEMORANDUM

DATE: April 4, 2018

TO: Walt Mallory, William Joseph Glenn, Debra Rae Wines

FROM: Virginia Tech Institutional Review Board (FWA00000572, expires January 29, 2021)

PROTOCOL TITLE: Professional Learning Communities: Their Impact On Teacher Practice

IRB NUMBER: 17-1238

Effective April 4, 2018, the Virginia Tech Institution Review Board (IRB) approved the Amendment request for the above-mentioned research protocol.

This approval provides permission to begin the human subject activities outlined in the IRB-approved protocol and supporting documents.

Plans to deviate from the approved protocol and/or supporting documents must be submitted to the IRB as an amendment request and approved by the IRB prior to the implementation of any changes, regardless of how minor, except where necessary to eliminate apparent immediate hazards to the subjects. Report within 5 business days to the IRB any injuries or other unanticipated or adverse events involving risks or harms to human research subjects or others.

All investigators (listed above) are required to comply with the researcher requirements outlined at:

http://www.irb.vt.edu/pages/responsibilities.htm

(Please review responsibilities before the commencement of your research.)

PROTOCOL INFORMATION:

Approved As:	**Expedited, under 45 CFR 46.110 category(ies) 5,6,7**
Protocol Approval Date:	**March 5, 2018**
Protocol Expiration Date:	**March 4, 2019**
Continuing Review Due Date*:	**February 18, 2019**

*Date a Continuing Review application is due to the IRB office if human subject activities covered under this protocol, including data analysis, are to continue beyond the Protocol Expiration Date.

FEDERALLY FUNDED RESEARCH REQUIREMENTS:

Per federal regulations, 45 CFR 46.103(f), the IRB is required to compare all federally funded grant proposals/work statements to the IRB protocol(s) which cover the human research activities included in the proposal / work statement before funds are released. Note that this requirement does not apply to Exempt and Interim IRB protocols, or grants for which VT is not the primary awardee.

The table on the following page indicates whether grant proposals are related to this IRB protocol, and which of the listed proposals, if any, have been compared to this IRB protocol, if required.

Invent the Future

VIRGINIA POLYTECHNIC INSTITUTE AND STATE UNIVERSITY
An equal opportunity, affirmative action institution

Fairfax County
PUBLIC SCHOOLS
ENGAGE • INSPIRE • THRIVE

Office of Research and Strategic Improvement
8115 Gatehouse Road, Ste. 2100
Falls Church, VA 22042

THIS LETTER MUST BE ACCOMPANIED BY A SIGNED ACKNOWLEDGEMENT OF RESEARCHER RESPONSIBILITIES

August 16, 2018

Debra Wines
Fairfax County Public Schools
4314 Galesbury Lane
Chantilly, VA 20151

Dear Ms. Wines:

This letter represents the final phase of your application to conduct a study titled *Professional Learning Communities: Their Impact on Teacher Practice* (see below).

Description	Completed
Receipt of Application	☒
Verification of Complete Application (*expect six weeks from end of this phase to completion of the research screening process*)	☒
Review by Committee	☒
Acknowledgement of Responsibilities from Researcher	☒
Issuance of Research Screening Decision	☒

The Research Screening Committee has reviewed and approved, with conditions, your application to conduct the study. The conditions of approval for this study are described in the attached Acknowledgement of Researcher Responsibilities, which you have signed. The Division places great trust in you to maintain the highest standards for research, to uphold all of the researcher responsibilities you agreed to in the attached Acknowledgement, and to seek counsel from your sponsor if your commitments are ever in jeopardy. Terry Dade, assistant superintendent, Region 3, has agreed to be your sponsor.

You are authorized to begin data collection upon receipt of this letter. Please contact Terry Dade at tjdade1@fcps.edu to begin the project. You should be prepared to share this approval letter and your signed Acknowledgement of Researcher Responsibilities with schools and/or participants, if requested.

We look forward to receiving the study results, which are expected to benefit the system by providing information about the impact of PLCs on teacher practice.

Sincerely,

Ludmila Z. Hruda, M.S.Ed
Director

LZH/mf

Enclosure
cc: Terry Dade

Application ID #19010

Fairfax County PUBLIC SCHOOLS
ENGAGE • INSPIRE • THRIVE

Office of Research and Strategic Improvement
8115 Gatehouse Road, Ste. 2100
Falls Church, VA 22042

THIS ACKNOWLEDGEMENT DOES NOT REPRESENT APPROVAL TO CONDUCT RESEARCH IN FAIRFAX COUNTY PUBLIC SCHOOLS UNLESS ACCOMPANIED BY A SIGNED RESEARCH APPROVAL LETTER ISSUED BY FAIRFAX COUNTY PUBLIC SCHOOLS

ACKNOWLEDGEMENT OF RESEARCHER RESPONSIBILITIES

Research Title: Professional Learning Communities: Their Impact on Teacher Practice

Lead Researcher: Debra Wines

Affiliation: Fairfax County Public Schools

Date: August 9, 2018

The Researcher acknowledges the following responsibilities in conducting the study *Professional Learning Communities: Their Impact on Teacher Practice* in Fairfax County Public Schools (FCPS):

1. Participation in this research study is voluntary for all parties. Data collection from FCPS staff requires written informed consent. The Researcher is obligated to maintain evidence of consent for all participants for a period of at least three years after data are collected. Furthermore, at any time during the three-year period, upon request, the Researcher agrees to provide to FCPS evidence of consent for any or all study participants.

2. Anonymity of the **FCPS Division**, **individual schools**, and **all individual persons** participating in this project will be preserved in the reporting of the results. Any disclosure of the name of the Division, school, or participants requires written approval from the Superintendent or designee. If any exceptions to this paragraph have been approved, a separate disclosure agreement will be attached to this acknowledgement of researcher responsibilities.

3. The Researcher may study professional learning community's (PLC) impact on teacher practice and student outcomes. The Researcher must abide by the following conditions:

   The Researcher may not collect data at schools during blackout periods FCPS has reserved for beginning-of-year, testing, and end-of-year activities. For SY 2018-19, reserved blackout periods last from August 13 through September 14, 2018, and from April 15 through June 7, 2019.

   School
   - The Researcher may recruit Mason Crest Elementary for participation in the study.
   - The school will not be compensated for study participation.

   Administrators
   - The Researcher may recruit two administrators for participation in the study: one principal and one assistant principal.
   - The Researcher will recruit participants by disseminating study materials via email obtained from the school's public website.
   - Participation includes one 45-minute, face-to-face interview to be conducted at the participant's convenience September 15 through 30, 2018.
   - Participants will not be compensated for study participation.

Application ID #19010

- Participants' identities will be kept confidential and any identifying information will be stripped from transcripts. Pseudonyms will be used in any written quotes for reporting purposes.

Teachers

- The Researcher may recruit five elementary classroom teachers for participation in the study. Classroom teachers may be from any grade level from kindergarten through Grade 6.
- The Researcher will recruit participants by disseminating study materials via email obtained from the school's public website.
- Participation includes one 45-minute, face-to-face interview to be conducted at the participant's convenience and one observation of a collaborative learning team (CLT) meeting September 15 through 30, 2018. Observation notes of the CLT meeting will only reflect interaction among participants who have consented to participate in the study.
- Participants will not be compensated for study participation.
- Participants' identities will be kept confidential and any identifying information will be stripped from transcripts. Pseudonyms will be used in any written quotes for reporting purposes.

4. The Researcher will share a copy of the final report with the following:
   - Terry Dade, assistant superintendent, Region 3, the sponsor;
   - The Office of Research and Strategic Improvement.

   Note: Electronic delivery is preferred via email to the Research Screening contact identified on FCPS' research screening website (https://www.fcps.edu/node/28625). Please reference your application # 19010 when submitting reports.

5. This approval is valid for SY 2018-19. If the methodology changes during the course of the year, the Researcher must submit a Research Modification Form. If the Researcher would like to continue study activities in FCPS beyond June 2019, the Researcher must reapply using a Division Research Screening Application. (Forms are available on the research screening website at https://www.fcps.edu/node/28625.) The Researcher understands that modification requests and future research requests are subject to the policies and practices in place at the time of the request. Research Screening Committee cannot guarantee continued support or approval for requests to continue or modify this study.

6. The Researcher will follow the procedures approved by the Research Screening Committee. The Researcher will adhere to all FCPS policies and regulations. (See the research screening website at https://www.fcps.edu/node/28625.)

7. Because the Researcher is requesting access to non-publicly available data, a separate Data Agreement between the Researcher and FCPS will be signed specifying the details of this data provision. The data requested from FCPS by the Researcher will be released only upon execution of this separate agreement and the Researcher's fulfillment of the conditions specified therein. The separate agreement will detail the logistics of data provision, including timeline and format, as well as the estimated fee to be paid by the Researcher for FCPS provision of the data for this study. The data provision fee must be fully paid by the Researcher prior to FCPS releasing the data to the Researcher.

8. In conducting this research, the Researcher will comply with best practices endorsed by professional research and evaluation organizations (i.e., American Evaluation Association, American Educational Research Association, National Council on Measurement in Education, and American Psychological Association), including the involvement of human subjects.

9. The **Lead Researcher** must sign and return an executed *Acknowledgement of Researcher Responsibilities* before a decision letter can be issued by FCPS and may not begin any study activities before receiving an approval letter.

10. The Researcher is authorized to oversee this research study and ensure that all responsibilities listed above are fulfilled.

Application ID #19010

11. Failure to meet one or more of the responsibilities listed above may result in the immediate termination of research approval for this study. Furthermore, FCPS reserves the right to void any other current research approvals that Researcher may have and deny, without review, any applications for future research studies.

Debra Wines
(Debra Wines, Lead Researcher)

8/13/2018
(Date)

Application ID #19010

APPENDIX H: PROGRESS MONITORING FORM

Student Name:_____________________________

Strengths/Passions/Interests: (Music, Art, Physical Education, Library, Other)	
Social/Academic Behaviors: Strengths/Areas for Growth	

Date/Con cern Baseline Data	Cause	Extension/Grade Level, Prerequisite or Foundational Learning Target	Intervention Action Steps	Frequency/ Length of Instructional Focus	Duration Ratio	Data Collection Assessment	Person Responsible	Goal Met?
		Reading						
		Reading						
		Reading						
		Reading						
		Social Behavior						
		Academic Behavior						
		Math						
		Math						
		Math						
		Math						

Key

Quarter 1:

Quarter 2:

Quarter 3:

Quarter 4