ENHANCING PROFESSIONAL LEARNING COMMUNITIES TO IMPROVE STUDENT ACHIEVEMENT AT A TITLE I ELEMENTARY SCHOOL

by

JOSE MANUEL DEJESUS

(Under the Direction of Karen Bryant)

ABSTRACT

Background: The problem of practice at Coronado Elementary School is the inconsistency of effective collaborative planning among the grade level teams.

Purpose: This action research study aimed to determine teachers' perceptions of Professional Learning Communities and how they believed participation in a PLC impacts their professional development and classroom instruction in a Title I Elementary School.

Literature Review: The purpose of the literature review was to examine information related to enhancing classroom instruction through the effective implementation of professional learning communities (PLCs). The researcher examined three themes for this literature review: (1) Professional Learning Communities, (2) Teacher Engagement, and (3) Data-Driven Decision Making.

Research Design: Three questions guided the study: 1) How does an effective collaborative process among teachers in a Professional Learning Community impact teachers' perceptions of self-efficacy? 2) How does participation in a PLC impact teachers' instructional practices in the classroom? And 3) What does the action research team identify as the essential components of

developing an active PLC in an urban, Title I elementary school? The researcher used an Action Research approach for the study to address the problem of practice.

Data Collection and Analysis: The Action Research Team incorporated data collection methods to include personal interview questionnaires, focus group interviews, surveys, classroom and PLC observations, and personal journals. An analysis of the data revealed eight common themes that helped drive the analysis and understandings of the findings.

Results: Through a thematic analysis of the data collection connected to the research questions, eight themes emerged from the data collected throughout the three action research cycles. The emerging themes were: Teacher collaboration, teacher efficacy, job-embedded learning, team accountability, data analysis, time, leadership support, and PLC structures.

Conclusion: Based on the data collection and analysis, teachers perceived working in a PLC as beneficial to their self-efficacy and positively affecting teacher instructional practices. It will take school leaders to create the time and provide support to affect a PLC's efficiency positively. With limited time constraints and only working with one grade level, a more exclusive study of the PLC process will need to be conducted to support the research further.

INDEX WORDS: action research case study, professional learning communities, adult learning theory, social cognitive theory, educational leadership, teacher efficacy, collaborative planning, school improvement, distributed leadership, professional development

ENHANCING PROFESSIONAL LEARNING COMMUNITIES TO IMPROVE STUDENT ACHIEVEMENT AT A TITLE 1 ELEMENTARY SCHOOL

by

JOSE MANUEL DEJESUS

B.S.B.A., Chapman University, 1992

M.Ed., Florida Atlantic University, 2001

A Dissertation Submitted to the Graduate Faculty of The University of Georgia in Partial Fulfillment of the Requirements for the Degree

DOCTOR OF EDUCATION

ATHENS, GEORGIA

2021

ENHANCING PROFESSIONAL LEARNING COMMUNITIES TO IMPROVE STUDENT ACHIEVEMENT AT A TITLE I ELEMENTARY SCHOOL

by

JOSE MANUEL DEJESUS

Major Professor:	Karen Bryant
Committee:	Jami Royal Berry
	Jamon Flowers

Electronic Version Approved:

Ron Walcott
Dean of Graduate School
The University of Georgia
May 2021

DEDICATION

I begin by thanking my beautiful wife Marie (Cookie). You have been my inspiration since the moment I met you. Thank you for being by my side since the Navy's early days, then as I earned both my bachelor's and master's degrees. And now, during one of my most significant journeys, you are once again my guiding light.

To my three children Diana, Jose II, and Natalie, I am proud to be your father and grateful that my dedication to being a life-long learner has inspired you all to aim and reach for your goals.

To my parents, who taught me the significance of a good education at an early age and always made me believe that reading was the way to learn and the most important skill I will ever master.

To all the teachers in my life who have provided me different ways to understand and appreciate the love of learning.

ACKNOWLEDGEMENTS

I want to thank Dr. Karen Bryant, my major professor, for always providing the support and guidance and the smile at just the right moment to let me know it will be ok. To Dr. Jami Berry and Dr. Sheneka Williams for providing great classes and support that helped me learn along the way through this journey. To Dr. Jamon Flowers for your support as part of the dissertation committee. I also thank Charles "Mr. C" Crisman for teaching me early on how to navigate the library and online resources.

One notable person, I want to share my sincere gratitude for my first college professor, Dr. Nancy Munn-Fess, at Chapman University (CA). Through the magic of your red pen and dedication in both English 101 and 102 courses, you provided me the foundation to become a scholarly writer, and you encouraged me to seek a career in education.

I would also like to thank the fifth-grade teachers and support staff who took part in the action research study and provided excellent feedback. To the elementary students, whose hugs and smiles at the end of the day allowed me to end my day on a happy note.

To the special 2021 UGA Cohort, I have enjoyed this journey together. We have had some exciting moments together. It has been a great ride!

To Tutty, Joey, and Nina, I cherish you all and am so grateful to be your father and proud of the beautiful young adults you have become.

My dearest Cookie, you are the most significant person in my life. I have enjoyed having you by my side for all these years. Thank you for your love and the confidence you provided me to take on this journey. I Love you!

TABLE OF CONTENTS

Page

LIST OF TABLES

Page

LIST OF FIGURES

Page

CHAPTER 1

INTRODUCTION

The Problem

The problem of practice at Coronado Elementary School is the inconsistency of effective collaborative planning among the grade level teams. Although the school refers to collaborative planning as Professional Learning Communities (PLCs), the practices and protocols employed by teachers and support staff are not consistent with those found in more established PLCs. There is a disparity in how the different grade level PLCs function. Some grade levels have set norms, agendas, and specific protocols to conduct true collaboration, while others have limited or very few processes in place. This inconsistency in the collaborative model practices across the PLCs lends to varied teacher practices across the classrooms. Fisher et al., 2020, described the purpose of a PLC to improve the pedagogical knowledge (skills and knowledge about how we teach) and the content knowledge (skills and knowledge about what we teach) of educators through collaboration among colleagues.

Purpose of the Study

The purpose of this action research study was to determine teachers' perceptions of Professional Learning Communities and how they believed participation in a PLC impacts their professional development and classroom instruction in a Title I Elementary School.

Research Questions

1) How does an effective collaborative process among teachers in a Professional Learning Community impact teachers' perceptions of self-efficacy?

2) How does participation in a PLC impact teachers' instructional practices in the classroom?

3) What does the action research team identify as the essential components of developing an active PLC in an urban, Title I elementary school?

Definition of Terms

For a better understanding of this Action Research study, the following terms are identified in the context of this research:

1. **Action Research**: Any systematic inquiry conducted by teachers, administrators, counselors, or others with a vested interest in the teaching and learning process or environment to gather information about how their schools operate, how they teach, and how their students learn (Mills, 2018).
2. **Case Study**: An in-depth qualitative research study of an individual program, activity, person, or group (Mertler, 2019).
3. **Collaboration**: Represents a systematic process in which teachers work together interdependently to impact their classroom practice in ways that will lead to better results for their students, for their team, and their school. (DuFour et al.,2016)
4. **Collaborative Learning Teams**: Are a group of people working interdependently to achieve a common goal for which members are held mutually responsible (DuFour et al., 2010).

5. **Common Formative Assessments** are team-designed, intentional measures used to monitor student attainment of essential learning targets throughout the instructional process (Jakicic, 2017).
6. **Data-Driven Instruction::** Data-driven instruction is the process by which educators examine assessment data to identify student strengths and deficiencies and apply those findings to their practice (Mertler, 2014).
7. **State Assessments:** The State Assessment System is a comprehensive summative assessment program and represents a single system of summative assessments that span all three levels of the state's educational system – elementary, middle, and high school (Georgia Department of Education, 2018)
8. **Likert-Type Scale**: Statements on surveys or questionnaires where individuals are asked to respond on an agree-disagree continuum (Mertler, 2019).
9. **Local School Plan for Improvement**: The LSPI is an actively managed, living plan for performance developed by school leadership teams and teachers. Each plan includes data-driven school objectives that support the District's strategic goals and measurable targets and an implementation plan to achieve those targets (MCPS, 2009).
10. **Professional Learning Communities**: A school-wide PLC can be the day-to-day practice of regularly meeting groups of teachers and support staff who engage in various methods intended to foster professional learning and instructional improvement (Allen, 2013).
11. **Teacher Effectiveness**: Effective teachers have high expectations for all students and help them learn. They use diverse resources to plan and structure engaging learning opportunities for students to learn (Varlas, 2009).

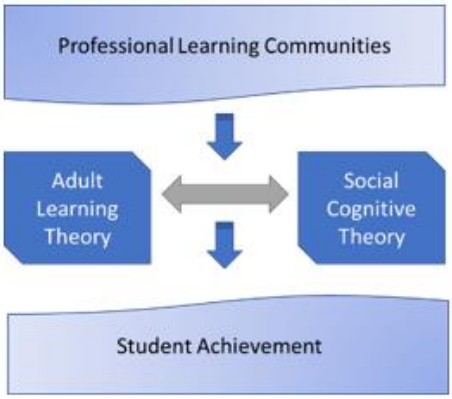
12. **Title I:** Title I, Part A (Title I) of the Elementary and Secondary Education Act, as amended by the Every Student Succeeds Act (ESEA), provides financial assistance to local educational agencies (LEAs) and schools with high numbers or high percentages of children from low-income families to help ensure that all children meet challenging state academic standards (US Department of Education, 2020).

Theoretical Framework

This action research study combined two theoretical models: the Adult Learning Theory based on Malcolm Knowles's (1984) work and the Social Cognitive Theory, based on Albert Bandura's work (1977). Within these two models, the researcher used them as the framework to allow a better understanding of how teachers perceived their role within a professional learning community.

Figure 1

Theoretical Framework



Adult Learning Theory

Teachers can learn from one another when immersed in the professional learning community model; the nature of that learning is different for individuals depending upon age and

career stage. Teachers often bring varying levels of expertise and knowledge to their learning teams when working collaboratively, enhancing the PLC's effectiveness. Adult development theories provide a framework for understanding how adult learners learn much differently from how younger learners while also giving insight into devising effective professional development programs to meet teachers' needs at all phases of their careers (Trotter & Roberts, 2006). To understand how teachers learn from one another, one must first understand the concept of adult learning and how age impacts learning styles.

The collaboration of adults is critical to student achievement. Theorist Malcolm Knowles published his first article (1968) about his understanding of andragogy with the provocative title "Andragogy, Not Pedagogy." Knowles' concept of andragogy - 'the art and science of helping adults learn' - 'is built upon two central-defining attributes: First, a conception of learners as self-directed and autonomous; and second, a conception of the role of the teacher as a facilitator of learning rather than the presenter of content (Merriam, 2004).

Previously, much research and attention had been given to the concept of pedagogy – teaching children. Knowles recognized that there are many differences in the ways that adults learn as opposed to children. His thoughts surrounding andragogy sought to capitalize on the unique learning styles and strengths of adult learners. Knowles's Theory of adult education suggested that adults succeed in situations where they are highly motivated, where they can participate in the learning process, and where learning content had practical applications. Adult learners retain information best when relevant and valuable (Manning, 2007; Serhat, 2020).

Social Cognitive Theory

The second theory that supported this study's framework was Bandura's Social Cognitive Theory (1986; 2001). This theory stems from Bandura's earlier conceptualization of Social

Learning Theory. Social Learning Theory is rooted in psychology and behaviorism and initially focused on how people acquired behaviors by observing their external environment. Thus, the Social Learning Theory would predict that a person's belief that behavior will result in a particular reinforcement will significantly influence that person's likelihood of enacting the behavior. Bandura debated that the phrase "learning theory" emphasized the relationship between observation and behavior, consequences of behavior, and the enactment of imitative modeling. Therefore, Bandura (1986; 2001) reformulated and renamed the Social Learning Theory to the Social Cognitive Theory. Social Cognitive Theory considers the role of (a) cognition, (b) self-efficacy, and (c) motivation in the social learning process and acknowledges the individual learner as entirely in control of his/her learning experience (Bandura, 1986). The focus for this action research will be on self-efficacy.

Self-Efficacy. Bandura's (1977) work on self-efficacy has shown that people's behavior is influenced by how competent they perceive themselves to meet an expectation. Self-efficacy beliefs determine how people feel, think, motivate themselves, and behave. Such views produce these diverse effects through four significant processes (Bandura, 1994). They include cognitive, motivational, affective, and selection processes. Although people might overestimate their abilities, Bandura believes a resilient sense of efficacy requires overcoming obstacles through perseverant effort. Some setbacks and difficulties in human pursuits serve a practical purpose in teaching that success usually requires sustained effort (Bandura, 1994).

Self-efficacy involves perceived confidence in the ability to enact a behavior to achieve the desired outcome effectively. According to Bandura, "given appropriate skills and adequate incentives, self-efficacy is a major determinant of people's choice of activities, how much effort they will expend, and of how long they will sustain effort in dealing with a situation" (1977).

Self-efficacy has a significant impact on behavior change because it determines and predicts actual behavior (Bandura, 1977). Bandura argued that self-efficacy is a more powerful predictor of behavior than past performance.

Overview of the Methodology

The researcher used an Action Research approach for the study to address the problem of practice. This method was an effective means of identifying issues in school settings. Action research permitted the action research team to engage in a continuous examination, planning, acting, developing, and reflecting. Action research is defined as an emergent inquiry process in which applied behavioral science knowledge is integrated with existing organizational knowledge and applied to real organizational problems (Shani & Passmore, 1985).

Action Research allows teachers to be more flexible in their thinking, more receptive to new ideas, and more organized in their problem-solving approach (Johnson, 2008). A meaningful, relevant program of practice is situated within a professional educator's scope of work. The program is specific to the setting, students, and context (Mertler, 2019). Unlike traditional social science research that frowns on intervening in any way in the research setting, action research demands some form of intervention (Anderson et al., 1994). Another strength of using an action research approach is that it permitted teachers to investigate their practice and to discover what will and will not work for their students in their classrooms (Mertler, 2019). There are multiple action research cycles operating concurrently (Goghlan & Brannick, 2014).

In action research, the process is iterative, cyclical, and participative. It is intended to foster a deeper understanding of a given situation, inform future action, start with conceptualizing and particularizing the problem, and move through several interventions and evaluations (Bloomberg & Volpe, 2019). Mertler and Charles (2011) developed a cyclical

process composed of a four-stage approach. The four stages are as follows: 1) the planning stage, 2) the acting stage, 3) the developing stage, and 4) the reflecting stage. The researcher will further discuss the four-stage approach in chapter 3.

Intervention

Case Type and Boundaries

This action research case study examined several components of collaborative learning teams working within a PLC. Although the action research team reviewed current practices and procedures developed in Miramar County Public School's framework, the study focused on one grade level. For this study, we used a group of teachers in a fifth-grade level setting along with an instructional coach, a math specialist, and an assistant principal.

To gain significant insight into our problem for this action research, we designed the study to be a single case study within the school setting. Bloomberg and Vogel (2019) describe a case study as a qualitative methodology to provide an intensive description and contextual-bounded analysis of a social phenomenon. Although this study is a small sample of a school within the district, the findings may inform other school districts in incorporating a PLC within their schools.

Data Collection

For this study, we formed an Action Research (AR) team comprised of ten members. The action research team engaged in three cycles within the action research to generate a comprehensive data collection. The data collection allowed the team to identify ways to improve its current practices within the PLC and helped design and revise interventions to address the study group's needs.

In the first cycle, the researcher analyzed feedback from a focus group interview consisting of the ten members on the action research team. This rich, authentic information created an environment where the team members established a sense of trust in speaking among the group. The AR team proposed using a pre and post-test for the fifth-grade students on a math unit on decimals to utilize student assessment data as part of this study's data collection. The teachers administered a math pre-test during the first cycle, with the post-test given during the second cycle.

Also, the AR team used two data gathering tools to solicit feedback on the team's perspective about teacher self-efficacy and working in a collaborative setting. The two instruments used for the study were the Teacher Sense of Efficacy Scale and the Collaborative Learning Teams Self-Assessment. The Teacher Sense of Efficacy Scale instrument, developed by Megan Tschannen-Moran, College of William and Mary, and Anita Woolfolk Hoy, the Ohio State University, focused on three correlated factors: Efficacy in Student Engagement, Efficacy in Instructional Practices, and Efficacy in Classroom Management. (Tschannen-Moran & Hoy, 2001). The Collaborative Learning Teams (CLT) Self-Assessment is a district-created instrument used by PLC members to rate their current collaborative learning teams (MCPS, 2019).

The action research team used both instruments at the beginning and again at the end of the study to compare findings. The AR team immersed themselves in a few literature review articles about PLCs.

In cycle two, the AR team met to reflect on the first nine weeks of school and discuss the PLCs' progress. The researcher conducted a focus group interview with the ten members of the AR team. A member of the action research team transcribed the recording of the meeting, and the AR team members were able to analyze and use it to plan for future steps.

Also, during this cycle, the 5th-grade students completed the post-test for the math decimals unit. The instructional coach also collaborated with the district's math specialist to provide targeted support to math teachers through informal classroom observations, reviewing common assessments and instructional alignment, and leading instructional planning and professional learning. The AR team continued to read related literature about PLCs.

Rounding out the study in cycle three, the AR team analyzed the interventions put forward in the study. They analyzed the pre/post-tests for the math decimals unit and continued to delve further into PLCs literature. At the end of the cycle, we administered the post surveys for the Teacher Sese of Efficacy Scale and the Team Accountability section of the CLT Self-Assessment. The AR team concluded the study by completing the personal interview questionnaire.

Significance of the Study

As we analyzed the data, Coronado Elementary School students were still experiencing a disparity among our economically disadvantaged students and students not socially economically affected even with the many resources provided. Students in high poverty schools, and students from diverse minority groups, continued to score below state standards in math compared to students from higher socioeconomic status. Research has shown ample reasons for the achievement gap between high-poverty schools versus those from non-poverty schools. In *Education and Poverty: Confronting Evidence (2012*), Ladd points out that the percent of students who are members of minority groups demonstrates significant differences between students from low and high socioeconomic status (SES) families. He believes it will take a shift in policies to provide more resources to support students from low-SES families. In the article *From the Achievement Gap to the Education Debt: Understanding Achievement in the US School*

(2006), Ladson-Billings refers to the achievement gap and how our nation's outstanding debt has accumulated in educating our minority sub-groups.

Teacher self-efficacy plays a considerable part in contributing to improving those achievement gaps. Self-efficacy is the belief that one can perform in a particular manner with the idea of attaining an ultimate result (Bandura, 1986). Self-efficacy involves perceived confidence in effectively enacting a behavior to achieve the desired outcome (Bandura, 1977). According to Bandura, "given appropriate skills and adequate incentives, self-efficacy is a major determinant of people's choice of activities, how much effort they will expend, and of how long they will sustain effort in dealing with a situation" (Bandura, 1977, p. 194). When a teacher is placed in a position to motivate and influence others, their self-efficacy must exude the necessary confidence and forward-thinking it takes to empower students and inspire them to produce (Bandura, 1977).

In the literature review, we examined some potential factors contributing to student learning. Implementing efficient PLCs and increasing teacher efficacy within a PLC may affect student learning. The researcher delved deeper into the research to determine if enhancing the PLC processes and structures will lead to higher student achievement. This study holds the potential to add to the body of research on the connection between professional learning communities and student achievement in Title I schools.

Organization of the Dissertation

Chapter 1 begins with the introduction, which covers the problem, purpose of study, research questions, the definition of terms, a summary of the theoretical and conceptual frameworks, an overview of the dissertation's methodology, intervention, and significance. Chapter 2 covers the review of the related literature available on professional learning

communities, which include professional learning communities, teacher engagement, data-driven decision-making. Chapter 3 explains the research design and methodology, which encompasses the theoretical and conceptual frameworks, an action research case study to cover the design and implementation teams, and the timeline. It also covers the interventions, research design, contextual setting, selection, data collection methods, data analysis, and the study's reliability and validity. In Chapter 4, the researcher thoroughly presents the case study, which covers the context, problem framing in the context, problem framing on the site, and the problem framing nationally. Also, included the story and outcomes, interviews, focus groups, researcher notes of participation observations, action research artifacts, and the researcher journal notes from the case study. For Chapter 5, the researcher laid out the case findings that cover the introduction, data collection connected to the research questions, and the results from action research cycles 1, 2, and 3. And finally, he concludes with Chapter 6, where he discussed a summary of the findings and discussed the significant findings related to the literature reviewed and significant findings related to the research questions.

CHAPTER 2

Review of the Related Literature

The purpose of this action research study was to determine teachers' perceptions of Professional Learning Communities and how they believed participation in a PLC impacts their professional development and classroom instruction in a Title I Elementary School. The research questions for this study include:

1. How does an effective collaborative process among teachers in a Professional Learning Community impact teachers' perceptions of self-efficacy?
2. How does participation in a PLC impact teachers' instructional practices in the classroom?
3. What does the action research team identify as the essential components of developing an active PLC in an urban, Title I elementary school?

To thoroughly carry out this study, it was essential to complete a critical review of current literature. The literature review was ongoing throughout the data collection, data analysis, and synthesis phases of the action research study.

Problem Framing in the Literature

This action research focused on reviewing the literature to address the problem of practice at Coronado Elementary School. Current practices among the collaborative teams in the PLCs demonstrated an inconsistency between grade-level teams. There is a disparity in how the different grade level PLCs function. Although all collaborative teams created some set of norms

and protocols, not all groups were functioning collectively at high levels. Some of the processes like sharing ideas, analyzing student data, sharing best practices, and modeling lessons were not always standard practices. This inconsistency in the collaborative model practices across the PLCs lends to varied instructional practices across the classrooms. PLCs provide an environment that encourages professional development, collaboration, and innovation among teachers (Brown et al., 2018). Research suggests that effective professional learning communities enhance teacher collaboration and student achievement (Voelkel & Chrispeels, 2017).

Based on numerous observations over the last three years, the collaborative planning sessions were not consistent or cohesive across grade levels. Feedback from teachers, administrators, coaches, and support staff, has demonstrated that these differences among the collaborative teams have impacted teacher practices, thus directly affecting student learning. Creating a professional learning community with standard protocols and processes will allow the teachers and support staff to be more cohesive to impact student achievement. When a school or school district functions as a PLC, educators within the organization embrace high learning levels for all students (DuFour et al., 2016). With a significant amount of teacher turnover or grade changes, it will be vital to have those standard practices and expectations to allow for more natural adaption to a team.

Professional learning communities are committed educators working collaboratively in an ongoing process designed to improve student achievement (Hoaglund et al., 2014). Reichstetter (2006) describes a PLC as a team of members who regularly collaborate toward continued improvement in meeting learner needs through a shared curricular-focused vision. Creating a continuous improvement culture and establishing cohesive and effective professional learning communities will be a top priority as a school leader.

Through this literature review, the researcher explored the benefits of implementing PLCs by focusing on three themes, professional learning communities, teacher engagement, and data-driven decision making, to observe its impact on teacher practices and student achievement.

Professional Learning Communities

Professional learning communities in the educational setting are groups of individuals committed to continuous improvement through shared values and reflection (Hord, 1997). In PLCs, teams are open to critical thinking, reflective dialogue, self-examination, and resolving issues that impede student success (Rasberry & Mahajan, 2008). The members must be committed to the time, energy, and collaboration required to bring about lasting change in their classrooms and school (p. 2). While the concept is interpreted and enacted differently in different contexts, there is broad agreement in the literature that demonstrates these core features: 1) a shared vision and a sense of purpose related to student learning; 2) collaboration; 3) reflective or inquiry-based dialog; and 4) collective responsibility for student learning (Grossman et al., 2001; Hord, 1997; Stevens & Kahne, 2006; Stoll & Louis, 2007). A school-wide PLC can be the day-to-day practice of regularly meeting groups of teachers and support staff who engage in various methods intended to foster professional learning and instructional improvement (Allen, 2013).

The starting point for professional learning begins in schools and classrooms where teachers work collaboratively to work on lesson planning, common assessments, and sharing resources to help better their instructional practices. Professional communities build relationships between and among teachers who share common goals for improved or increased student learning and achievement. These PLCs eliminate teacher isolation and start with what teachers know and do (Lieberman & Miller, 2011). Bringing educators together for collaborative work has been regarded as a worthy practice (Visone, 2016).

According to Wilson (2016), professional learning communities involve shared governance among members that will ultimately result in school improvement. In the book, *Learning Together, Leading Together: Changing Schools Through Professional Learning Communities* (2004), Hord describes an active PLC that firmly adheres to a vision of student learning, a vision that acts as a consistently articulated and referenced guidepost in making decisions about teaching and learning. The overarching premise of PLCs is they must ensure that students learn. There is an emphasis on providing that students are not merely being taught but also learning (DuFour, 2004).

McLaughlin and Talbert (2006) defined professional learning communities as "organizational structures in which teachers work collaboratively to reflect on their practice, examine the evidence about the relationship between practice and student outcomes, and make changes that improve teaching and learning for the particular students in their classes" (p. 3). The PLC mindset allows for the creation and distribution of collective knowledge (Visone, 2016). In a PLC, educators participate in professional learning that can transform a school. For significant change to occur, PLC groups must make instructional practices the focus of their work (Spencer, 2016).

A common theme from the various authors' descriptions of a PLC is that the focus centers around a group of people working collaboratively to share ideas, focusing on continuous student achievement improvement. Successful PLCs incorporate professional development strategies that allow teachers to learn new practices and generate new knowledge (Harris & Jones, 2010). As educators work together to identify and solve problems of practice, they build the capacity and shared will to move forward the initiatives of their schools and districts and enhance all students' learning and achievement (Lieberman & Miller, 2011). Students get better

when teachers get better—and teachers get better when they come to know and understand their practice differently and thus shift their beliefs about what they and their students can accomplish (Donohoo & Mausbach, 2021).

A key factor to note is that over time, the term PLC has been loosely used and can be in danger of losing its meaning. In the book, *Learning by Doing: A Handbook for Professional Learning Communities at Work (2016)* DuFour, et al., describe a PLC as an ongoing process in which educators work collaboratively in recurring cycles of collective inquiry and action research to achieve improvement for the students they serve. They say that PLCs operate under the assumption that the key to improving learning for all students is continuous job-embedded learning for educators.

Shared Leadership. Shared or Distributed Leadership in an educational setting can be described as principals and teachers and participating together as mutual learners and leaders in study groups, action research teams, vertical learning communities, and learning-focused staff meetings (Lambert, 2002). In schools and districts that incorporate the PLC models, collaborative teams contribute to the positive school culture where shared leadership thrives (Spiller & Power, 2019). The teacher leader's role—what it is and how it is defined—is varied; however, depending on the school context and the research. Many scholars agree that teacher leadership occurs within and outside of classrooms to influence school-wide instructional practice (Cooper et al., 2016).

Lambert (2002) mentions that principals cannot go at it alone as the school's instructional leaders. Teachers are practically untapped with their knowledge base, limiting them from contributing to the continuous improvement model. Teachers are the first and most influential factor in students' success in school (Wilson, 2016). However, many teachers do not perceive

themselves as leaders within their schools. In any organized system to include schools, people typically specialize or develop competencies related to their predispositions, interests, aptitudes, prior knowledge, skills, and specialized roles (Elmore, 2000). Elmore continues, "Distributed Leadership derives from the fact that large-scale improvement requires concerted action among people with different areas of expertise" (p. 35).

Distributed leadership is also a form of collective leadership in which teachers develop expertise by working together (Harris, 2004). Harris (2004) suggests that teacher leaders can help other teachers encompass the school goals and understand the changes needed to improve teaching and learning, and work toward school improvement. To help young people learn more complex and analytical skills they need for the 21st century, teachers will need to know to teach in ways that will help students develop higher-order thinking skills and performance (Darling-Hammond & Richardson, 2009). The content of professional learning can make the difference between enhancing teachers' competence and providing just a place for them to talk. Empowering teachers can have a significant effect on student academic performance (Wilson, 2016).

Due to their influence in schools, teacher leaders are becoming more widely acknowledged and accepted as part of a shared or distributed leadership community. Extensive research and literature suggest that teacher leaders play a significant role in reforming schools, resulting in changes in schools' traditional leadership structure. Historically, teacher leadership existed within several informal contexts within schools (Wilson, 2016). To avoid disparities between what teachers learn in professional development and what they can implement in their classrooms, the schools will need to tie in curriculum, assessments, standards, and professional learning opportunities (Darling-Hammond & Richardson, 2009). When teachers begin taking

ownership – alongside administrators – for low student achievement, they will gain ownership of solutions developed as a team (Wilhelm, 2010). Moreover, the principal, teacher leader, and school faculty should work together to identify and consistently uphold professional norms for collective learning and improved student achievement and instruction (Cooper et al., 2016).

Shared Personal Practice. As teachers interact, we find shared personal practice involves observing, providing feedback, and sharing new methods in both formal and informal settings. Another way to describe shared personal practice is when school staff share their classroom practice with their peers in a formalized environment with the intent to improve and change their classroom practice (Leo, 2000). When teachers get a chance to visit each other's classrooms to observe, script notes, and discuss observations with each other, As "peers helping peers" (Hord, 1997), teachers build a culture of mutual respect and trustworthiness for both personal and total school improvement. Shared personal practice requires respect and the development of trust (Huffman & Hipp, 2003). Conducting peer observations, sharing feedback, and coaching or mentoring all assume a significant professional learning community position. Wahlstrom and Louis (2008) noted that shared practice enables teachers to take roles such as mentor, mentee, coach, specialist, advisor, and facilitator.

In a PLC, collaboration is a process in which teachers work together interdependently to impact their classroom practice in ways that will lead to better results for their students, for their team, and their school (DuFour et al., 2016). The goal here is to get members of a collaborative team to build shared knowledge on the best way to reach the schools' goals and learning objectives. In a PLC, professional learning activities should be job-embedded, informed by data, centered on student work and how students learn (Stewart, 2014). Teacher learning is most impactful when members are part of a learning community of practice with similar grade levels

or related content or subject areas. For significant change to occur, PLC groups must make instructional practices the focus of their work (Spencer, 2016).

Vescio et al. (2008) conducted eight studies exploring the relationship between PLCs and teacher learning. In all eight reviews, there was evidence to indicate that PLCs had positive implications for teacher learning. Butler et al. (2004) claimed that PLCs offer teachers the opportunity to co-construct knowledge with their colleagues, reflect, and subsequently revise their prior knowledge and assumptions. However, if teachers benefit from this learning truly, they must embrace their role as learners when working in these teacher communities (Nelson, 2009).

Focus on Results. Another theme to consider in driving a PLC is the need for results orientation. To assess their effectiveness in helping students learn, educators in a PLC will need to focus on results—evidence of student learning (DuFour et al., 2016). As a collaborative team working as a PLC, they must be able to focus on four critical questions:

1. What is it we expect students to learn?
2. How will we know if our students are learning?
3. How will we respond when students don't learn?
4. How will we respond when students have learned?

At the core of the professional learning community concept lies the belief that merely providing instruction is not enough; educators must also ensure students learn (Dufour, 2004). The focus on results will need to utilize student information data to help educators set goals, identify students in need of extra support, and confirm which instructional strategies effectively meet all students' needs. Members of a PLC school will need to realize and understand that their efforts to achieve high learning levels must be based on results instead of good intentions

(Buffum et al., 2008). Teachers are focused on student learning. They assume that all students can learn at reasonably high levels and that teachers can help them, despite many obstacles that students may face outside of school. (Kruse et al., 2009)

A prominent focus of the PLC should be on the tools employed for ongoing instruction and the development of the formative and summative assessments used to monitor student learning (Visone, 2016). *In Learning to Improve, How America's Schools Can Get Better at Getting Better* (2016), the authors focus on six principles representing the foundational elements for improvement science in collaborative communities. The fourth principle, "We Cannot improve at scale what we cannot measure*,"* focuses here is that we must measure the outcomes as a collaborative team. Data collection intends to advance continuous improvement, and data need to be collected frequently to identify opportunities for change and assess whether positive changes are occurring. Based on the data, teachers will need to determine if they are getting the results they are striving to achieve. When teams set specific, collective goals, they are more likely to identify and implement the most effective strategies and persist in the face of setbacks (Donohoo & Mausbach, 2021).

Another way to focus on results is to create goals that align with school and district goals. A key ingredient to any collaborative process is the creation of SMART goals: goals that are 1) strategic and specific, (2) measurable, (3) attainable, (4) results-oriented, and (5) time-bound (Muñoz & Branham, 2016). Individuals, teams, and schools will use relevant data and information to promote continuous improvement. School teams benefit when they have a few key goals that clarify the results they seek and how each member can contribute to achieving those results. (Lencioni, 2012).

Teacher Engagement

A teacher who is engaged and effective has a greater chance of effectively influencing students' academic achievement. Such postulation has been held by Valenta (2010) about teacher engagement, teacher effectiveness, and student achievement. Teachers who are engaged and effective are also actively involved in establishing healthy student relations; demonstrate enthusiasm in improving pedagogy and responsiveness to the global demands for quality teaching; and make or participate in teaching-learning decisions that enrich students' lives (Cinches et al., 2017). An engaged teacher is available to provide student support to accomplish the assigned tasks; adjusts one's teaching to accommodate students' pace; sets aside time to know students' needs and concerns (Kahn, 1990).

Teacher collaboration refers to the professional collaborative and cooperative practices and activities that teachers engage in to achieve their shared educational goals (DuFour, 2004). An active PLC requires the collective efforts of administrators and groups of teachers. A robust professional community encourages teachers to work together to develop shared understandings of students, curriculum, and instructional policy and produce materials and activities that improve instruction (Kruse et al., 1994). In an established PLC, teachers will need to embrace collaboration as they work together to identify student improvement needs. These teachers must agree to work together over a semester or longer with the goal of professional development (Stewart, 2014). According to Wilson (2016), professional learning communities involve shared governance among members that will ultimately result in school improvement. Darling-Hammond (1996) and, more recently, Lomos et al. (2011) found that when teachers engaged in collaborative inquiry, they enhanced their knowledge and experienced greater shared understanding.

Another critical factor in teacher engagement can be attributed to teachers establishing a culture of existing peer networks (Calvert, 2016). In peer networks, teachers observe each other's classes, share problem and solution ideas, work from established protocols and norms, and follow what they have learned. Engaging in peer observation signals two-way, reciprocal learning for teachers (Zepeda, 2014). Like other student learners, teachers long for opportunities to watch colleagues teach and choose for themselves the strategies they will adapt to their classrooms, following up with teachers they observe to talk about their practice and asking questions (Calvert, 2016). For engaged teachers, the regulation of attention and effort towards completing work-related tasks may lead to more favorable work conditions with valued intrinsic and extrinsic rewards, which promote the experience of satisfaction (Lent & Brown, 2006).

Challenges. Researchers have consistently cited teacher isolation as a significant barrier to substantive school improvement. In that regard, this was a call for schools to embrace a more collaborative culture emphasizing joint analysis of professional practice (Muñoz & Branham, 2016). Many variables can directly affect the creation of effective PLCs, including individual responses to change, group dynamics, and school context. More specifically, influential variables can include school size, school-age and history, group dynamics, and existing professional learning infrastructure (DeMatthews, 2014). Also, the current conditions of the teaching profession can serve as a barrier to effective PLCs. Today, teachers deal with more short-term priorities, more paperwork, and often overwhelmed with meaningless data through new school district policies, programs, and interventions (Martinet al., 2012; Skaalvik & Skaalvik, 2010).

Time to meet and talk is essential to the beginning and maintaining meaningful education reform within a school. Time allocated in the day for teachers to meet and have structured

agendas can be challenging within a PLC. Visscher and Witziers (2004) concluded that teachers needed to do more than share goals and lessons to impact student learning. Teachers had to engage in data analysis activities and use the information to improve teaching and student learning. There must be a formal process that provides substantial and regularly schedule blocks of time for educators to conduct an ongoing self-examination and self-renewal (Kruse et al., 1994).

Trust. Professional learning communities are recognized as effective in improving teacher collaboration and student achievement. Trust is a significant factor in effectively implementing the PLC model, and the school principal is best positioned to influence school trust levels (Hallam et al., 2015). Dynamics such as trust, belief, and sense of community are conditions needed to deliver successful collaborative work and outcomes that emerged from collaboration (Dunne et al., 2000). The degree of trust within the school's collaborative culture significantly affects PLC effectiveness relative to students' performance (Bryk and Schneider, 2004; Forsyth et al., 2006).

Engaging in collaborative work in a PLC, teachers must trust their colleagues and experiment with a collaborative approach. If team members find it hard to find common ground or face personality conflicts, team members can focus on team goals and student outcomes (Jao & McDougall, 2016). Teachers must feel they are honored for their expertise—within the school and the district, the parent community, and other significant groups. The absence of sufficient trust within an interdependent team increases teachers' vulnerability, inhibiting communication and shared understanding, making it difficult for schools to meet their goals for student learning (Tschannen-Moran & Hoy, 2000). Trust improves teachers' willingness to collaborate and share their instructional practices with others (Hallam et al., 2014)

Leadership Support. Developing and sustaining professional learning communities in schools requires leadership and direction. School administrators can perform a vital role in developing these structures (Teague & Anfara, 2012). In addition to analyzing data, visiting classrooms, and reviewing school and systems goals, leaders must cultivate an environment of continuous learning that engages teachers in their professional learning every step of the way (Calvert, 2016). Administrators can also build teachers' capacity and direct that capacity toward improving student learning (Sergiovanni, 2000).

Principals have a crucial role in leading a PLC and balancing their roles from facilitator to participator. Over time, a principal who intentionally balances his or her leadership in this way creates a high-functioning team of teacher leaders who, in turn, become increasingly active, leading their teams of colleagues (Wilhelm, 2010). Principals need to be willing to work with school stakeholders to co-create effective strategies for strengthening teaching and learning (Spiller & Power, 2019).

The role of the principal has a tremendously significant impact on fostering leaders among teachers. There is a strong correlation between student achievement and principal leadership (Wilson, 2016). Principal leadership is crucial to helping teachers overcome the barriers associated with creating effective PLCs because of their ability to control school resources and influence organizational culture and expectations (DeMatthews, 2014). A principal cannot require reluctant staff members to be happy about participating in the PLC process, but a principal can require their full participation (DuFour, 2015). Administrators have the critical opportunity to build teachers' capacity and direct that capacity to improve student learning (Sergiovannni, 2000). Principals need to understand that they set the tone for professional and personal interactions within their schools (Vincent, 2012).

School leaders demonstrate solid instructional leadership and visionary stewardship for continuous school improvement. They play a critical role in developing and communicating a shared vision, shaping a trust culture, supporting and monitoring collegial learning (Wang, 2016). Principals do not have to have all the answers about improving their schools. Still, they must ask the right questions and create various structures and processes to engage the staff in the considerations of those questions (Dufour, 2015). Even the most competent leaders will struggle to bring about substantive change without the support of people willing to champion that change. Leadership needs to keep the school focused on shared purpose, continuous improvement, and collaboration (Kruse et al., 1994). When school administrators schedule regular PLC meeting times into a teacher's workday, it demonstrates their commitment to supporting the PLC process and goals (Rasberry & Mahajan, 2008).

Data-Driven Decision Making

With the focus on high-stakes accountability, educational reform has seen a rise in the promotion and use of data for instructional decision-making over the last decade. Often, teachers analyze data to help drive their instruction. How they utilize the data, the nature of the assessments, and teacher beliefs all come into play, leading to various ways to use data (Little, 2012). Instructional changes based on data often focus on struggling students, which can raise some equity concerns. Often, schools do not put appropriate time into professional development on how to use data. The general absence of professional development has hampered teachers' efforts to use data, as well as their confidence in doing so (Datnow & Hubbard, 2015).

There are two types of data, soft and hard. Soft or qualitative data refer to information about students learning and instruction gained by observing student and adult actions in and out of classrooms. Soft data can consist of information about the school, the teachers, support staff,

and currently utilized instructional strategies. Hard data are quantifiable; they are stable and are not changed significantly by how they are collected (James-Ward et al., 2013). The most common form of hard data used in schools is from student assessment results.

Management of Data. Assessment data can help inform how teachers plan their lessons, identify concepts for re-teaching, and differentiate their instruction (Hamilton, 2009). How teachers use assessment data to drive their instructional practice and the factors that shape their decision-making remain unclear (Coburn & Turner, 2011; Little, 2012), in part because there is relatively little research on this topic. Data-driven decision-making requires that we have in place a comprehensive process that recognizes the interconnected nature of educational methods, collects, and analyzes relevant data, and presents it in such a way that it can inform decisions (Jones, 2015).

Understanding and Usage. There are many benefits for schools to use data effectively: (a) leaders hold schools accountable for student progress, (b) teachers may improve instructional decision-making, and (c) students may achieve more success in learning (Schildkamp et al., 2012). Data in schools' context is systematically collected and organized to represent some schooling aspect (Schildkamp & Poortman, 2015). In schools across the country, time is set aside for teachers to examine data together in PLCs. However, research increasingly demonstrates that giving the teachers access to data and scheduling time for them to meet is not enough. To generate professional learning and instructional improvement needed to improve learning opportunities and a more in-depth understanding of specific content areas will require more time and resources (Horn et al., 2015).

The Common Core State Standards across the various content areas present a vision for student learning that challenges educators across the country to make right on reforms that

promise to strengthen teaching practice and raise student achievement (Christman et al., 2016). One of the most prominent and widespread of these reforms is the use of data to inform instruction (Boudett et al., 2005). Data-based decision-making has become increasingly important. Schools and districts are held more and more accountable for the education they provide.

Professional development in data-based decision-making is urgently needed and is essential for improving schools' quality (Desimone, 2009). However, professional development is often ineffective in enhancing the receiver's knowledge, skills, and attitude. How teachers collaborate around data use has not been explored extensively (Datnow et al., 2013). Teachers need guidance to effectively administer, score, interpret and analyze the data, as well as to utilize the data in making instructional changes (du Plessis, 2013)

Understanding and using data can significantly affect student achievement if implemented with efficiency within a PLC. Without a transparent process for managing the data, teachers and administrators will continue to become more frustrated and less inclined to use the information collected. Anderson et al. (2010) discussed the conditions needed, such as accessibility and timeliness of data, staff capacity, time, culture, and district and state policy support of data use as influences in data management. As teachers review data, they should be mindful not to use the data to make final decisions about student learning. Instead, they should use the data to drive instructional strategies to help improve students' academic progress (Davidson and Frohbieter, 2011). Overall, data can drive professional development, school-wide initiatives, curriculum development, assessment, and teaching.

Conclusion

Based on the literature review, there was ample information to delve deeper into the problem of practice at Coronado Elementary School and discover methods or ideas to improve student achievement. Professional learning communities lend themselves to collaborative sharing of ideas and work to better any school's instructional practices. With the focus on learning, the PLC model gives the notion that their organization exists to ensure that all students gain the essential knowledge, skills, and dispositions of each unit, course, and grade level (DuFour et al., 2016). Collaborative teams in a professional learning community work interdependently, day in and day out, to focus on the learning of each student—skill by skill—to improve their professional practice and, by doing so, continually improve learning levels throughout the school and school district (Eaker & Frizziellie, 2017).

In the PLC process, teachers will act as change facilitators for each other, supporting the adoption of new practices through peer coaching and feedback (Hord, 2004). When the learning of teaching is done collaboratively and teachers' everyday work becomes the source for professional learning, it has a lasting effect on classroom practice (Donohoo & Mausbach, 2021).

Establishing protocols, processes, and procedures within collaborative teams and encompassing the many facets of shared leadership, shared personal practices, and a focus on results will be critical ingredients in empowering teachers to contribute to their schools' teaching and learning process. Professional learning communities are designed to determine what students will learn and develop a space for teachers to decide how to respond when they do not learn (Hoaglund et al., 2014). Working in a PLC where effective collaborative teams analyze data generated from common student assessments and develop instructional practices and specific

intervention strategies has improved teacher performance and increased student achievement (Hallam et al., 2015).

In the following chapter, the researcher will present the methodology used to conduct the action research. It will cover the theoretical and conceptual frameworks, the action research study process, design, teams, interventions, and conclude with the data collection methods and data analysis.

CHAPTER 3

Research Design and Methodology

The purpose of this action research study was to determine teachers' perceptions of Professional Learning Communities and how they believed participation in a PLC impacts their professional development and classroom instruction in a Title I Elementary School. This study's research questions are: 1) How does an effective collaborative process among teachers in a Professional Learning Community impact teachers' perception of self-efficacy? 2) How does participation in a PLC impact teachers' instructional practices in the classroom? 3) What does the action research team identify as the essential components of developing an active PLC in an urban, Title I elementary school?

This chapter describes the study's research methodology. It includes discussions around the following areas: (a) theoretical framework, (b) conceptual framework, (c) action research, (d) action research design team, (e) action research implementation team, (f) action research timeline, (g) intervention, (h) research design, (i) contextual setting, (j) selection, (k) data collection methods, (l) data analysis, and (m) reliability and validity. The chapter culminates with a brief concluding summary.

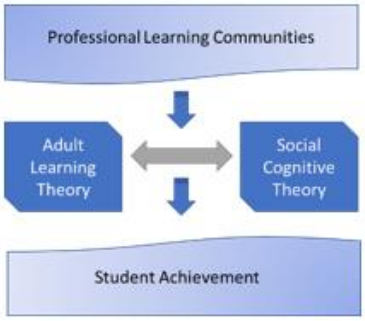
Theoretical Framework

This action research study combined two theoretical models: the Adult Learning Theory based on Malcolm Knowles's (1984) work and the Social Cognitive Theory, based on Albert Bandura's work (1977). Within these two models, the researcher used them as the framework to

allow a better understanding of how teachers perceived their role within a professional learning community.

Figure 1

Theoretical Framework



Adult Learning Theory

Teachers can learn from one another when immersed in the professional learning community model; the nature of that learning is different for individuals depending upon age and career stage. Teachers often bring varying levels of expertise and knowledge to their learning teams when working collaboratively, enhancing the PLC's effectiveness. Adult development theories provide a framework for understanding how adult learners are diverse from younger learners while also giving insight into devising effective professional development programs to meet teachers' needs at all phases of their careers (Trotter & Roberts, 2006). To understand how teachers learn from one another, one must first understand the concept of adult learning and how age impacts learning styles.

The collaboration of adults is critical to student achievement. Theorist Malcolm Knowles published his first article (1968) about his understanding of andragogy with the provocative title "Andragogy, Not Pedagogy." Knowles' concept of andragogy - 'the art and science of helping

adults learn' - 'is built upon two central-defining attributes: First, a conception of learners as self-directed and autonomous; and second, a conception of the role of the teacher as a facilitator of learning rather than the presenter of content (Merriam, 2004).

Previously, much research and attention had been given to the concept of pedagogy when teaching to children. Knowles recognized that there are many differences in the ways that adults learn as opposed to children. His thoughts surrounding andragogy sought to capitalize on the unique learning styles and strengths of adult learners. Knowles's theory of adult education suggested that adults succeed in situations where they are highly motivated, where they can participate in the learning process, and where learning content had practical applications (Manning, 2007). Adult learners retain information best when it is relevant and valuable (Serhat, 2020). Teachers often bring varying levels of expertise and knowledge to their learning teams when working collaboratively, enhancing the PLC's effectiveness.

Adult Learning Theory includes six assumptions of adult learners regarding how they learn and the origins of their foundational knowledge. These six assumptions include a shift from pedagogy, the art, and science of child learning, to have personal experience gained throughout a person's lifetime, intrinsic motivation to learn, and independence (Knowles, 1984).

Knowles's theory of andragogy identified six assumptions that teachers should make about adult learners. These assumptions in the andragogical model are different from the pedagogical model:

1. *The need to know.* Adults need to know why they need to learn something before undertaking to learn it.

2. *The learner's self-concept.* Adults have a self-concept of being responsible for their own decisions for their own lives.

3. *The role of the learner's experiences.* Adults come into an educational activity with both a greater volume and various experiences from youths.

4. *Readiness to learn*. Adults become ready to learn those things they need to know and be able to do to cope effectively with real-life situations.

5. *Orientation to learning*. In contrast to children's and youth's subject-centered orientation to learning (at least in school), adults are life-centered (or task-centered or problem-centered) in their orientation to learning.

6. *Motivation*. While adults are responsive to some external motivators (better jobs, promotions, higher salaries, and the like), the most potent motivators are internal pressures (the desire for increased job satisfaction, self-esteem, quality of life, and the like) (Knowles, Holton, & Swanson, 1998).

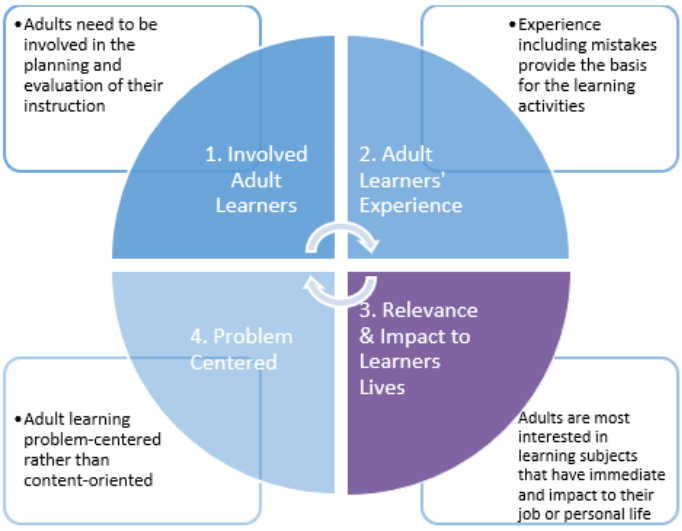
Knowles proposed a program-planning model for designing, implementing, and evaluating educational experiences with adults from these assumptions. For example, in the first assumption, Knowles mentioned that they become more independent and self-directing as adults mature. Tough (1979) found that when adults undertake to learn something on their own, they will invest considerable energy in probing into the benefits they will gain from learning it and the negative consequences of not understanding it. This motivation may be internal (teacher-driven) or external (policy or administration-driven) in the PLC context. Once the motivation to learn is activated, adult learners must assume control over the learning situation to achieve goals and objectives.

Adult learners must also self-monitor their learning during a process, using various metacognitive strategies to construct meaning from their experiences (Merriam & Bierema, 2014).

There are four principles of andragogy described in Adult Learning Theory. In a school setting, teachers can apply these four principles of Adult Learning Theory to their PLCs. The Four Principles of Andragogy are portrayed in Figure 2. First, Knowles (1984) suggested that adult learners be involved in planning and evaluating their learning. Second, he indicated that adult learners learn from their mistakes while providing a basis for learning activities. Third, Adult Learning Theory says adults are most interested in learning when they can immediately apply it. Finally, adults also prefer to focus on problem-solving rather than content-focused education.

Figure 2

Knowles Four Principles of Andragogy



Knowles (1984) outlined a program-planning model for creating, enforcing, and assessing adult educational experiences. In this model, the facilitator sets a climate for learning that physically and psychologically respects adult learners and then involves the learners in

planning, delivering, and evaluating their learning. He described adults as independent and self-directing, and their learning experiences should match. Knowles (1984) explained the importance of creating appropriate climates for adults, not just in the subject matter but also in the type of classroom they use. Adult learners need to feel respected and supported. Adult learners and educators need to create feelings of mutuality between them. Since adults are accustomed to planning other aspects of their lives, they need to plan their learning.

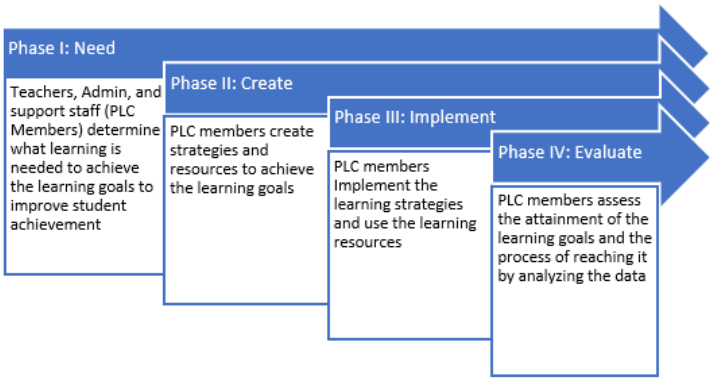
Adult learning is the process of adults gaining knowledge and expertise. (Knowles et al., 1998). Figure 3, titled "Adults Learners Controlling their Learning Process," provides a framework for professional learning communities. Knowles et al. (1998) describe four phases of the adult learning process. They are:

1) **Need**. Determine what learning is necessary to achieve goals.
2) **Create**. Create a strategy and resources to achieve the learning goal(s).
3) **Implement**. Implement the learning strategy and use the learning resources
4) **Evaluate**. Assess the attainment of the learning goal and the process of reaching it.

The four phases of the adult learning process serve as the categories or lenses used to help learners manage their learning process. The four phases' application can be applied in a PLC setting, as described below in figure 3. In phase 1, the teachers, administrators, and support staff will determine the learning goals. In phase 2, they will create the strategies and the use of resources to achieve their goals. In phase 3, they will implement the strategies and use the necessary resources to achieve their goals. Finally, in phase 4, they analyze the results.

Figure 3

Adult Learners Controlling their Learning Process



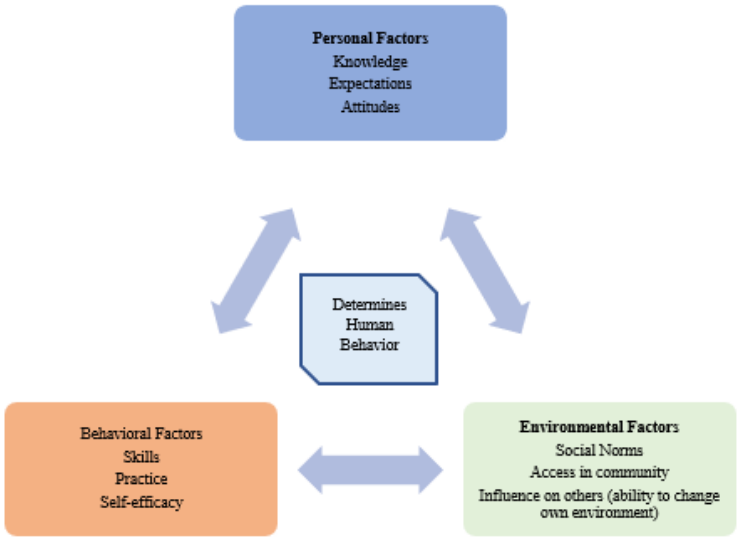
Social Cognitive Theory

The second theory that influenced this study was Bandura's Social Cognitive Theory (Bandura 1986; 2001). This theory stems from Bandura's earlier conceptualization of Social Learning Theory (Bandura, 1977). Social Learning Theory is rooted in psychology and behaviorism and initially focused on how people acquired behaviors by observing their external environment (See Figure 4). Thus, the Social Learning Theory would predict that a person's belief that behavior will result in a particular reinforcement will significantly influence that person's likelihood of enacting the behavior.

Bandura debated that the phrase "learning theory" emphasized the relationship between observation and behavior, consequences of behavior, and the enactment of imitative modeling. Therefore, Bandura (1986; 2001) reformulated and renamed Social Cognitive Theory. Social Cognitive Theory considers the role of (a) cognition, (b) self-efficacy, and (c) motivation in the social learning process and acknowledges the individual learner as entirely in control of his/her learning experience (Bandura, 1986). The focus for this action research will be on self-efficacy.

Figure 4

Social Cognitive Theory



Self-Efficacy. Bandura's (1977) work on self-efficacy has shown that people's behavior is influenced by how competent they perceive themselves to meet an expectation. Perceived self-efficacy is defined as people's beliefs about their capabilities to produce designated performance levels that exercise influence over events that affect their lives (Bandura, 1994). Self-efficacy beliefs determine how people feel, think, motivate themselves, and behave. Such views produce these diverse effects through four significant processes (Bandura, 1994). They include cognitive, motivational, affective, and selection processes. Although people might overestimate their abilities, Bandura believes optimistic self-efficacy is beneficial, especially in life that often presents disappointments, setbacks, impediments, and inequities (Crain, 2000).

Self-efficacy involves perceived confidence in the ability to enact a behavior to achieve the desired outcome effectively. According to Bandura, "given appropriate skills and adequate incentives, self-efficacy is a major determinant of people's choice of activities, how much effort they will expend, and of how long they will sustain effort in dealing with a situation" (Bandura,

1977, p. 49). Self-efficacy has a significant impact on behavior change because it determines and predicts actual behavior (Bandura, 1977). Bandura argued that self-efficacy is a more powerful predictor of behavior than past performance.

Concerning teacher self-efficacy, researchers have reported that teachers' personal efficacy beliefs affect their instructional activities and their orientation toward the educational process (Bandura, 1994). Teachers with high efficacy create mastery experiences for their students, whereas teachers with low instructional efficacy undermine students' cognitive development and students' judgments of their own capabilities (Gibson & Dembo, 1984; Cohn & Rossmiller, 1987). Self-efficacy includes both the self-perception of overall teaching competence and the teacher's beliefs about the task demands in a given situation (Tschannen-Moran et al., 1998). A teacher's efficacy beliefs depend on his or her mindset regarding the ability to improve. Teachers who believe their abilities are fixed have lower self-efficacy than those who think additional training and experience will improve performance. On the contrary, teachers who come to understand their deficits and think those deficits can be improved through additional training or reflection have a more resilient sense of teacher efficacy (Tschannen-Moran et al., 1998).

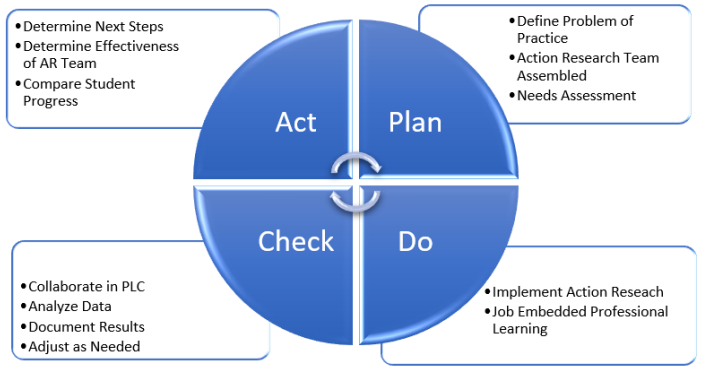
Conceptual Framework

The literature review, combined with the researcher's own experiences and insights, contributed to developing a conceptual framework for this study's design and conduct. In Miramar County Public Schools, the district's vision is a continuous quality improvement at all schools. Continuous Quality Improvement (CQI) is the management philosophy adopted by Miramar County Public Schools (MCPS). Underlying this philosophy are the essential practices, processes, and infrastructure necessary for the ongoing improvement of programs and techniques

found throughout the school district (MCPS, 2019). The curriculum includes W. Edward Deming's Continuous Quality Improvement philosophy (Deming Institute, 2021) and the characteristics and processes for implementing these behaviors and values at the team, school, and community levels to impact student achievement (Walton, 1986). Continuous Quality Improvement is a constant improvement mindset, and systems are continually analyzed and improved to ensure customer needs are met (MCPS, 2019). This study will utilize Deming's Plan, Do, Check, Act (Figure 5) as the conceptual framework.

Figure 5

PDCA Cycle for Continuous Improvement



Action Research

The researcher used an Action Research approach for the study to address the problem of practice. This method was an effective means of identifying issues in school settings. Action Research allowed teachers to be more flexible in their thinking, more receptive to new ideas, and more organized in their problem-solving approach (Johnson, 2008). A meaningful, relevant program of practice is situated within a professional educator's scope of work. It is specific to the setting, students, and context (Mertler, 2019). Unlike traditional social science research that frowns on intervening in any way in the research setting, action research demands some form of

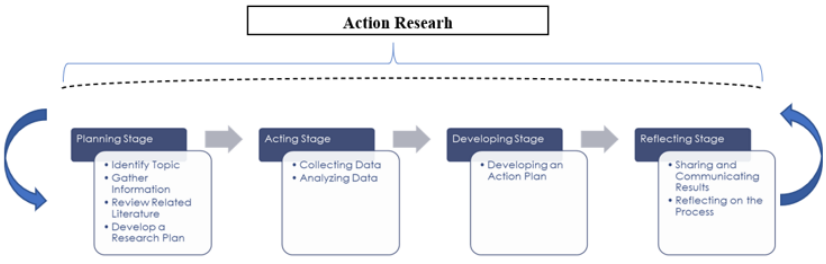
intervention (Anderson et al., 1994). Another strength of using an action research approach is that it permitted teachers to investigate their practice and to discover what will and will not work for their students in their classrooms (Mertler, 2019). Action research enabled the action research team to engage in a continuous examination, planning, acting, developing, and reflecting. Action research is recursive, a cyclical process that typically does not proceed linearly (Johnson, 2008).

This action research study provided a simple yet powerful cyclical framework that enables people to commence on a shared and productive inquiry process in a stepwise fashion and build greater detail into procedures as the complexity of issues increases (Bloomberg & Volpe, 2019). Mertler and Charles, 2011, developed a cyclical process composed of a four-stage approach (see Figure 6). The four stages are as follows: 1) the planning stage, 2) the acting stage, 3) the developing stage, and 4) the reflecting stage.

The focus was on identifying and limiting the topic, gathering information, reviewing related literature, and developing a research plan in the planning stage. In the acting stage, the focus was on collecting and analyzing data. Next, you have the developing stage, where the focus was to develop an action plan, and the reflecting stage, where the focus was on sharing and communicating results and reflecting on the process (Mertler & Charles, 2011).

Figure 6

Action Research Four-Stage Approach



In action research, many different data collection methods are used, including observations, interviews, focus groups, and journals, to name a few. Action Research was the most practical approach for this study because it allowed us to study a whole school situation to improve the quality of actions and results (Schmuck, 1997).

This Action Research study used a mixed-methods research design. The benefit of using this type of method lies in the fact that the consideration of both qualitative and quantitative types of data may provide a better understanding of the research problem than either type of data alone (Creswell, 2005). The quantitative data for this action research study comprised a set of surveys and questionnaires to generate a greater accurate understanding of the teachers' level of efficacy in the PLC. The action research team also included checklists, formative and classroom summative assessments, standardized test scores, and existing numerical data.

The researcher collected data through observations, individual questionnaires, focus group interviews, journals, existing documents, classroom virtual, and in-person visits for the qualitative data. He coded the data to develop themes and trends of those teachers participating in the PLC. The researcher also incorporated journal notes throughout the observations.

Action Research Design Team

The design team met for the first time in August 2020. Four people comprised this design team to include a school assistant principal, the local school technology coordinator, a district-provided math specialist, and the department chair over the grade level. The Assistant Superintendent was not present, but she shared some ideas via a Zoom session discussion. A PowerPoint presentation provided a brief overview of the action research process, the purpose of the study, and the description of the problem of practice. Design team members all agreed to help construct an action implementation plan that will allow us to capture the evidence using data and

professional feedback to improve their teaching practices. One member of the design team that did not participate as an Action Research Implementation team member is Ms. Linda Erikson. Ms. Erickson brings over 25 years of the elementary school experience. She has worked in multiple grade levels and has taught from early intervention students to high-achieving gifted students. She has earned teaching endorsements in reading, gifted, and English for students as a second language. Ms. Erickson currently serves as the school's Local Technology Coordinator. With virtual learning implementation, Ms. Erickson was instrumental in getting teachers trained in the latest technology and resources.

Action Research Implementation Team

After the action research design team's initial meeting, the fifth-grade teacher teams consisting of six fifth-grade content teachers and one gifted teacher were invited to discuss the action research study. It was essential to get the perspective from our gifted teacher, who does not always get a chance to participate in the grade-level collaboration meetings. The meeting was held via Microsoft Teams. We discuss the action research teams' role through a PowerPoint presentation and a few sample survey instruments via email. After our initial introductory meetings, ten participants volunteered to participate in the action research study. The team comprised of the following educators:

Ms. Lorna Belcher works as a math specialist from the district's Curriculum and Instruction department. Ms. Belcher is supporting the school for the second year. The math department assigned her to support the school when the district identified Coronado Elementary school (CES) as a Targeted Improvement School. In her role, she works with the teachers in the PLCs and offers individual coaching cycles. She brings over 20 years of experience as an elementary school teacher and instructional coach.

Ms. Anna Quintana works as the school's gifted teacher supporting fourth and fifth-grade students. She teachers both English Language Arts and mathematics. Ms. Quintana brings a wealth of knowledge to the team over twenty-nine years as an elementary school teacher. Ms. Quintana has been nominated three times for the annual Teacher of the Year award and was the recipient of the principal's end-of-year awards as the Outstanding support teacher of the year in 2017. Her students consistently score in the exemplary levels on the annual state assessments.

Ms. Dawn Jameson, a third-year teacher who has complimented the fifth-grade team since coming on board, was excited to participate in the study. She is very successful and always looking to grow in her craft. She began her courses for her gifted endorsement and contributed to the lesson planning for mathematics.

Another veteran teacher is Dr. Alexia Holmes. She brings over 18 years of school experience, having taught in multiple grades at the elementary school level. Dr. Holmes is in her sixth year of teaching in the fifth grade. She has led the team as the Department Chair for two years. She has multiple strengths, but she places a little extra work learning the math strategies that do not come as easy as reading. Dr. Holmes was selected as the school's Teacher of the Year in 2018.

Ms. Lorie Robinson is the school's instructional coach and brings over 14 years of the elementary and middle school experience. She is certified in elementary education kindergarten through fifth grade, math fourth through eighth, and has earned gifted and reading endorsements. Ms. Robinson is an exemplary teacher with a strong foundation in math and English Language Arts content knowledge. She has completed the district's Aspiring Leadership Program to become an assistant principal. The teachers enjoy her support as she takes time to work with them and is good at providing them with resources to help them grow as educators.

Another essential member of the team is Ms. Amelia Stratford, who serves as an Assistant Principal. She oversees grades 2 and 5. Ms. Stratford brings over 24 years of elementary school experience where she has held positions as a teacher, a grade-level chair, and math instructional coach. One of her strengths is that she understands the math curriculum and knows how to help teachers improve their teaching strategies. She is excellent at analyzing data and is the primary presenter on data-analysis during staff development and data talks sessions.

Next, we added Ms. Michelle Price, an eight-year veteran at the elementary school level. Ms. Price is a second-career teacher who served over 20 years in the United States Marine Corps. She brings a wealth of background knowledge and enjoys working with new teachers. Her military leadership background has allowed Ms. Price to serve as the grade-level department instructional leader representative and as the unofficial grade level mom. She has built strong relationships with her team and participates in professional development to grow in her field. She was also the recipient of the Teacher of the Year award this past year.

One of our most seasoned veteran teachers, Ms. Chandice Edwards, brings over 34 years as an educator. She has taught all grades from elementary to middle school. Her teammates call her "Mama E" for her vast knowledge of reading and social studies background. Ms. Edwards is a well-rounded educator who always makes teaching and learning look easy. She has a magical presence in the classroom and still enjoys teaching after all these years. She has been the designated lead lesson planner for the science curriculum.

Another key player to the fifth-grade team is Ms. Kennedy Preston. She has over five years' experience but has performed like a seasoned veteran with many more years of experience. She enjoys teaching and brings animation to the class that truly engages students and

makes learning fun. She has played a significant role in lesson planning for English Language Arts and writing. She is also part of the cluster's vertical team member for literacy.

Lastly, we have our newest teacher on the team who is into her second year of teaching. Ms. Daisy Lind joined us this year after working at a different school during her first year. Although Ms. Lind is a rookie teacher, she is confident and contributes to the professional learning communities by researching and sharing resources with her team. One aspect of Ms. Lind's teaching style is that she finds ways to connect with the most at-risk students and pushes them to work and gain confidence in their learning. One of her strengths is in mathematics, and she also contributes to the math lesson planning for the team.

Action Research Timeline

The AR Team began by reviewing the study's purpose during the initial steps, including the three research questions. The team defined what action research is and explained the process of conducting the study at our school. The researcher shared what they intended to examine over the next five months and established the proposed timelines to cover the study. The AR team learned about the action research process of planning, acting, developing, and reflecting, as described by Mertler (2019).

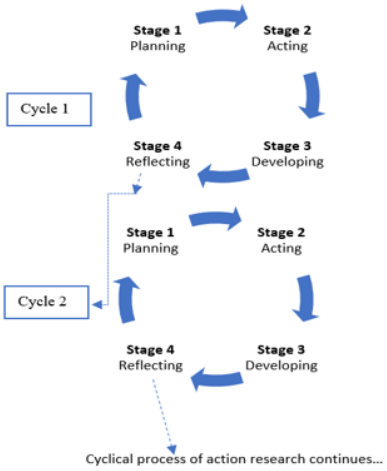
During the first meeting, participants completed the Teacher Sense of Efficacy Scale questionnaire to establish a baseline for their efficacy level and reviewed research literature on the effectiveness of incorporating a PLC in a school setting. The researcher explained that the design team recommended that the fifth-grade students be given a 20-question pretest on the unit for decimals. Lastly, the researcher scheduled a focus group meeting to conduct a series of questions to get feedback from the AR Team. Based on the information received, the action

research team oversaw the implementation of interventions designed to support the collaborative planning process more effectively within the PLC.

The action research plan followed the three cycles recommended by Mertler, 2019. As mentioned in chapter 1, action research is cyclical in nature (Mertler & Charles, 2011). Although action research has a clear beginning, it does not have a clearly defined endpoint. With its cyclical and spiraling nature, the process of action research is portrayed in Figure. 7 below.

Figure 7

The Process of Action Research. Adapted from Mertler (2019).



The design team recommended using the following periods as a study cycle:

- Cycle 1- Sept. 3 – Oct. 7
- Cycle 2 – Oct. 19 – Nov. 20
- Cycle 3 – Nov. 30 – Jan. 15

The timeline for the action research study is listed below:

Table 1

Action Research Timeline

Action Research Timeline	
March 2020	• Obtain IRB Approval
May 2020	• Analyzed data

	○ Conducted a Title I needs-assessment analysis to determine root causes using trend data to establish critical areas to focus on for the upcoming school year
July – August 2020	• Met with Action Research Design and Implementation Team • Scheduled first action research meeting ○ Established team norms/protocols/meeting dates ○ Explored the proposed problem of practice, research questions, and action research plan of action ○ Discussed and signed the participant consent forms • Solicited feedback ○ Reviewed current and 3-5-year historical data relevant to the problem ○ Distributed research articles on implementing effective professional learning communities, shared leadership, and using data to help drive the PLCs ○ Developed a plan to include job-embedded professional learning and provide professional learning for the team
August 2020	○ Conducted a deep-dive data analysis using various data protocols of the mid-year district assessments and unit common assessments ○ Due to COVID-19, all end-of-year district assessments, and State's end-of-grade Milestones Assessments, were canceled. ○ Monitored our action plan and adjusted as necessary
September - October 2020	• Act and Observe (Cycle I) ○ Administered the Teacher Sense of Efficacy Scale Questionnaire (Pre) ○ Administered the Collaborative Team implementation Self-Assessment (four parts) ○ Administered a pretest to all fifth-grade students ○ Read PLC related literature ○ Reflected on the first cycle, to discuss the progress of the implementation and interventions
October -November 2020	• Act and Observe (Cycle 2) ○ Conducted a focus group interview ○ Administered the post-test to all fifth-grade students ○ Instructional Coach and math specialist support ○ Read PLC related literature ○ Administered a PLC survey ○ Observed the effects of the implementation plan through a mixed-methods approach ○ Reflected on the impact as a foundation for further planning and action
November 2020 -January 2021	• Act and Observe (Cycle 3) ○ Analyzed the pre-/posttest results ○ Administered an individual reflection open-ended questionnaire ○ Read PLC related literature ○ Administered post surveys for TSES ○ Administered post-survey for CLT self-assessment ○ Observed the effects of the implementation plan through a mixed-methods approach ○ Reflected on the impact as a foundation for further planning and action

Intervention Plan

Enhancing our professional learning communities throughout the school was the focus of our action research. The first step was drafting a proposal to present to the Internal Review Board at the University of Georgia. A key challenge in seeking board approval was explaining the process of conducting research virtually without gathering people in face-to-face groups due to COVID-19. After a few adjustments to the original plan, the IRB for the university approved the proposal for this study.

Next, during a school leadership summer retreat in July 2020, we met to plan and collaborate on our student achievement goals for the new school year. We discussed the purpose of this action research, and we read some corresponding literature about PLCs. During this meeting, I met with the fifth-grade department chair, the math instructional coach, and the fifth-grade assistant principal to discuss the proposed action research study. They expressed interest in participating in the research project and were excited to conduct such a review using our teachers. The fifth-grade chair was very interested because she has witnessed teachers' turnover on the grade level over the last three years. She expressed that the novice teachers on the grade level have not contributed to the collaborative planning sessions as the previous teachers had done. She felt this would be a great time to revamp our current practices and procedures.

During preplanning week for the teachers, in late July, the researcher met briefly with the fifth-grade teachers and shared some brief details about the action research and informed them that he would like to work with them within their PLC setting and explore the problem of practice. Another critical addition to the action research team is the district's math specialist, who supports our teachers three times a week. The math specialist came on board last school year to support our school-wide instructional plan when the school's student achievement

rankings fell below the lower 10% of elementary schools within the Miramar County Public Schools (MCPS). The district classified Coronado Elementary Schools as a targeted school. As a former math teacher and instructional coach, she was enthusiastic about being part of this action research team and was looking forward to joining the team.

Finally, the researcher spoke with his district supervisor, one of the assistant superintendents, and she offered her assistance to be part of the design team. As a former elementary school principal for over ten years, she brought a significant amount of experience working with professional learning communities. As a district leader, she also provided feedback from the district office's overall goals.

Job-Embedded Learning

During summer 2020, due to COVID-19, the school district provided all professional development sessions digitally. Many teachers attended the math boot camp sessions as they learned new research-based strategies to help them as they plan for the new school year. In July, the fifth-grade teachers met to dive deeper into student data, create their road maps, and establish their PLC goals.

With the delay in opening the school year by one week, the teachers had an extra week to learn the latest strategies to deliver instruction via digital learning. The instructional coach, a math specialist, assistant principal over math, and other district-led learning opportunities, provided the teachers with intense training as a collaborative group. The fifth-grade instructional team leader and the AP and instructional coach met with the grade-level teachers to set up norms and protocols. They reviewed the work conducted over the summer to assure its alignment with the Academic Knowledge and Skills (AKS), the established and adopted curriculum of MCPS.

Over the next five weeks, the AR Team met during their Collaborative Learning Team sessions to analyze the AKS to ensure the alignment of summative/formative assessments and instruction. The teachers developed lesson plans utilizing the Balanced Numeracy Framework. Balanced Numeracy is a framework that incorporates a diverse range of organizational structures, assessments, and instructional practices that are intentional and responsive to students and curriculum. Balanced numeracy provides students opportunities to uncover, construct, and apply mathematical understandings (BC Numeracy Network, 2021).

The AR team engaged with their colleagues in the ongoing exploration of four critical questions that drove the work of the collaborative learning teams (PLC) meetings:

1. **Goals/Expectations**: What do we expect our students to learn?
2. **Assessment**: How will we know they are learning?
3. **Intervention**: How will we respond when they do not learn?
4. **Enrichment:** How will we respond if they already know it?

Coaching Sessions and Data Analysis

Coronado Elementary School has one instructional coach. She has been at the school for three-plus years. When she first arrived, her primary duties were that of a math instructional coach, but after budget cuts, we lost the Reading instructional coach, and she assumed both roles. For the school year 2020-2021, The instructional coach had planned to conduct coaching cycles with individual teachers, specifically new teachers, including observations, goal setting,

modeling, implementation, and feedback. One of her main focuses is supporting the teachers with lesson planning and analyzing student achievement data.

The instructional coach has also collaborated with the district's instructional math specialist to provide targeted support for the fifth-grade teachers through informal classroom observations, reviewing assessments and instructional alignment, and leading instructional planning and professional learning.

As part of the Weighted School Assessment (WSA) Targeted School Plan, we continued to have the administrative team and coaches lead teachers through deep-dive data analysis. We have conducted data sessions once a month during our PLC planning times, focusing on Math student achievement data. The AR team also used common assessments to analyze student academic performance. Unfortunately, the district had canceled its district assessments due to COVID-19. These assessments have been used over the years and have provided keen insight into student progress across the content areas. With the use of specific data protocols from the National Reform Faculty (National School Reform, 2019), for example, "The Five Whys for Inquiry," "Data-Driven Dialogue Protocol," "Atlas Protocol," "Learning from Student Work," etc., teachers have had the opportunity to engage in in-depth analysis. After identifying the AKS's strengths, weaknesses, misconceptions, and assumptions, the teachers developed a plan of action to review and reteach the weakest AKS.

After the first cycle of inquiry, the AR team conducted a data dig to take a deeper dive into analyzing the data and adjust or make changes to their instructional practices and or strategies. They used the post-test results on the decimal's unit tests to see if the interventions

helped students increase their pretest scores. We gathered data to see the AR team study's progress through observations, journaling, and meeting minutes.

PLC Literature Review and Focus Group Discussions

Throughout the action research study, members of the AR team engaged in further professional development by reviewing related literature about PLCs. The goal was to read one to two articles a week. By the end of the first cycle, we conducted a focus group discussion using guided questions to reflect on their different perspective received from their readings.

PLC Surveys and Questionnaires

The researcher provided a survey to gather the teachers' perceptions from the readings. The survey examined factors within a PLC, like critical elements, human resources, and structural conditions. Due to time restraints, a one-on-one interview was not feasible, so the researcher decided to offer a written questionnaire to the AR team members.

Table 2

Action Research Intervention Plan

Intervention	Action Research Team Activities	Outcomes/Connection to the problem, theoretical framework	Timeline	The data collected based on the intervention?
Job Embedded Learning	The teachers participated in ongoing professional development through their PLCs and Titans Tuesday PD Sessions.	The team members learned through real-time training to increase teacher efficacy and teaching practices	September 3- December 20, 2020	Feedback from Focus group and teacher individual interviews, classroom and PLC observations, student data of a math pre/post unit test
Mentor Coaching Sessions	The Instructional Coach, Math Specialist, and AP	The teachers developed new strategies to help improve their	Sept. 3- December 2020	Feedback from individual interviews,

	provided support to teachers as needed	classroom teaching practices		coaching classroom observations, and journal notes,
PLC Literature Review and Focus Group discussions	The teachers participated in a literature review on the core foundation of working within a PLC and shared feedback during focus group interviews	The teachers gained a better understanding of their role working collaboratively with other members of the PLC	Sept. 3, 2020-Jan. 2021,	Focus group discussions Teacher Sense of Efficacy Scale PLC Survey CLT Self-assessments

The Research Design

Focus Groups

This action research study used a focus group meeting to gather feedback about participant perceptions of working in a PLC environment. A focus group is a name given to simultaneous interviews of people making up a relatively small group, usually no more than 10 to 12 people (Leedy & Ormrod, 2013). One strength of focus groups is that this method is socially oriented, studying participants in an often more natural and relaxed atmosphere than a one-to-one interview (Bloomberg & Volpe, 2019).

The focus group consisted of the AR team participants who consented to participate in the action research study. Due to COVID-19 safety measures, we met as a large group via the Zoom platform. Zoom is a cloud-based video conferencing service used to meet with others virtually - either by video or audio-only or both, all while conducting live chats - and it lets you record those sessions to view later (Zoom Video Communications Inc., 2020). The researcher devised a set of 10 guiding questions, with opportunities to ask follow-up questions. The data collected from the meeting provided different perspectives from the members' views about the PLC process. We utilized Zoom's recording features and recorded the meeting, which lasted approximately an hour and 15 minutes. A member of the AR Team transcribed the recording.

She coded the speakers within the focus group to prevent identifying any of the participants. The researcher manually coded and analyzed all focus group transcripts.

Interviews

Interviews are conversations between the practitioner-researcher and participants in the study in which the teacher poses questions to the participant (Schmuck, 1997). Initially, the goal for this study was to incorporate a semi-structured interview. This method will allow the researcher to ask several "base" questions and have the option of following up a given response with alternative, optional questions depending on the situation (Mertler, 2019). However, due to time restraints and unforeseen circumstances due to the COVID-19 pandemic, the researcher could not conduct one-on-one interviews in person. Instead, he emailed all participants the guiding questions, and the members agreed to complete them electronically. The researcher manually coded and analyzed the responses from the questionnaire.

Surveys

In contrast to the qualitative data gathered from the study, the researcher also incorporated quantitative data as part of the study. Quantitative data collection techniques include surveys, questionnaires, checklists, and rating scales, as well as tests and other formal types of measurement instruments (Mertler, 2019). One critical type of data collection is the use of surveys. A survey refers to a collective group of quantitative data collection techniques that involve administering a set of questions or statements to a sample of people (Mertler, 2019). For the AR study, we used three survey tools to collect data: The Teacher Sense of Self-Efficacy Scale, the Collaborative Learning Teams Self-Assessment, and the PLC perception survey.

Classroom and PLC Observations

Observations as a means of collecting qualitative data involve carefully watching and systematically recording what you see and hear going on in a particular setting (Schuck, 1997). Throughout the study, the researcher conducted classroom and PLC observations to observe specific behaviors, reactions, and interactions among the collaborative group. He utilized a data journal to record the field notes of the observations. Data journals can provide valuable information on the workings of a classroom (Mills, 2018). He used a more structured observation instrument during the classroom observations to focus on more specific teaching practices.

Researcher's Data Journal

The researcher kept a data journal throughout the study in the form of field notes. Field notes are written observations of what you see taking place in the classroom or observation area (Mertler, 2019). 1) He used the data journal to record in the following settings: 1) the collaboration sessions in their PLCs, 2) AR team meetings, and 3) the focus group sessions. Data journals can similarly provide practitioner-researchers with the opportunity to maintain narrative accounts of their professional reflections on practice (Mertler, 2019). These journaling notes allowed the researcher to jot-down real-time observation notes without any biases or predeterminations of the settings.

Contextual Setting

This action research case study examined several components of the school's collaborative learning teams working within a PLC. To gain significant insight into our problem of practice for this action research, we designed the study to be a single case study within the school setting. A case study is a qualitative methodology for providing an intensive description and contextual-bounded analysis of a social phenomenon (Blomberg & Vogel, 2019). Although

this study is a small sample of a school within the District, the findings may inform other school districts in incorporating a PLC within their schools.

Selection of AR Team

Although the action research team reviewed current practices and procedures developed in Miramar County Public School's framework, the study focused on one grade level. For this study, we used a group of teachers in a fifth-grade level setting along with an instructional coach, a math specialist, and an assistant principal. This selection of participants provided a diverse background of teaching styles, years of experience, and knowledge of working in collaborative settings. The researcher chose the fifth-grade level because of its curriculum's rigor level and measured how well the teachers and curriculum prepared them to transition to middle school.

Data Collection Methods

Quantitative methods informed this qualitative action research case study. Multiple data collection sources were triangulated throughout the study. The AR team planned three cycles within the action research to generate a comprehensive data collection. The data collection allowed the team to identify ways to improve its current practices within the PLC and helped design and revise interventions to address the study group's needs.

In the first cycle, we analyzed feedback from a focus group interview consisting of seven fifth-grade teachers, an Instructional Coach, a district-provided Math Specialist, and an Assistant Principal who oversees the fifth-grade team. To document some student performance results, we administered a math pre and post-test on decimals. With the math unit being a five to six-week unit, we believe it provided a substantial analysis to compare results based on the teacher practices in the PLC setting. We administered the post-test toward the beginning of the second cycle. The AR team also reviewed the research literature on PLCs and participated in job-

embedded professional development and web-based offerings at the district level. At the end of the third cycle, the AR Team participants provided information and feedback through a set of instruments that captured detailed information about their beliefs by participating in this action research.

One instrument used was the Teacher's Sense of Efficacy Scale. The AR Team completed the survey in August 2020 and again in January 2021 to determine if the interventions influenced the fifth-grade teachers' self-efficacy. This Teacher Efficacy Instrument, developed by Megan Tschannen-Moran, College of William and Mary, and Anita Woolfolk Hoy, the Ohio State University, focused on three correlated factors: Efficacy in Student Engagement, Efficacy in Instructional Practices, and Efficacy in Classroom Management. (Tschannen-Moran & Hoy, 2001).

After the first cycle of interventions, the action research team reviewed and analyzed the focus group discussions, interviews, and Collaborative Learning Team self-assessment instrument responses. The CLT Self-assessment focused on team structures, team accountability, team norms, and continuous quality improvement within a collaborative learning team (MCPS, 2019). The Design Team recommended using only one section of this four-part instrument. They believe that concentrating on one area versus four would provide a richer understanding of their perspective.

During the second cycle, we analyzed the data, and the interventions provided and recommended other interventions. We also utilized the instructional coach and the math specialist to provide mentor coaching cycles and classroom observations. We continued with job-embedded learning and literature review articles on PLCs. The researcher also kept field notes by virtually attending the PLC sessions every Thursday.

Going into the third cycle, we collected data through classroom observations, literature review articles on PLCs, and journaling notes taken during the PLC sessions on Thursdays and the job-embedded staff development for two Tuesday afternoons per month. At the end of the third cycle, the researcher administered a survey about teachers' perceptions of working within a PLC. The survey examined factors within a PLC, like critical elements, human resources, and structural conditions. (Kruse et al., 2017).

Table 3

Action Research Team Interventions

Research Question	Data Collected	Analysis Approach	Timeline
Q1. How does an effective collaborative process among teachers in a Professional Learning Community impact teachers' perception of self-efficacy?	Teacher Sense of Self-Efficacy Scale Collaborative Learning Teams Self-Assessment Pre-post Interviews Questionnaire 5th Grade Teachers Focus Group Discussions with AR Team	Comparing Pre and Post data from the surveys Compared pre-and post-data from one part of the four-part instrument Transcribed and Coded for further analysis Transcribed and Coded for further analysis	Administered Survey in September 2020 and again in January 2021 Administered Self-Assessment (SA) in September 2020, then again in January 2021 January 2021 September 2020-January 2021
Q2. How does participation in a PLC impact teachers' Instructional Practices in the classroom?	PLC Survey Interviews with individual teachers, coaches, and AP	Transcribed and Coded for further analysis	January 2021 November 2020-January 2021
Q3. What does the action research team identify as the essential components of developing an active PLC in an urban, Title I elementary school?	End of study Perception Survey Interviews with AR Team	Transcribe and Code for further analysis	January 2021

Data Analysis

Coding

The researcher followed coding for data analysis to gather information from the focus group discussions' final transcripts and the personal interview questionnaire. A process named *data reduction* is the process of reviewing all data into common categories or classifications. To accomplish the data reduction, they use a coding procedure, which involves attaching meaning to a particular scene, document, or event (Glanz, 2014). Throughout the data collection and analysis, the challenge was to make sense of the large amounts of data, reduce the volume of information, identify significant patterns, and construct a framework. Merriam (1998, 2009) cautions researchers to make data analysis and data collection a simultaneous activity to avoid the risk of redundant, unfocused, and overwhelming data.

Statistical Analyses

For the Teacher Sense of Efficacy Scale, CLT Self-Assessment, PLC survey, and students' pre and post-test scores, the researcher utilized *descriptive statistics* to describe and summarize the data. Two of the most common ways to represent data statistically are mean and standard deviation (Glanz, 2014). The mean is synonymous with the average score. It indicates how a typical person scored on a test or survey. The researcher also used the *t-test* to determine the significance of a difference between the means of two groups (Glanz, 2014).

Overall, the researcher's approach was to produce several clusters, patterns, or themes linked together from the focus group transcriptions and the open-ended questionnaire. He used a manual process to identify these areas and color code and organized them in a manner that would best provide an in-depth understanding of the data. The researcher moved forward and thought about this research's broader implications based on the analysis and synthesis. He was able to

formulate several conclusions and developed various practical and research-related recommendations.

Reliability and Validity

In qualitative research, the most frequently used standards for excellent and convincing research are validity and reliability. If research is valid, it the extent to which the data that have been collected accurately measure what they claim to measure Mertler, (2019). If work is reliable, then two researchers studying the same phenomenon will develop compatible observations (Bloomberg & Volpe, 2019). The researcher kept a research journal to capture accuracy in the process to address researcher subjectivity and credibility. The researcher collected multiple sources of data and compared them through data triangulation.

Data Triangulation

Triangulation addresses issues of trustworthiness in qualitative research. The researcher triangulated the data using multiple sources and methods (Bloomberg & Volpe, 2019). The AR team provided debriefing on the various data collected throughout the study. The researcher solicited the participants' perception feedback regarding the credibility of the study's findings, analyses, and interpretations. By incorporating these multiple data-gathering techniques, the AR team developed a more complex understanding of the problem of practice.

Trustworthiness

The validity of research data deals with how the data collected accurately measure what the purport to measure (Mills, 2018). When dealing with the validity of qualitative data, researchers are concerned with the trustworthiness—for example, the accuracy and believability—of the data (Mertler, 2019). The researcher established the reliability of the data collected by incorporating multiple techniques and data sources that enhanced the validity of the

data collected. The action research team reviewed the research study's accuracy by analyzing interview transcripts and journal notes. The AR team members were comfortable participating in the focus groups and during the collaborative sessions during their PLCs. To ensure that the researcher's biases did not influence how the participants' perspectives were portrayed and to determine the findings' accuracy, the researcher made use of "member checks." Member checks entail sending the transcribed interviews or questionnaire summaries to the participants for their review. (Bloomberg & Volpe, 2019).

Subjectivity In Research

As a former middle and high school Math teacher, I have first-hand knowledge of the challenges faced by classroom teachers to provide a rigorous and robust curriculum to students daily. Along the path, I have had the privilege to teach in all three levels from elementary, middle, and high school. From each of those experiences, I have worked in settings where teachers collaborated in teams to schools where I did not collaborate with others on a routine basis and felt more like an independent contractor.

During my early years as a beginning teacher, I was a non-traditional candidate. Upon graduation from college, I transitioned from the US Navy to become a middle school math teacher. I had to learn at a rapid pace, understand the pedagogy, and understand how to manage a classroom full of adolescents. The most effective training I ever received was provided by a grade-level math chairperson. She mentored me for two years, informed me of professional development opportunities to grow as a math teacher, and had me conduct classroom observations to learn and develop as a teacher.

Another critical support from this grade-level chair was that she held weekly collaborative planning sessions. I learned from others, and until today, those small group joint

sessions have shaped my teaching and administrative practices. So, as I moved forward with the AR team, I remained mindful of my own biases of working within a collaborative group. As the school principal, I was even more conscientious that I allowed the AR team members to feel comfortable participating and providing honest feedback without worrying about any negative feedback. I used a reflection journal to help me reflect on my thoughts as we proceeded with the study.

Chapter Summary

In summary, this chapter provided a detailed description of this study's research methodology. An action research design was employed to determine teachers' perceptions of Professional Learning Communities and their beliefs about participation in a PLC and its impacts on their professional development and classroom instruction in a Title I Elementary School. The participant sample encompassed nine schoolteachers and one administrator. The various data collection used included a focus group, surveys, and questionnaires. The action research team reviewed the data looking for emerging themes. The researcher conducted an in-depth literature review to devise a theoretical and conceptual framework for the study's design and analysis.

In the following chapter, the researcher will present the case to include the context, problem framing in the context, problem framing on the site, and the overall story and outcomes gathered from the action research.

CHAPTER 4

The Case

The purpose of this action research study was to determine teachers' perceptions of Professional Learning Communities and how they believed participation in a PLC impacts their professional development and classroom instruction in a Title I Elementary School. This chapter begins with an overview of the context and background that frame the study. Then, the problem framing based on the study site includes in-depth knowledge about the location and history. This chapter will also detail the data gathered from interviews, focus groups, surveys, and open-ended questionnaires. The chapter concludes with the researcher's journal notes and a summary of the chapter.

The Context

Coronado Elementary School[1] (CES) is a Title I school located in the Southeastern United States, with fewer than 1,000 students and a free and reduced lunch meal (FRLM) rate greater than 80%. The school has an ethnically diverse student population consisting of 40% Black, 39% Hispanic, 8% White, 8% Asian/Pacific Islander, and 3% Multi-Racial. CES is one of 80 elementary schools within Miramar County Public Schools[2] (MCPS), a prominent award-winning urban school district in the Southeastern United States, serving over 170,000 students.

Over 110 staff personnel are employed at the school, with over 85 certified teachers. The educators teach a diverse student population consisting of over 850 regular education students

[1] Name is a pseudonym.
[2] Name is a pseudonym.

and over 75 special education students. We serve approximately 350 students under The English for Speakers of Other Languages (ESOL) program. It provides academic, social, cultural, and support services to students who are limited in English proficiency (LEP). CES recognizes its students' linguistic and cultural diversity and encourages all students to preserve their native cultures while developing an awareness of U.S. culture. Also, about six percent of the student body is classified as gifted students. These students are pulled out of their homeroom classes and attend classes with gifted certified teachers for reading and math. We also serve over 16 percent of the students classified as students with a disability.

Problem Framing in the Context

As the instructional leader of the school, I am currently in my fifth year at CES. Overall, I have 12 years as a principal, having led both elementary and middle schools. As a principal, 11 out of the 12 years have been in Title I schools. The need for continuous improvement has been a commonly observed theme across the schools and districts.

During the years working in school settings, what has been a constant among the many classroom and teacher team observations, has been the direct correlation between student achievement and collaborative planning teams. From the collaborative sessions' observations and data analysis, there was ample evidence to show that those teams who worked more closely and had structured processes and procedures often showed higher student achievement.

Many schools refer to these teams as Professional Learning Communities (PLC). Hord (2009) describes schools' primary purpose as student learning. The most significant factor in whether students learn well is teaching quality. Further, teaching quality is improved through continuous professional learning. The PLC process's potential to improve schools has repeatedly

been cited not only by researchers but by professional organizations that serve as advocates for teachers and principals (Dufour & Marzano, 2011).

In the Spring 2019 State Assessments for End of Grade, the test results showed CES students in grades 3-5 as achieving the following results in mathematics compared to statewide and district results:

Table 4

CES Vs. State and District State Assessments End of Grade Results, Mathematics 2018-2019

State Assessments End of Grade
Mathematics 2018-2019

Statewide Schools Grades 3-5							
Grade	**Number Tested**	**Mean Scale Score**	**% Beginning Learner**	**% Developing Learner**	**% Proficient Learner**	**% Distinguished Learner**	**% Proficient Learner and Above**
3	128,610	525	17.5	30.8	38.6	13.2	51.8
4	132,967	525	17.7	33.1	35.7	13.5	49.2
5	135,855	517	19.4	39.8	37.3	13.5	50.8
Miramar County Public Schools Grades 3-5							
Grade	**Number Tested**	**Mean Scale Score**	**% Beginning Learner**	**% Developing Learner**	**% Proficient Learner**	**% Distinguished Learner**	**% Proficient Learner and Above**
3	12,796	535	13.3	26.5	43.2	17.0	60.2
4	13,556	540	12.6	26.8	39.9	20.7	60.6
5	14,172	533	14.2	33.2	32.7	19.9	52.6
Coronado Elementary School Grades 3-5							
Grade	**Number Tested**	**Mean Scale Score**	**% Beginning Learner**	**% Developing Learner**	**% Proficient Learner**	**% Distinguished Learner**	**% Proficient Learner and Above**
3	144	517	22.6	33.3	34.6	9.4	43.7
4	159	516	23.6	33.3	33.3	9.7	43.0
5	199	512	21.6	43.2	22.6	12.6	35.5

CES scored below State and District levels in each grade level for Mathematics. Our below-average test results in mathematics have become a considerable concern and have been an annual goal to show improvement. For example, in the 5th grade, the students scored 35.5% in the

proficient learner or above. Compared to the average district scores at 52.6% proficient learner or above, CES scored 17.1% points lower. In comparison to the state levels at 50.8%, CES students scored 15.3% lower.

In Chapter I, we identified the problem of practice for this action research as the inconsistency of effective collaborative planning within the PLCs, resulting in teacher practice differences among the grade levels. As we analyzed school data in mathematics, we saw specific grade levels consistently performing better than others based on student achievement data for local and state assessments and classroom observations. The fifth-grade team consisting of seven teachers has shown the most consistency in test results over the last three years.[3] A few standard practices evident among the grade levels are the established norms and protocols in place. They have developed a level of trust and are open to sharing resources and teaching strategies. However, when any personnel changes to the grade levels, some of the standard practices shared by these qualified teachers diminished, affecting the grade level's cohesiveness and effectiveness as a PLC.

Through this action research case study, a team of educators collaborated to create and maintain a culture of continuous improvement, focusing on implementing effective PLCs to increase teacher efficacy in improving their practices and their effect on student learning. As the school's lead change agent, the principal is responsible for designing professional learning to facilitate change and support implementing the change (Hord & Sommers, 2008).

As the principal, with a position of power and influence to lead change at CES, I was cautious that our action research participants were participating because they believed in the

[3] Due to COVID-19, the State cancelled all annual end-of-year assessments for the school year 2019-2020

school's mission and the work needed to improve student achievement, not because of my position. With access to academic, demographic, and non-academic local school and district data and resources, the action research team used them to drive our work in action research. Our teachers and administrators routinely engaged in collaborative learning teams each week to observe, plan, implement and reflect on this action research study to further enhance thriving professional learning communities throughout the school to increase student achievement.

Problem Framing Based on the Site

At CES, we continued to experience below-average scores on the State Assessments in Mathematics. Since 2014, the school district has implemented the Common Core Standards through the district established standards. Through collaborative learning teams, teachers and support staff have made great efforts to implement the new measures. However, what we have experienced over the last few years is that teachers' professional development training for teachers is not always consistent among the grade levels. The school has undergone changes with two principals and a change in experienced support staff to lead staff development. Hence, the consistency of professional learning and practices demonstrated in collaborative planning has changed.

In speaking with teachers and support staff, the main concern expressed is that accountability is not always there when monitoring the PLC's work. The teachers believed that without the administrators' accountability to ensure that the professional learning communities were functioning cohesively, where teachers took control of their learning and held certain expectations, we would never reach the group's potential. Principals play an important role in either helping or hindering their schools in achieving success (Tschannen-Moran & Gareis, 2015).

Secondly, the school experienced a steady stream of teacher turnover that included instructional coaches, seasoned and new teachers with under five years of classroom experience. Many of the teachers who left the school had many years of classroom experience. It is usual for some teachers to leave their schools each year, either by choice or dismissal and indeed, some departures may be beneficial. But a pattern of chronic turnover exacts instructional, financial, and organizational costs that destabilize professional learning communities and directly affect student learning (Simon & Johnson, 2015). Attrition also carries costs for student learning as high turnover rates reduce achievement for students whose classrooms are directly affected and for other students in the school (Carver-Thomas & Darling-Hammond, 2019).

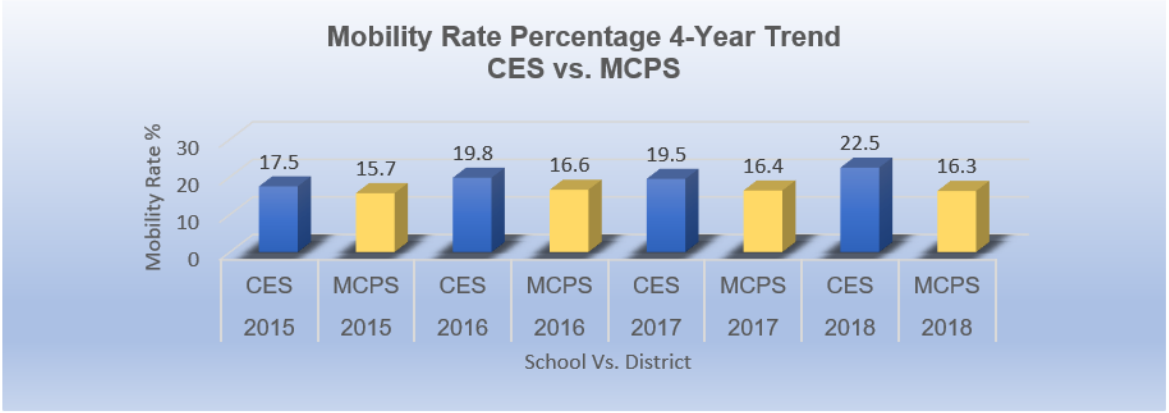
The loss of expertise has also affected the efficiency of the PLCs. Every year the District offers teachers opportunities to voluntarily transfer to other schools in the District, so efforts are made to recruit experienced teachers. Teachers with little to no experience are the primary hires. These new teachers must often reach out to their team members to guide them during their first few years. If the support for new teachers is not in place for them to learn and grow, they can become overwhelmed and often struggle to improve their practice, affecting student achievement.

Thirdly, using data to drive our instructional practices has been crucial to our collaborative planning sessions. At MCPS, there is a vast amount of data at our disposal to help guide our instructional planning and implementation of school-wide programs. One key observation during the sessions in which teachers can analyze data is the lack of understanding of how to use the data to help them formulate a plan to adjust their instructional practices. Working with data requires knowledge and skills (Schildkamp & Kuiper 2010) that teacher educators often lack.

Fourthly, the school has experienced a change in social-economic levels over the last ten years. With these changes, we have experienced increased poverty levels and expanded culturally and linguistically diverse students. The community has seen more minority families moving in with young children. CES has various economic levels in its surrounding community, with a poverty level of those under 18 years of age between 11.85% to 21.54%. The school has experienced a 23% yearly mobility rate (See Figure 8).

Figure 8

Coronado ES in comparison to Miramar County Public Schools Mobility Rate



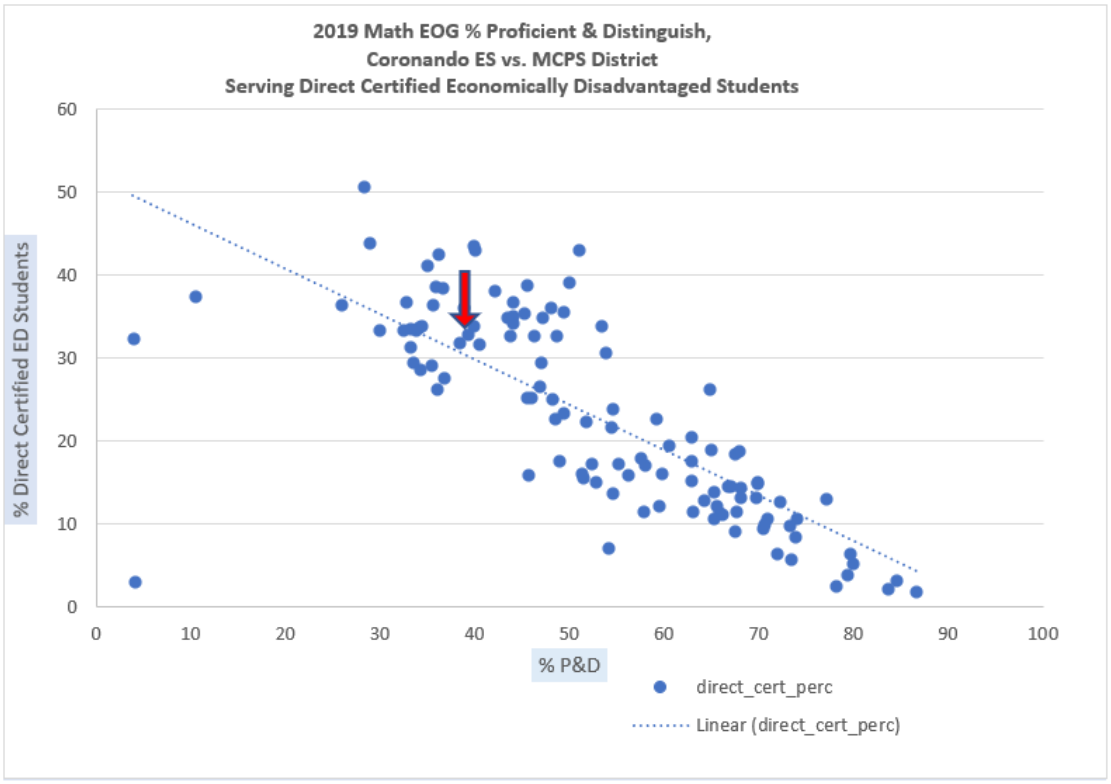
In Education and Poverty: Confronting Evidence (2012), Ladd points out that the percent of students who are members of minority groups demonstrates significant differences between students from low and high SES families. It will take a shift in policies to provide more resources to support students from low-SES families. Each school year, thousands of students transfer schools for reasons other than grade promotion. Student mobility affects the individual student and the teacher and students in their classes (Beaudette, 2015).

Also, with a free and reduced lunch meal (FRLM) rate of over 80%, CES (shown by a red arrow in Figure 9) has 32.8% of its Economically Disadvantaged students achieve a rate of

39.4% of proficient and distinguish levels of achievement. As we look at the trend line, in comparison to other schools in MCPS, it demonstrates a correlation that schools with higher rates of economically disadvantaged students are achieving less than those with lower rates.

Figure 9

Coronado ES vs. MCPS District Serving Economically Disadvantaged Students



And lastly, in March of 2020, when the Coronavirus Pandemic began to spread across the world, schools had to make drastic changes in conducting classes. Across the state, as in other parts of the country, MCPS shut down in-person classes and converted them to an all-digital learning platform. MCPS had implemented a digital platform over the last five years but had never used it longer than a few days to cover inclement weather days. Teachers felt comfortable implementing lessons digitally, but they experienced many challenges throughout the 2020-2021 school year.

As we analyzed critical areas of the school demographics, achievement levels, teacher experience levels, and digital learning, there was a need to delve deeper into the problem of practice at Coronado ES. Providing a clear structure and purpose for enhancing our PLCs allowed our teachers to collectively analyze student work by reviewing the standards and identifying student strengths and needs. The study's goal was to build a collaborative culture in which teachers established trust and worked collaboratively to assess and address student needs.

Problem Framing at the National Level

Federal and State Policies

As a result of Race to the Top (U.S. Department of Education 2009), states across the country vied for school improvement grants to advance educational reforms, including effective professional development and teacher collaboration within their school districts. Grant recipients unanimously chose to incorporate PLC and selected models that emphasized increasing and sustaining teacher collaboration in all disciplines (Battersby & Verdi, 2015). States were obligated to provide active professional development that included "common planning and collaboration time for teachers" (U.S. Department of Education, 2009).

Another federal mandate that affects professional learning in schools is implementing the Common Core State Standards (CCSS) (National Governors Association, 2010). The Common Core State Standards were the first curriculum reform of their kind to emanate from the national level, to be filtered through state and district levels, and ultimately to be enacted by individual educators in the classroom (Porter, 2013). Successfully implementing the Common Core represents a significant challenge for educators at all system levels, especially for classroom teachers (Porter, & Fusarelli, 2015). These standards also clarify that comprehension instruction must focus on literacy instruction, beginning in prekindergarten (Dougherty, 2015). However, 40

state education agencies conducted surveys determined that 37 states were struggling to provide the professional development (P.D.) needed to implement the CCSS. It is unlikely that state budgets will increase to provide additional personnel, materials, or financial resources for P.D. One way to provide P.D. without other resources is to form school-based professional learning communities (Dougherty Stahl, 2015).

With Race to the Top, this initiative mandated school districts to implement new teacher evaluations (U.S. Department of Education, 2010). Concerns with teacher quality have resulted in scrutiny of teacher evaluation practices in many countries. Principals have a significant and essential role in implementing new teacher evaluation policies that fundamentally affect the school staff's supervision. Implementing dramatically different strategies requires new learning, other school practices, and unfamiliar externally mandated procedures (Derrington & Campbell, 2015). Principals, who before the mandate, had more time to spend in collaborative planning with their teachers, after the changes, however, experienced less time in PLCs with more significant time reallocated to the mandated evaluation procedures as the number of observations and summative evaluations was significantly increased (Derrington & Campbell, 2015).

Learning Forward (formerly National Staff Development Council), with the contribution of 40 professional associations and education organizations, including NEA, developed the Standards for Professional Learning (National Education Association, 2011). The standards make explicit that the purpose of professional learning is for educators to develop the knowledge, skills, practices, and dispositions they need to help students perform at higher levels (P. 1). Professional learning that increases educator effectiveness and results for all students requires skillful leaders who develop capacity, advocate, and create support systems for professional learning (Learning Forward, 2011).

President Barack Obama signed into law the Every Student Succeeds Act, the Elementary and Secondary Education Act's reauthorization on December 10, 2015. In this new law, the definition of professional learning improved says that educator learning is an integral local strategy for building educator capacity to help students succeed with high academic standards (US Department of Education, 2015). Just as important, the definition says that professional development must be sustained, intensive, collaborative, job-embedded, data-driven, and classroom-focused (Hirsch, 2015). Professional learning within communities requires continuous improvement, promotes collective responsibility, and supports individual, team, school, and school system goals.

COVID-19 Effects

On March 11, 2020, the World Health Organization (WHO) assessed the spread of COVID-19 and characterized it as a pandemic (World Health Organization, 2020). As the Coronavirus Pandemic spread across the world, schools had to shift their schooling from in-person to digital learning. Distance learning and eLearning have been widely popular terms for over 20 years, related to the digital transformation in education. However, before the Coronavirus pandemic, eLearning has been an area of science than a widespread practice (Mladenova et al., 2020). Pandemic outbreaks, such as the COVID-19, present unique challenges to education, especially for teachers to continue teaching while maintaining a physical distance.

There are three main types of eLearning:

1) *Synchronous*. It is implemented by video conferencing tools such as online platforms like Zoom, Microsoft Teams, or Google Meets.

2) *Asynchronous*. This type of eLearning is usually done by email, learning management systems, social media, etc.
3) *Hybrid*. A mixture of the previous two. (Mladenova et al., 2020)

Successful implementation of distance learning depends on the extent to which schools and teachers shift to new pedagogies, such as the flipped classroom model, to ensure robust lesson design (Gallagher et al., 2020). Teachers should be given enough time to adapt their existing and develop new teaching and examination materials suitable for eLearning.

Planning for technology integration was made more complicated by adopting the Common Core State Standards in English Language Arts (Thoma et al., 2017). Teachers are challenged to understand the associated digital pedagogical practices and content knowledge and be familiar with how the technology components can effectively support learning (Ertmer & Ottenbreit-Leftwich, 2013).

A rollout of an initiative of this magnitude comes with some challenges. Students will not have typical social interactions in a virtual learning platform that is not directly designed around student relational needs. Teachers and other school personnel will be less likely to access necessary information about students' home lives, enabling them to respond as they typically would to students in crisis (Gallagher et al., 2020). Early elementary children and vulnerable student populations are most at risk from moving to a distanced setting (p. 4). Another challenge will be that teachers will need additional daily planning time and training to redesign instruction and make the substantial instructional shifts necessary to provide high-quality learning experiences (Gallagher et al., 2020). For teachers to be successful in this, their digital

technologies competency needs to be high; their 21st-century learning communication skills, collaboration, creativity, and problem-solving need to be well-honed (Sheffield et al., 2018).

The Story and Outcomes

In July 2016, the MCPS appointed me as the principal at Coronado Elementary School. At the time, I had over seven years of working as a site-based administrator. I led both elementary and middle schools as a principal. During my first 100 days on the job, I met with the entire staff and many parents. A common concern that arose was that the school's ELA and Math data were below many other elementary schools across the district. So, as we began to analyze the data, we investigated the processes and structures associated with professional learning communities. A common problem was revealed as the inconsistency of effective collaborative planning within the PLCs, resulting in teacher practice differences among the grade levels. Based on the early analysis of the PLC practices, I knew that we must enhance our PLCs if we were going to improve student achievement.

As the principal investigator for this action research, I wanted to focus on our current practices and structures within PLCs. Over the last two to three years, the work put in place was positive, but we still believed that we needed to strengthen our PLCs and overall teacher collaboration. As I began this Doctoral journey at the University of Georgia in 2018, I proposed enhancing professional learning communities to improve student achievement at a Title I elementary school for my topic of study for the Action Research. Once my primary dissertation chair approved the proposal, I submitted my application for the study to the IRB at the university and my local district. In the Spring of 2020, both the IRB committee and the District approved my study.

In May 2020, we began to make plans to conduct the action research. As previously mentioned in Chapter 1, the researcher followed the action research method described by Mertler (2019), which spoke about the cyclical process composed of a four-stage approach. The four stages are as follows: 1) the planning stage, 2) the acting stage, 3) the developing stage, and 4) the reflecting stage.

Phase One: The Planning Stage (Summer 2020)

In the planning stage, Mertler (2019) describes it as 1) identifying and limiting the topic, 2) gathering information, 3) reviewing related literature, and 4) developing a research plan. In July, the researcher organized a leadership retreat for his Instructional Leadership Team (ILT). The ILT members consisted of a grade-level chair for each grade level, the three Assistant Principals, the Instructional coach, the LSTC, the Media Specialist, and the Administrative Assistant. During this summer session, we reviewed and analyzed the data from the previous school year, looked at district priorities, and made plans to develop our local school plan for improvement. As we talked about the district's push to strengthen the collaborative learning teams, I proposed the idea to a few team members about the action research study. Specifically, I met with the fifth-grade chair, the instructional coach, LSTC, and the AP over that grade level. They were excited about exploring deeper into enhancing our professional learning communities.

In August 2020, I met with the same four members plus the district's math content specialist. We met as the AR Design Team to introduce them to action research and defined key terms. We discussed how an action research study might differ from a more traditional empirical research and a review of Mertler's (2019) action research cycle during the first meeting. Members reviewed the action research team's role, the purpose of the study, the proposed research questions, and the recruitment of participants. Since it was just a handful of participants

for the AR Team, we hosted the meeting face-to-face in the cafeteria, where there was ample space to socially distance. Design team members all agreed to help construct an action implementation plan that allowed us to capture the evidence using data and professional feedback to improve our teaching practices.

After the AR Design Team's initial meeting, the researcher scheduled an Action Research Team meeting to explain the study further and seek participant consent. The researcher explained the reasons for selecting the fifth-grade level teachers and the Gifted teacher for the 4th and 5th grades. He prepared a packet consisting of a brochure describing the action research overall process, the school's three-year student achievement data for mathematics, some corresponding literature, and the consent form. The researcher also discussed the three planned cycles of inquiry. The action research plan followed the three cycles recommended by Mertler (2019).

During this first meeting, participants completed the Teacher Sense of Efficacy Scale questionnaire (Tschannen-Moran & Hoy, 2001) to establish a baseline for their efficacy level. They reviewed some current literature about the effectiveness of incorporating a PLC in a school setting. The researcher explained that the design team recommended that the fifth-grade students be given a 20-question pre and post-test on the unit for decimals. And lastly, the researcher described some future interventions scheduled such as the focus group meeting, more literature review, an open-ended questionnaire, a CLT Self-Assessment, and a PLC survey to collect and analyze data.

Phase Two: **The Acting and Developing Stages (August 2020 – January 2021).**

In these two stages, Mertler (2019) describes the acting stage as 1) collecting and analyzing the data and 2) defining the developing stage as developing an action plan. The study

focused on implementing the action research team's interventions, monitoring data and feedback, and adjusting as needed. A complete description of the interventions and activities conducted as part of the research study is described below by cycles.

Cycle 1. During this first cycle, the AR Team completed the Teachers' Sense of Efficacy Scale (Tschannen-Moran & Hoy, 2001) during the first meeting in August 2020. This questionnaire was designed to help understand the kinds of things that create challenges for teachers. Teachers rated themselves on 12 statements such as "How much can you do to control disruptive behavior in the classroom?" and "How well can you implement alternative teaching strategies in your classroom?" on a scale of 1 (None at all) to 9 (A great deal). Table 5 displays the results of the initial administration of the Teachers' Sense of Efficacy Scale in order of descending overall mean self-efficacy rating.

Table 5

Teachers' Sense of Efficacy Scale, August 2020 Results

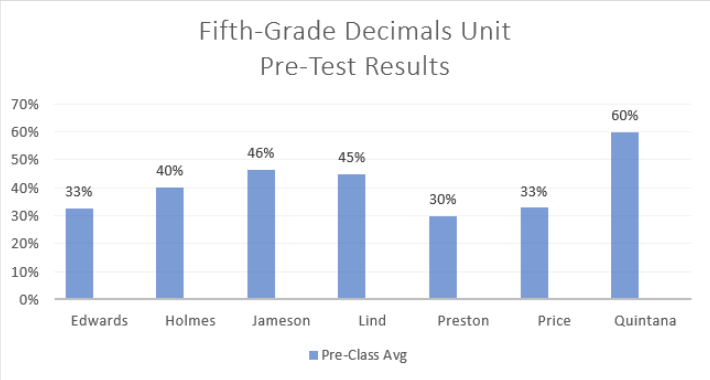
Teacher #	*Mean (1-9)*	*Student Engagement (1-9)*	*Instructional Strategies (1-9)*	*Classroom Management (1-9)*
2B	7.8	7.5	8.0	8.0
3Q	7.4	6.0	9.0	7.3
4J	6.2	6.3	6.0	6.3
5H	8.5	8.3	9.0	8.3
6R	7.7	7.5	8.5	7.0
7P	7.5	7.3	7.8	7.5
8S	7.7	7.3	8.3	7.5
9P	7.4	7.3	7.8	7.3
10E	8.2	8.3	8.0	8.3
11L	7.0	7.3	6.8	7.0
Average	**7.5**	**7.3**	**7.9**	**7.4**

Results indicated a reasonably high sense of self-efficacy for AR Team participant teachers with an overall mean of 7.5 on a scale of 1 to 9. The Individual mean self-efficacy ratings ranged from 6.2 to 8.5, with 90% of respondents showing a mean self-efficacy score of 7.0 or higher. We also conducted a factor analysis for *Efficacy in Student Engagement*, *Instructional Practices*, and *Classroom Management* as recommended by Tschannen-Moran & Hoy (2001). The analysis displayed some differences among the three categories, with mean scores of 7.4 for Student Engagement, 7.9 in Instructional Practices, and 7.4 in Classroom Management. Surprisingly, two teachers scored the highest possible score of 9.0, and four teachers scored 8.0 or above under the Instructional Practices section. The action research team analyzed and reflected on the overall scores and believed that the scores might have been high due to the team's experience and that no students were present for in-person learning. They were curious to see if the post-test responses would remain at those levels.

Toward the end of the first cycle, the fifth-grade teachers administered a pre-test to all in-person and digitally learning students. The common assessment comprised 20 multiple-choice questions based on the decimals unit that the teachers would teach over five weeks. The pre-tests results are shown in Figure 10 below.

Figure 10

Pre-tests results for Fifth-Grade Decimals Unit Common Assessment



During this first cycle, the teachers focused on some strategies established during their PLCs to see if they would impact student learning about decimals.

During this first cycle, the AR Team completed the Collaborative Learning Team (CLT) Implementation Self-Assessment (MCPS, 2019). This self-assessment comprised a four-part survey that focused on Team Structures, Team Accountability, Team Norms, and Continuous Quality Improvement within a collaborative learning team. Initially, the AR Design team believed that it would be acceptable to have the team complete the survey in total, but for the post-survey, they would only have to complete the part that they selected to focus on during the study. Once the researcher organized and presented the results, the AR Team voted to focus on Team Accountability as part of the study. This section focused on indicators like Team Leaders, Shared Accountability, Team Roles, and Team Measurement. Within each of these indicators, the participants rated their current CLT levels to see where they saw themselves in the given stages. Those stages were *Group of Individuals*, *Collaborative Group Getting Work Done*, and *Collaborative Learning Team*.

Under the column for *Group of Individuals*, if the group selected any of the indicators in this section, it was worth one point. For the *Collaborative Group Getting Work Done*, the selections were worth three points, and in the last column for *Collaborative Learning Team*, the checkbox was worth five points. In Table 6, the data displays the average points per indicator. We noticed that two teachers had scores under 3.0 points, indicating that they did not believe the CLT efficiency was at least the collaborative group's level of getting work done. Teacher # 3Q scored below 3.0 in two indicators, 1.80 for Team Structure and 2.20 for Team Norms. Teacher # 8S scored 1.50 under Team Norms.

Table 6

Scoring for Team Self-Assessment in all Four Categories

Teacher #	*Team Structure*	*Team Accountability*	*Team Norms*	*CQI*	*Mean (1-5)*
2B	4.20	3.00	3.40	3.33	3.48
3Q	1.80	3.00	2.20	3.00	2.50
4J	3.00	4.00	2.20	3.67	3.22
5H	3.80	3.00	3.80	3.00	3.40
6R	4.60	4.50	3.80	3.67	4.14
7P	3.40	3.00	3.00	3.33	3.18
8S	3.80	1.50	3.00	3.33	2.91
9P	4.20	3.50	4.20	4.00	3.98
10E	4.60	3.50	4.60	4.33	4.26
11L	3.80	3.00	4.60	4.00	3.85
Average	3.72	3.20	3.48	3.57	3.49

Progressing forward, the AR Team analyzed the results in all four categories, and they elected to focus on Team Accountability. The team believed that they could work in strengthening their CLT during the action research study. Table 7 below displays the individual scores for each participant. For each category, the teachers could earn 1, 3, or 5 points to score where they believed their current CLT was functioning.

Table 7

Scoring for CLT Self-Assessment Team Accountability Category

	Team Accountability Pre					
Teacher #	**Team Leaders**	**Shared Accountability**	**Team Roles**	**Team Measurement**	**Total Points Per Teacher**	**% Per Teacher**
2B	3	3	5	1	12	60%
3Q	1	5	3	3	12	60%
4J	3	3	5	5	16	80%
5H	1	3	3	5	12	60%
6R	5	3	5	5	18	90%
7P	3	3	3	3	12	60%
8S	1	3	1	1	6	30%
9P	5	3	3	3	14	70%
10E	5	3	5	1	14	70%
11L	3	3	1	5	12	60%
Average	30	32	34	32	128	64%

Two teachers rated their perception of their current CLT at two extremes. Teacher # 8S scored extremely low with just six out of 20 points for the four sections, which gave her a rating of the CLT at 30%. On the other end, Teacher # 6R scored 18 out of 20 points maximum in this section, giving her a 90% rating of the CLT. It may be possible that the discrepancy of the scores is due to the two teachers' direct involvement. One has been facilitating the PLC sessions over the last four years, whereas the other teacher has only been on board for just two years and does not facilitate any parts of the PLC sessions. Chapter 5 will compare the pre-and post-scoring for this category to see if their perception changes after the various interventions.

Rounding out Cycle 1, the AR Team reviewed a few contemporary literature articles on PLCs. Those articles were. *SEDL Insights: Implementing Effective Professional Learning Communities* (Pirtle & Tobia, 2014), *Moving from Compliance to Agency: What Teachers Need to Make Professional Learning Work* (Calvert, 2016), and *Professional Learning Communities: Keeping the Focus on Instructional Practice* (Spencer, 2016).

Ms. Quintana, a veteran teacher on the group, said the following after reading a few articles:

> "*Based on your 'SEDL Insights' article, there was a section, Insight 4, that really spoke to me regarding trust and respect. "The author defines trust as one's willingness to be vulnerable to another based on the confidence that the other is benevolent, honest, open, reliable, and competent. I feel if there was more of an atmosphere of trust and respect as professionals in these PLC meetings that individuals would be more willing to speak out and engage in professional conversations."*

Another veteran teacher Ms. Robinson added:

"Yes, an atmosphere of trust and respect is very important because, in order to learn, we must be vulnerable. We have to be able to evaluate ourselves as educators to determine what our students' needs are. An atmosphere of trust will promote equity among the team and lead to increased productivity."

Overall, throughout the entire study, the literature allowed the teachers to learn more about effective PLCs and compare what they read to how they perceive to rate their current PLC practices.

Lastly, the researcher used a journal to document actual dates and observation notes from AR Team's collaboration sessions in their PLCs, the AR team meetings, the focus group sessions, and classroom visits. Data journals can similarly provide practitioner-researchers with the opportunity to maintain narrative accounts of their professional reflections on practice (Mertler, 2019).

The most important notes for the researcher were those from the teachers' actual sessions within their PLCs. To listen and see the existing protocols and rich discussions happening in real time was amazing. Every Thursday at 12:40 pm, the team would meet in their PLCs to work on lessons, road maps, common assessments, and students' data works and analysis. Not one session looked the same throughout the study, even though they always started the meetings reviewing their team agreements and taking a moment to reflect and celebrate any accomplishments.

One observation that stood out was the amount of preparation that each teacher had to do before the CLT sessions. Having been a one-subject teacher teaching math in middle school, he did not know how much preparation the teachers had to teach all four content areas in elementary school.

Cycle 2. After Cycle 1, the AR Team met to discuss and reflect on the study's first cycle. They provided feedback on the process and what they have learned thus far into the action research study. They discussed Cycle 2 and planned the interventions for the cycle.

A considerable part of the study was conducting a focus group interview. Focus groups are instrumental when time is limited and because people are often more comfortable talking in a small group, as opposed to individually (Mertler, 2019). In October, the AR Team's ten members met after school for an hour and 15 minutes via ZOOM. The researcher devised a set of ten guiding questions, with opportunities to ask follow-up questions. The set of questions used for the focus group interview are shown in Appendix I. A member of the AR Team transcribed the recording. She coded the speakers within the focus group to prevent identifying any of the participants. The researcher manually coded and analyzed all focus group transcripts.

One question asked was, 'What do you perceive to be the benefits of working within a PLC?" Ms. Edwards, one of our most senior teachers, responded by saying:

> *"I think it opens up our minds to new concepts and how we can pace our teaching and use the curriculum and the teaching guide. I think it takes away the competition, where a teacher may think I am doing well and not supporting other teachers."*

Other teachers expressed during the meeting that being able to share knowledge and gain new ways of teaching or doing things with each other can learn from someone else who may have a different way of teaching a concept or topic.

Another question referenced asked the teachers what they hoped to gain from participating in a PLC. Some participants shared that they enjoyed reading the PLC literature given thus far, and one section that stood out was time for reflection. They like the idea that teachers can sit in their PLCs to discuss things like what worked for one but may not have

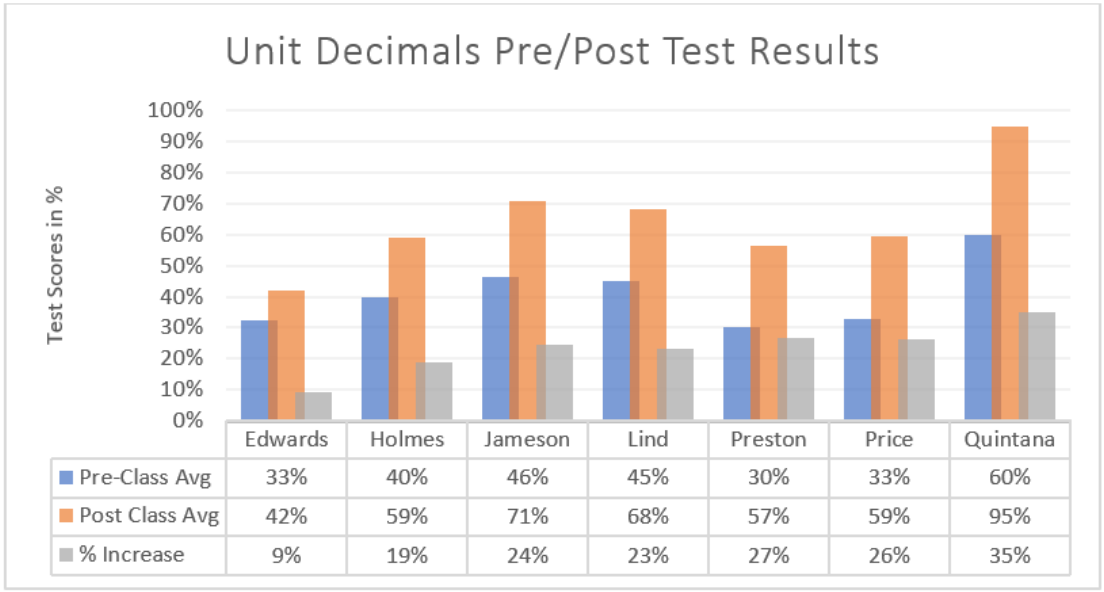
worked for another to deliver the lessons. Another teacher pointed out the section about having time to analyze student work, go back to the standards, and adjust the instruction. She also commented about having the chance to see other teachers share or model ideas on a particular skill.

Overall, there was a great dialogue amongst the group, and we were able to gather excellent data for this study. Further discussion of the data collected from this focus group interview will be described in chapter 5.

After five weeks of instruction in the decimals unit, the teachers administered the post-test to compare students' test results. The teachers observed that they were more focused in their lesson preparation and delivery this time around because they knew the importance of the test, as it would be used in its data collection analysis, so they were more attentive to their instructional practices. The results of the pre-and post-tests are shown below in Figure 11.

Figure 11

Fifth Grade Unit Decimals Pre/Post-Test results



	Edwards	Holmes	Jameson	Lind	Preston	Price	Quintana
Pre-Class Avg	33%	40%	46%	45%	30%	33%	60%
Post Class Avg	42%	59%	71%	68%	57%	59%	95%
% Increase	9%	19%	24%	23%	27%	26%	35%

These scores represented every student who took a pre and post-test. As we compared the results, all teachers were pleased that there was an increase in scores across the grade-level. The scores averaged from a 9% increase to a 35% increase. Overall, the mean scores among the grade-level were approximately 63%. There was an increase of roughly 21% points compared to the pre-test. However, there was a considerable gap when looking at the standard deviation for both pre-and post-test results. The results show a standard deviation from 20.5 to 25.1 variance, as shown in Table 8 below.

Table 8

Calculations of the total students mean scores and standard deviation of the sample vs. only students with both a pre-and a post-test score.

	Pre-Score	Post-Score
Number N=	107	102
Mean =	42%	62%
Standard Deviation =	20.5	24.8

All students who took a test

	Pre-Score	Post-Score
Number N=	92	92
Mean =	42%	63%
Standard Deviation =	20.5	25.1

Results of only students with a pre-and post-score

Another intervention put in place during this cycle was the use of the instructional coach and math specialist. The instructional coach conducted coaching cycles with two AR Team members, focusing on modeling, lesson development, and goal setting. One of her main focuses for the rest of the teachers was supporting the teachers with lesson planning, analyzing the standards, utilizing the curriculum road maps, and analyzing student achievement data. The instructional coach collaborated with the district's instructional math specialist to provide targeted support for the fifth-grade teachers through informal classroom observations, reviewing assessments and instructional alignment, and leading instructional planning and professional learning during the PLCs. Ms. Edwards mentioned how important it is for the coaches or other teachers to model lessons by saying:

"One of the growths of planning is when as teachers, we are able to model out our thinking and apply strategies that maybe somebody else could have utilized when they see how it can be done in another way."

The coach and specialist also spearheaded the datatalks twice a month. They incorporated the student achievement scores from a selection of common assessments. It was great to see how the teachers delved deeper into their students' work and made comparisons to how other students were doing across the grade-level. Analyzing the data allowed for an engaging conversation on what some teachers used or did to improve their students' scores.

Cycle 3. After Cycle 2, the AR Team met to discuss and reflect on the study's second cycle. They provided feedback on the process and what they have learned thus far into the action research study. They discussed cycle three and planned the interventions for the cycle.

As part of the monthly data talks, the team analyzed the math decimals unit pre and post-tests results closely. It led to a valuable conversation as they broke down specific students' scores and made comparisons between the in-person students and those who remained on digital learning. They looked at misconceptions and reflected on what they have been doing so far within their PLCs to see if they could have done anything different to improve scores.

They continued to further immerse themselves in the reading of the literature about PLCs. One article, *Building Professional Community in Schools* (Kruse et al., 2017), detailed and covered topics that were key in developing the PLC survey used for this study. In December, upon completing the assigned literature readings, the AR Team completed the PLC survey.

Continuing in Cycle 3, the AR Team continued to reflect, and based on conversations, preparations, involvement, etc., a different atmosphere was evident in the PLC sessions. In one of the researcher's journal entries, he documented:

(November 19) The teachers went over their norms and team agreements. They analyzed some of the AKS standards: 1) Multiplying fractions by a whole number, 2) Solving word problems with mixed numbers, and 3) Solving multi-step problems. It seemed everyone was ready to break down the standards and develop their lessons. The instructional coach explained she would model using fraction tiles, and I was impressed when Ms. Preston asked, "can we use a different example for representation? Maybe use a number line vs. Tiles? At that moment, I saw the confidence in some of the teachers to bring in their questions or ideas."

The team continued to follow their set protocols and put time and effort into a good 30 to 35 minutes. Even though the PLC sessions were all virtual, the team members did an excellent job preparing ahead of time and learning how to develop resources to share using the online tools available. Another point noted from the researcher's journal entries taken on December 14, during a data talks session:

It is great to see everyone logged in on time and with their pre-work completed. The specialist began to talk about misconceptions for our developing students to move to the proficient level. Ms. Price shares her two examples of student work, demonstrating work at the proficient level and the other at the developing level. I am impressed with how she explained the missteps shown by the student…how the other teachers were able to chime in and provide feedback about what they saw in the example and how they have seen in their own group of students."

Phase Three: The Reflecting Stage (December 2020 - January 2021)

Professional reflection is a crucial component of the action research process and should be integrated thoroughly throughout each step along the way (Mertler, 2019). The action

research team met twice during the last phase of this study. Rounding out the final stage of the action research, the AR Team completed both the Teacher Sense of Efficacy Survey (Tschannen-Moran & Hoy, 2001) and the CLT Self-Assessment; the Team Accountability portion only (GCPS, 2019). The action research team also completed a 9-part open-ended questionnaire about their perceptions of what they learned about PLCs and what they took away from the action research study.

One question on the questionnaire asked: *Based on your current PLC, describe two effective practices within your PLC.* Ms. Belcher mentioned:

> *"Having a clear purpose and structure. Collaborating to improve instruction to increase student achievement and to ensure that variability is reduced from classroom to classroom."*

Other effective practices mentioned were team celebrations and data analysis. The teachers enjoyed having time to celebrate the positives things happening in their classrooms and sharing them with the group. With data analysis, they like the time set aside to review student data and see how other students perform on formative and common assessments. There was an excellent dialogue on essential topics of discussion that derived from the guiding questions. The AR Team provided great insight as they answered the questions on the questionnaire. They enjoyed participating and were glad to hear others' perspectives throughout the PLCs, the Focus group meetings, and the questionnaire.

Chapter Summary

In summary, this chapter presented the problem of practice by providing an overview of the context and background that framed the study. Four significant concerns arose from studying the site, 1) Administrator accountability, 2) Teacher turnover, 3) Using data to drive instructional

practices, and 4) Socioeconomic levels. Looking closely into these four concerns allowed the action research team to further delve deeper into understanding how to work more effectively within a PLC to improve student achievement.

To further understand entities that can contribute to the problem of practice, the chapter presented concerns regarding policies at the national level and their indirect effects at the local level. From the Race to the Top initiative mandating school districts to implement improved teacher evaluations to the Every Student Succeeds Act, the Elementary and Secondary Education Act, which focused on professional development incorporating job-embedded activities that are collaborative and data-driven.

The researcher further presented the story and outcomes from the action research study. Mertler's (2019) four stages of the action research process were implemented in three phases. In phase one, the planning stage activities that help develop the study's action plan, followed by the acting and developing stages, were presented. The action research team followed three cycles of inquiry, implementing interventions, monitoring the action plan, and adjusting accordingly. Chapter four concludes by presenting the reflecting stage, which covered sharing and communicating the results and reflecting on the process.

The chapter concluded with an analysis of the various interventions and the research team's feedback throughout the different parts of data collection. The AR Team had many robust conversations and completed multiple surveys and questionnaires to help with the data gathering process. Chapter 5, the researcher will provide a breakdown and in-depth analysis of the findings.

CHAPTER 5

Findings

The purpose of this action research study was to determine teachers' perceptions of Professional Learning Communities and how they believed participation in a PLC impacts their professional development and classroom instruction in a Title I Elementary School. This action research study sought to answer the following three questions:

1) How does an effective collaborative process among teachers in a Professional Learning Community impact teachers' perceptions of self-efficacy?

2) How does participation in a PLC impact teachers' instructional practices in the classroom?

3) What does the action research team identify as the essential components of developing an active PLC in an urban, Title I elementary school?

This chapter presents the key findings from a thematic analysis of the data collection connected to the research questions. The researcher will illustrate the themes that emerged from data collected throughout the three action research cycles. He will share key findings compiled from both quantitative and qualitative data collected through the Teacher Sense of Efficacy Scale questionnaire (Tschannen-Moran & Hoy, 2001), a Collaborative Learning Team (CLT) Self-Assessment (MCPS, 2019), a PLC survey (School Reform Initiative, 2019) pre- and post-tests results and reflections from a personal interview questionnaire.

A summary of the findings' analysis through themes connected to the research questions is illustrated in Table 9.

Table 9

Summary of Research Findings

Research Questions	Findings
1. How does an effective collaborative process among teachers in a Professional Learning Community impact teachers' perception of self-efficacy?	Theme 1: Teachers perceived working collaboratively in a PLC setting as beneficial to their self-efficacy. Theme 2: Teacher Efficacy can be positively impacted by understanding and implementing PLC Structures. Theme 3: Incorporating job-embedded learning can impact teachers' efficacy in instructional practices.
2. How does participation in a PLC impact teachers' instructional practices in the classroom?	Theme 1. Team accountability is an essential characteristic of establishing an effective PLC. Theme 2. Collaborative data analysis by teachers in a PLC can yield lessons for the implementation of improved instructional practices. Theme 3. Finding time to incorporate best practices within a PLC is a challenge.
3. What does the action research team identify as the essential components of developing an active PLC in an urban, Title I elementary school?	Theme 1: Leadership support plays a significant role in establishing and sustaining an effective PLC. Theme 2: Protocols and structures with a commitment to continuous improvement are the key drivers to an effective PLC.

Research Question1: Effective Collaborative Processes Among Teachers in a Professional Learning Community Impact Teachers' Perceptions of Self-Efficacy.

To determine what teachers perceived to be an effective collaborative process in a PLC, qualitative data captured from a focus group interview, observations, and reflections provided

data analysis of this research question. In August 2020, the AR Team engaged in completing the Teacher Sense of Efficacy Scale (Tschannen-Moran & Hoy, 2001), and then again in January 2021. These pre- and post-scores were analyzed to compare any significant differences in their perception of self-efficacy. All ten members of the AR Team participated in the surveys.

The AR Team also participated in a focus group interview. The team met to answer a set of ten questions with options to ask any follow-up questions. Three themes emerged from the analysis of data related to research question 1:

1. Teachers perceived working collaboratively in a PLC setting as beneficial to their self-efficacy.
2. Teacher Efficacy can be positively impacted by understanding and implementing PLC Structures.
3. Incorporating job-embedded learning can impact teachers' efficacy in instructional practices.

Theme 1 - Teachers perceived working collaboratively in a PLC setting as beneficial to their self-efficacy.

Ten members of the AR Team completed The Teacher Sense of Efficacy Scale (Tschannen-Moran & Hoy, 2001) in August 2020 and again in January 2021. The teachers rated themselves on 12 statements such as, "How much can you do to help your students value learning?" on a scale of 1 (None at all) to a scale of 9 (A Great Deal). The researcher conducted a factor analysis for *Efficacy in Student Engagement, Efficacy in Instructional Practices, and Efficacy in Classroom Management* as recommended by Tschannen-Moran and Hoy (2001) by computing unweighted means of the items specified by the authors that load each factor. The survey included two different scales, one with a 24-questions (long form) and one with 12

questions (short form). The authors recommend using the long form when working with pre-service teachers. The short form is better for teachers with some teaching experience. The researcher chose the short form to gather data because each AR team member had at least two years of teaching experience. Table 10 shows the mean efficacy ratings for each factor and overall mean for the Teacher Sense of Efficacy Scale administered in August 2020 and again in January 2021.

Table 10

Overall Results from Teacher Sense of Efficacy Scale

	August 2020 (1-9)	January 2021 (1-9)	Difference
Efficacy in Student Engagement	7.3	7.6	0.3
Efficacy in Instructional Strategies	7.9	8.3	0.4
Efficacy in Classroom Management	7.4	7.8	0.4
Overall Mean	7.5	7.9	0.4

The data revealed that the perceived levels of efficacy increased slightly between August 2020 and January 2021. To get a better understanding of the results, the AR Team looked closely at each respondent's ratings. Table 11 shows the mean self-efficacy ratings for each participant in both administrations of the Teacher Sense of Efficacy Scale in August 2020 and again in January 2021.

Table 11

Individual Pre/Post Results from Teacher Sense of Efficacy Scale

Teacher #	Mean TSES August 2020 (1-9)	Mean TSES January 2021 (1-9)	Difference
2B	7.8	8.1	0.3
3Q	7.4	7.7	0.3
4J	6.2	8.2	2.0
5H	8.5	8.0	-0.5
6R	7.7	7.8	0.1
7P	7.5	6.7	-0.8
8S	7.7	8.0	0.3
9P	7.4	8.3	0.8
10E	8.2	8.5	0.3
11L	7.0	8.0	1.0
Average	7.5	7.9	0.4

As we examined the individual mean rating scores, 80% of the respondents showed an increase in overall efficacy levels. The changes in efficacy levels ranged from a decrease of 0.8 points to a rise of 2.0 points.

As we analyzed the data, we were pleased to see an overall steady increase across the board. The AR Team completed the first scale in August 2020 when, due to the COVID-19 pandemic, we started the school year teaching all students on a digital learning platform. The researcher believed that with students not in-person in their classrooms, the teachers rated high on the scale because things were quiet, there were no classroom disruptions, and teachers were calmer working independently in their rooms in front of a computer. The AR Team believed that maybe their perception of how they rated themselves would change once the students were back in-person and the modified schedule went back to normal. However, based on January's survey, the participants still rated themselves about the same or slightly higher on the scale. Ms. Preston, during one of our follow-up AR Team sessions, mentioned, "*With having just 17 students as opposed to 27 or 28 in the classroom, does make teaching a lot more engaging and more manageable."* Another member of the team, Ms. Lind, added:

> *"What has been beneficial is the fact that even though we have faced challenges with the students coming back at different times, which did create some problems, we were still able to meet those challenges because we have been able to meet as a team, even though it is virtual but none-the-less, we have been able to meet."*

As we further analyzed the data, 20% of the respondents showed a slight decrease in their overall ratings on the post-scale scores than the August results. As we looked at the ratings closely across the three areas, we noticed that that same 20 % of the teachers showed decreases across all factors in *Student Engagement, Instructional Strategies, and Classroom Management.*

A comparison of the three areas revealed an overall consistency among the teachers in the three areas in Tables 12, 13, and 14. For example, in Table 12, *Efficacy in Student Engagement*, results indicate that Teachers 5H, 6R, and 7P all showed a decrease in this area.

Table 12

Ratings for Efficacy in Student Engagement

Teacher #	Student Engagement August 2020 (1-9)	Student Engagement January 2021 (1-9)	Difference
2B	7.5	8.0	0.5
3Q	6.0	6.8	0.8
4J	6.3	8.0	1.8
5H	8.3	8.0	-0.3
6R	7.5	6.5	-1.0
7P	7.3	6.5	-0.8
8S	7.3	7.5	0.3
9P	7.3	8.0	0.8
10E	8.3	8.5	0.3
11L	7.3	8.0	0.8
Average	7.3	7.6	0.3

Then, as we compared ratings again in Table 13 below, the same teachers rated themselves lower in *Efficacy in Instructional Strategies,* with teacher 5H showing a drop by 0.8 points and teacher 7P by a total of 1.0 points.

Table 13

Ratings for Efficacy in Instructional Strategies

Teacher #	Instructional Strategies August 2020 (1-9)	Instructional Strategies January 2021 (1-9)	Difference
2B	8.0	9.0	1.0
3Q	9.0	8.5	-0.5
4J	6.0	8.8	2.8
5H	9.0	8.3	-0.8
6R	8.5	8.5	0.0
7P	7.8	6.8	-1.0
8S	8.3	8.8	0.5
9P	7.8	8.3	0.5
10E	8.0	8.5	0.5
11L	6.8	8.0	1.3
Average	7.9	8.3	0.4

However, as we noticed for the other teachers' scores, they showed a positive gain, with three teachers, or 30%, scoring above 1.0 points, and one teacher showed a vast difference with 2.8 points gain.

And lastly, as we looked further in *Efficacy in Classroom Management* in Table 14 below, we continued to notice a common trend among teachers, a few teachers with a decrease of 0.5 and 0.8 points, respectively. However, we were pleased to see positive increases in ratings, with four teachers or 40% indicating a rise of 1.0 points or higher.

Table 14
Ratings for Classroom Management

Teacher #	*Classroom Management August 2020 (1-9)*	*Classroom Management January 2021 (1-9)*	*Difference*
2B	8.0	7.3	-0.8
3Q	7.3	7.8	0.5
4J	6.3	7.8	1.5
5H	8.3	7.8	-0.5
6R	7.0	8.3	1.3
7P	7.5	6.8	-0.8
8S	7.5	7.8	0.3
9P	7.3	8.5	1.3
10E	8.3	8.5	0.3
11L	7.0	8.0	1.0
Average	7.4	7.8	0.4

Overall results were positive for the group across the three areas, with 80% rating themselves higher on the January scale results. The AR Team members acknowledged that working collaboratively as a team contributed to their overall positive perceptions as they rated themselves on the Teacher Sense of Efficacy Scale.

Theme 2: Teacher Efficacy can be positively impacted by understanding and implementing PLC Structures.

At the beginning of Cycle II of this action research, the AR Team met for a focus group meeting. The researcher devised a set of ten guiding questions, with opportunities to ask follow-up questions. This meeting proved insightful information with authentic answers to teachers' perceptions of working in a PLC setting. One question asked was, *"What is your understanding of a professional learning community ?"* A critical point that evolved from this dialogue was the importance of establishing shared norms and practices. In the book, The *Five Dysfunctions of a Team* (Lenconi, 2005), the author mentions that one of the essential steps in building a cohesive and high-performing team is establishing vulnerability-based trust. As a collective group, the teachers also learn to recognize and value other team members' strengths and learn from one another. Organizations are established to bring people together in a coherent way to achieve a collective purpose that cannot be accomplished by working alone (Dufour et al., 2016).

During the focus group meeting, teachers had a chance to define their understanding of a PLC's make-up. Ms. Quintana mentioned that she felt the professional learning community is a structure for teachers to engage in constructive dialogue. She went further to define a PLC by saying:

> *"For me, I feel like the professional learning community is supposed to be where the teachers themselves, the people that are actually working together with the kids, can engage in constructive dialogue, reflect on and improve their instruction, learn how to become even more effective through their engagement with the other teachers, to improve student learning."*

Ms. Lind explained her understanding of working in a PLC by saying, "*I do agree with coming together and bettering ourselves and also talking about all of our students and what patterns we are seeing because we might be seeing those patterns in our classrooms."* As the dialogue continued, the teachers expressed a similar understanding of how they defined a PLC's role. Sharing best practices was standard among the responses of the participants. Ms. Price mentioned how important she believed it was to reflect on what they are teaching and are the students learning. She added by saying:

> *"I think an important part of a PLC is time for reflection; to reflect on what's happening. And I feel like maybe in our case, we need that more. How did the lessons go? Was it great, or was it terrible? It worked for my kids, or it didn't work for my kids. I feel that we miss that."*

Teachers need the opportunity to collaborate, develop instructional strategies, and share best practices to work together in a PLC and increase student achievement (Hord, 1997). The teachers continued to express their views on what makes working as a team in a PLC setting. Ms. Edwards, for example, added: "*When teachers plan together, it provides reliance on each other to develop and share new and innovative teaching strategies to improve students learning and growth in a subject in which a teacher may not be an expert*."

From a different perspective, Ms. Stratford, the grade-level administrator, saw a PLC as a place where teachers get the opportunity to learn the district's curriculum standards the way they were meant for teaching and learning. She went on to describe a PLC by saying, *"It is being able to use all the materials and resources that have been provided to us from the county office, from analyzing the standards to common assessments and everything else."*

Overall, the teachers shared similar descriptions of what they perceived to work in a PLC setting. The team engaged in open dialogue and provided specific feedback to each other's views of working in a PLC environment.

Theme 3: Incorporating job-embedded learning can impact teachers' efficacy in instructional practices.

Beginning with Cycle I and continuing through all three action research study processes, job-embedded learning was vital to sustaining a cohesive PLC. Job-embedded learning can be both formal and informal. Teachers learn from teaching their students while analyzing their work, then engaging in conversation with their colleagues to further investigate student work during their grade level collaboration (Zepeda, 2015).

An essential part of providing job-embedded learning was utilizing the instructional coach and the math content specialist. Both staff members worked together to establish the shared norms and protocols within the grade-level PLCs. They led the PLC weekly sessions with established processes for teachers to work on road maps, lesson planning, analyzing student work, and constructing and analyzing common assessments. Job-embedded learning has been a practice that the school has implemented over the last five years. Ms. Robinson, the instructional coach, said this during the focus group meeting:

> "*One of the things that we did well last year in our PLCs was that we did a lot of work with formative assessments with math, and we brought that student work back, and we analyzed work samples, and we made small groups plans for instruction based on those data results."*

The teachers agreed that focusing on student learning, looking at student work, analyzing data, and having others share best practices or model lessons can enhance collaborative teamwork.

Incorporating job-embedded learning became a priority when the school became a Targeted School based on low math and reading state assessment scores. The district's math department assigned Ms. Belcher, the math content specialist, to support the collaborative learning process. During the focus group meeting, Ms. Belcher commented about what she had noticed about our current PLCs by adding:

> *"Two practices that are effective within our PLCs are 1) that teachers get a chance to collaborate to improve instruction, to increase student achievement, and to ensure that variability is reduced from classroom to classroom, and 2) that the teams have a clear purpose and structure."*

The instructional coach and the math specialist conducted data analysis protocols to allow the teachers to examine the students' work, review the standards, and determine any misconceptions they may have encountered.

As part of a school-wide initiative, the school created a Math and Literacy Leadership Team (MLT). Two members of our Action Research Team were part of these leadership teams. The leadership team's purpose was to spend two days conducting classroom observations to learn about using formative assessment data to establish small groups. Throughout the first day, the team observed a variety of approaches to small group instruction. After the first walkthrough in October, the team members had a chance to reflect on their classroom observations. Ms. Price had the opportunity to visit a kindergarten classroom and noted:

> *"Wow, I have been teaching fifth-grade all my career, and to be able to observe a kindergarten teacher, and see her engage the students with math problem-solving, blew me away. I could not believe the students were able to problem-solve at that young of an age."*

The MLT observed all grade levels during the two-day classroom observations. At the end of each session, the teachers had to reflect on a few questions and provide their feedback. One post-observation question asked if they believed the learning from the classroom visits would impact their instructional practices? Ms. Preston spoke about how she learned that there is not just one way to conduct small groups. She enjoyed seeing the differentiated instruction during independent practice, both paper pencil and digitally. She went on to say:

> *"I have gained insight on how to explicitly model literacy skills, how to work with children in groups to develop literacy skills, and how to work with my colleagues. I was allowed to watch others teach. I feel very honored to see the strengths that other educators offer to our school. The best takeaway from this experience is that I learned how to use an interactive read-aloud and engage students in rigorous literacy activities."*

The instructional coach provided insight into how she viewed the takeaways from the leadership teams' classroom walkthroughs. She noted how the group selected a few essential parts of the balanced literacy or balanced numeracy framework and worked on a component that the group believed would be something they can work to improve. At the end of the first professional development day, she shared with the action research team the following:

> *"Overall, the day of learning, combined with the classroom visits, helped build capacity among team members about small group instruction. This has become evident in recent CLT meetings in which leadership team members have shared some of their learning with their colleagues."*

In all, the teachers enjoyed having the coach and math specialist contribute to the PLC process. Responses from the AR Team indicated that they view job-embedded learning as one way for teachers to enhance their self-efficacy and to improve their craft. Although the math

content specialist is not permanently part of the school's staff, the team expressed appreciation for her support and considered her work instrumental to an overall improvement.

Summary of findings for Research Question 1

This action research study examined effective collaborative processes among teachers in a Professional Learning Community to explore whether the PLC's collective measure impacted teachers' perceptions of self-efficacy. Tschannen-Moran (2014) found that when teachers feel more confident and develop a strong sense of self-efficacy, they believe in their ability to influence student learning and to make a difference in student outcomes and achievement.

Analysis of qualitative and quantitative data sources indicated that working in a collaborative setting within a PLC is perceived to be effective. The results from the Teacher Sense of Efficacy Scale, the pre-and post-scores, revealed that the perceived efficacy levels increased slightly between August 2020 and January 2021. 80% of the respondents showed an increase in overall efficacy levels. The changes in efficacy levels ranged from a decrease of 0.8 points to a rise of 2.0 points. One key data point was that in *Efficacy in Instructional Strategies,* 70% of the teachers presented improvements, and 30% of those teachers showed increases ranging from 1.0 to 2.8 points.

The AR Team participated in a focus group interview to further understand their perceptions of and experiences with PLCs. They had an opportunity to define their meaning of a PLC. Teachers expressed that they valued opportunities to engage in constructive dialogue, reflect on and improve their instruction, and become more effective through engagement with other teachers. The teachers stated that working collaboratively within a PLC allowed them to share best practices, engage in analyzing student work, and identify patterns of student misconceptions across the grade-level. Another notable description of a PLC is when teachers

get to plan together; they rely on each other to develop and share new and innovative teaching strategies to improve students learning and growth in a subject in which a teacher may not be as strong. The AR Team's prevailing response was that they understood their role in working in a PLC and that it increased their self-efficacy by working collaboratively.

And lastly, incorporating job-embedded learning can have a significant effect in enhancing a PLC. Utilizing the instructional coach and the math content specialist provided direction and guidance for the team. They led the weekly collaborative sessions and helped establish processes and protocols. The primary focus was assisting with the curriculum road maps, lesson planning, analyzing student work, and constructing and analyzing common assessments.

The teachers suggested that having the instructional coach and math specialist at all the sessions provided much support to analyze student work, create robust lessons, and examine common assessments. Two Action Research Team members participated in classroom walks to observe other teachers using various teaching strategies in their classes. After the classroom walks, they had a chance to debrief and share their takeaways from the observations. A few topics mentioned were how there are multiple ways that a teacher can arrange their small groups. Others enjoyed seeing teachers using the district's online resources for planning their small group instruction. One teacher added that she will now use her RTI plans when pulling her small groups.

Research Question 2: Participation in a PLC and its impact on teachers' instructional practices in the classroom.

To determine how teacher participation in a PLC can affect their instructional practices, we collected relevant qualitative and quantitative data from a focus group interview and a

collaborative team self-assessment. The AR Team also participated in an interview questionnaire, read pertinent literature on PLCs, and analyzed student performance on a math assessment. From this analysis, three themes emerged:

1. Team accountability is an essential characteristic of an effective PLC.
2. Collaborative data analysis by teachers in a PLC can yield lessons for the implementation of improved instructional practices.
3. Finding time to incorporate best practices within a PLC is a challenge.

Theme 1. Team accountability is an essential characteristic of an effective PLC.

During this first cycle, the AR Team completed the Collaborative Learning Team (CLT) Implementation Self-Assessment (MCPS, 2019). This self-assessment comprised a four-part survey that focused on *Team Structures*, *Team Accountability*, *Team Norms,* and *Continuous Quality Improvement* within a collaborative learning team. The purpose of this self-assessment was to have the participants rate the stages of their current collaborative learning team within their PLC. Those stages were *Group of Individuals*, *Collaborative Group Getting Work Done*, and *Collaborative Learning Team*.

With the limited time in place for this action research study, the Action Research Design Team recommended focusing on one section of the assessment and work on those indicators for that area only. The AR Team elected to go with the *Team Accountability* section. Then, in January 2021, they rated themselves again on the post-self-assessment to compare their pre-and post-results ratings. Table 15 below shows the three stages along with the indicators assessed. To understand the scoring, the *Group of Individuals* was worth one point, the *Collaborative Group Getting Work Done* was worth 3 points, and *Collaborative Learning Team* was worth 5 points.

Table 15

Collaborative Learning Team Implementation Self-Assessment—Team Accountability

Team Accountability "Look Fors"			
Indicators	**Group of individuals**	**Collaborative Group Getting Work Done**	**Collaborative Learning Team**
Team Leaders	External leader(s); team members comply	Internal leaders(s); team members comply	Internal leader(s); distributed leadership among the team
Shared Accountability	Team members are not accountable to the team	Team members share strategies but are not accountable for implementing new learning	Team members demonstrate a shared responsibility for all students and hold one another accountable for implementation
Team Roles	No Identified roles	Limited roles such as leader and note taker; roles are fixed; focus ins on efficiency	Varied roles based on team needs; roles promote team learning
Team Measurement	Individual teachers measure their students' performance	Team measures all students' performance with summative assessments; diagnostic only	Team measures all students' performance using a variety of assessments to improve practice; cycles of continuous improvement

As the AR Team worked on specific processes and protocols for their PLCs, they noticed what they currently had in place and tried to adjust throughout the study. Table 16 below shows the post-self-assessment results.

Table 16

Scoring for CLT Self-Assessment Team Accountability Category (Post)

Team Accountability Post						
Teacher #	**Team Leaders**	**Shared Accountability**	**Team Roles**	**Team Measurement**	**Total Points Per Teacher**	**% Per Teacher**
2B	5	5	1	5	16	80%
3Q	3	3	3	1	10	50%
4J	5	3	5	3	16	80%
5H	5	3	3	5	16	80%
6R	5	5	3	5	18	90%
7P	5	3	3	3	14	70%
8S	3	3	3	3	12	60%
9P	3	5	5	5	18	90%
10E	3	5	5	5	18	90%
11L	5	3	1	5	14	70%
Average	42	38	32	40	152	76%

As we analyzed the results, we notice that in *Team Roles*, 20% of the teachers rated this stage as one point, which indicated that their collaborative team did not have identified roles. Whereas 30% of the teachers gave this stage a full five points, which told they had varied roles based on team needs, the roles promoted team learning. Looking further into the results, 60% of the teachers rated *Team Leaders* and *Team Measurement* with a full five-point score. As shown in Table 17 below, the overall results show an average point rating at 3.80 points, with an increase of 0.55 points. As we look at the percentages, the overall results show a rise of a 12% gain.

Table 17

Collaborative Learning Team Self-Assessment Pre and Post Results

Team Accountability	*Aug-2020 (1-5)*	*Jan-2021 (1-5)*	*Difference*
Total Averages	3.25	3.80	0.55
Total Points Percentages	64%	76%	12%

After analyzing the results from the pre- and post-self-assessments, the AR Team reflected and concluded that the results accurately reflected their collaborative teams' ratings. One member said she rated a score of one point on the *Team Roles* because she is not always in the PLCs due to her split schedule, so she did not know or get to see the established roles within the PLC. Overall, an analysis of participant responses in the area of *Collaborative Group Getting Things Done,* indicated 12% growth in this area throughout the study. Participants expressed optimism for continued growth in this area through enhanced PLC processes and structures.

Theme 2. Data analysis is critical to improving instructional practices.

Working in a collaborative setting, the AR Team incorporated looking at student work and analyzing formative and common assessment data as critical to driving their classroom

instruction. During the focus group meeting in Cycle I, a crucial topic focused on student learning. The teachers believed that all students could learn at reasonably high levels. With a strong professional learning community, this focus is not enforced by rules but by mutually felt obligations among the teachers (Kruse et al., 1994).

One of the questions on the focus group interview asked, "What do you believe is the number one challenge facing our 5th-grade students in mathematics? Overwhelmingly, the participants spoke about student work and genuinely analyzing the data to break down the areas in which students did not meet mastery. Some teachers felt that there was not enough time in the PLC to review the data. They expressed they wished there were more time outside of a small group environment to go over the assessments with the students and provide them immediate feedback. Ms. Quintana added:

> "*Obviously not the district assessments, or what have you. But whether it's some of the skill practices. Because, to me, that's more than just a small group type thing; it's going over what they were just assessed on, and I feel like part of that loop is missing in how we are structured this year. More so than years in the past."*

As the assistant principal over the grade level, Ms. Stratford mentioned:

> "*Not only does the team need to look at it from an individual class but as a grade level as well. Especially going over the data that we already have recently and identifying which specific standards and which parts we're having deficiency so they can be refocused on and re-taught.*

Teachers mentioned that due to COVID-19 and the push for more digital resources, the district created lesson videos for teachers. They enjoyed these added resources and shared the

videos with their students by posting them on the digital platform so students could access them at any time.

Another point that teachers made about data analysis was the importance of finding ways to provide the students' interventions. Ms. Lind mentioned that she appreciated the time to have the small group instruction time for her students. However, she felt that having a more structured intervention, in which each team member is involved in breaking down the students based on their understanding levels, would provide more targeted support.

Ms. Preston agreed that coming together in a PLC to talk about student data allows teachers to share and talk about common patterns or misconceptions noticed in each other's classrooms. She went on to say:

> *"I think that that's also a big part of PLC meetings is being able to share that data, so we know how we can improve, or we can go back in and re-assess or maybe even enrich for next year or next semester."*

Throughout this action research study, it has been a challenge due to required adjustments for COVID-19 accommodations. The district postponed its quarterly benchmarks for the 2020-2021 school year. These assessments are a critical part of the planning and the driving force of the school improvement plan. Another key factor was having only 60% of the students in person and 40% on the digital learning platform. Switching Students from one learning platform to another skewed the data, with some students having changed teachers a few times. In some cases, students changed learning platforms up to three times.

However, a few teachers mentioned that we should not just focus on the benchmarks for analyzing data. Results from common assessments and formative assessments were suggested as

crucial information for enhanced instruction and student learning. Ms. Lind added that she prefers her local assessments over the benchmarks as she said:

"*If our students are struggling with what we already know, we know those questions, and we've been modeling those questions as well, then I think that's important as well to see how we can make it better? What did we miss? Why didn't our students understand these questions that we specifically went over?"*

The group expressed that analyzing the data and sharing the data analysis with the team helped build a more substantial capacity because they learned from each other and shared best practices using the data to improve their instruction.

Theme 3. Finding time to incorporate best practices within a PLC is a challenge.

Data from the focus group interview feedback and the personal interview questionnaire in January 2021 informed us that finding time to implement best practices within a PLC was challenging. Throughout the study, the AR Team read ten articles of literature related to PLCs. They stated that they found value in the various descriptions of how successful PLCs function and the things they implement within their PLCs. One practice that stood out to a few members was finding time to reflect to improve student learning. Ms. Quintana noted,

> "*To be able to sit with other teachers and get some other ideas on ok, well what worked for you, what didn't work for me, and vice versa, sharing our strengths. But it is that being able to have time for reflection, instead of trying to do it at midnight at home, by myself."*

Other teachers expressed how they could get so much accomplished if they had an extra day of planning set aside for reflection and student work analysis. Ms. Price added:

"*Having time to analyze student work, revisiting the standard being addressed, and adjusting instruction, learning the strengths and their needs, and adjusting instruction, would allow us to make adjustments to our instructional strategies."*

Ms. Jamerson pointed out that their PLC was much different a few years ago and felt they did more reflection, more lesson modeling, and more analyzing student work samples. With the district office's many initiatives, the AR Team suggested that having the lessons more scripted for the mini-lesson and active engagement, took away individual teachers' creativity. The group said a lot of time was spent on lesson planning, which some teachers felt they had mastered that part, and it took away crucial time that they could have been doing other things within the PLC.

One question on the focus group interview asked teachers to identify one barrier that impacts their PLC. Time was at the top of the list. Ms. Lind mentioned, *"there's never enough time. We barely can use the restroom during the day, let alone get all that we need to get done to better our teaching."*

Dr. Holmes added her point to the lack of time by saying:

"*Having days where certain teachers present techniques that they use in their classrooms that work well—or modeling specific standards or all coming together and focusing really hard on a plan for the unit, things like that and just having more opportunities to do that. We don't have enough time. No matter what we do, we just don't have enough time."*

The AR Team agreed that they would like to add one day to the planning week to work on other important things besides solely focusing on lesson planning. They said, designating two days a month to reflect, analyze student data, and share or model ideas on some instructional strategies that work would improve the overall efficiency of the PLC.

Summary of findings for Research Question 2

To determine how teacher participation in a PLC may impact instructional practices in the classroom, the AR Team collected relevant qualitative and quantitative data from a focus group interview, a collaborative team self-assessment, and a personal interview questionnaire.

Analysis of feedback from a Collaborative Learning Team (CLT) Implementation Self-Assessment revealed that the teachers rated their collaborative learning teams' current stage at the level of *Collaborative Group Getting Work Done.* They had a chance to focus on the Team Accountability part of the overall instrument. Based on the four indicators, the overall ratings indicate that the PLC is robust and is at the middle stages. They did not see themselves working as individuals, but there were still areas for improvement to get to the highest stage in which they were indeed a *Collaborative Learning Team.* In comparison to the pre- and post-assessments, the overall score went up by 12%. One indicator that stood out as needing some improvement was that of identifying team roles. The AR Team agreed that moving forward and establishing roles within the PLC helped guide the team's collective efforts.

Another key theme that emerged was incorporating the use of data analyses to drive instruction. Teachers felt that looking at student work and analyzing formative and common assessment data was critical to driving their classroom instruction. The teachers highlighted the importance of using data analysis to help find areas in which students need interventions. Understanding the data would allow for a more structured and targeted intervention.

COVID-19 altered the regular school routines, and the staff had to teach students both face-to-face and digitally. Assessing student learning became a challenge with having many students switch from classrooms two to three times. Teachers believed that having time to look at

student work in their PLCs allowed them to identify strengths and weaknesses and to work on student misconceptions.

Lastly, the team shared that finding the time to work on different parts of an effective PLC was challenging. The literature review on effective PLCs revealed some keen insights into how PLCs function and how they create processes and norms to get things done collaboratively. The AR Team expressed that they could get so much more work done if they had the time. Possibly adding an extra day to focus on student work or modeling teacher instructional practices would be better served than solely working on lesson planning.

Research Question 3: What does the action research team identify as the essential components of developing an active PLC in an urban, Title I elementary school?

To determine the essential components of developing an active professional learning community at the school, the action research team analyzed quantitative data from a focus group interview, teacher reflections, classroom observations, and a personal interview questionnaire. We then compared it with quantitative data from three surveys; the Teacher Sense of Efficacy Scale (Tschannen-Moran & Hoy, 2001), Collaborative Learning Team (CLT) Implementation Self-Assessment (MCPS, 2019), and the Collaborative PLC Survey (Kruse et al., 2017). Through analysis of these data, two themes emerged:

1. Leadership support plays a significant role in establishing and sustaining an effective PLC.
2. Implementation of protocols and structures with a commitment to continuous improvement are the key drivers to an effective PLC.

Theme 1: Leadership support plays a significant role in establishing and sustaining an effective PLC.

At the end of the action research study cycles, the AR Team completed a 10-question personal interview questionnaire. One of the questions asked about the school administrator's role in supporting a PLC. The information attained from their responses provided excellent insights into the teachers' perceptions of their administrators' impact.

Common answers that emerged from the group pertained to the structures and processes of the current PLCs. As the school administrators, they create the time and space to collaborate and provide opportunities to share and observe one another. The administrators generate and oversee the master schedule and provide the times for teachers to plan. They also provide the resources needed and a shared space for teacher collaboration. The room should be large enough to allow teachers to work in teams and have available resources at their disposal. With the new structures in place for virtual planning, the administrators would have to provide the resources to meet and conduct collaboration on the digital platform. When the researcher first arrived at the school, one of the first things he observed was that teachers held their PLCs in the grade-level chair's classroom. Often, the teachers were distracted because the layout of the space was not conducive to collaborative work.

Another critical factor indicated by the teachers was that the administrators must establish goals and hold the team members accountable. The school leader must set the overall goals that they want from their collaborative work. Ms. Robinson mentioned, "*the school administrator's role in a PLC is to communicate the expectations of the PLC and make sure structures and processes are in place to make the work successful."* She expressed that once goals and protocols have been established, it is crucial for the administrator to be a participant in the learning

alongside the teachers. Ms. Belcher mentioned that the administrators would need to provide the time and space to collaborate and provide opportunities for teachers to share and observe one another. She went on to add:

> *"Administrators should be monitoring that the learning from PLCs transfers to the classroom. Encouraging risk-taking and being supportive as teachers try new things as they are learning. They should also encourage celebrating success and continue to help build trust among team members and be vulnerable to show that we are all learning together."*

A concern brought up by a few members was the importance of having the administrators hold people accountable for their part in the PLC. They felt that if most team members do their part and have a member or two, who do not contribute to the collaborative teamwork, then the learning process will be less effective. Ms. Jamerson provided her feedback by saying:

> *"In addition, it is the administrator's role to check for implementation of the PLC work in classrooms, teachers need to be held accountable for executing the work of the PLC in their classrooms, and they should be given timely feedback so that they can continue to improve. Administrators who are all in during the PLC will be able to provide effective feedback to teachers."*

Another valuable fact shared by the group was that the administrative team should be part of the collaborative learning team as an active participant. Depending on the administrator, some are more involved than others. Some of the administrators provide feedback and share their content expertise, while others sit in the room and work on other businesses not related to the PLC's work. Ms. Edwards added her perspective by saying, *"a leader's previous experience can support a PLC with options for instructional strategies for those that need it. Leaders can bring*

outside resources to the PLC." Others agreed that the administrators should be active participants and not be off to the side on their computer, not engaging with the team. Ms. Robinson shared her thoughts by adding:

> *"The Admin. Team should participate in the collaborative teamwork and not just sitting in the room working on other tasks, but truly rolling up one's sleeves, asking questions, and contributing to the conversation about teaching and learning. Being off to the side sends the message that they are just there to supervise, which can hinder the team's trust atmosphere."*

Ms. Quintana also joined in and provided feedback by saying:

> *"I also believe that when leaders are participants, they are a member of the PLC. That means they are analyzing, appraising, examining possibilities, deciding, and sharing responsibility for student success along with the other members of the team. When a PLC is examining student work samples and achievement data, the participant leaders own the results equally with the other members."*

The consensus stated by the action research team was that the school leaders play a significant role in supporting the PLC process. The more involved they are, the more influential the structures and collaborative work will be.

Theme 2: Collaborative data analysis by teachers in a PLC can yield lessons for the implementation of improved instructional practices.

As the AR Team analyzed data from the focus group interview and the personal interview questionnaire, we also collected a quantitative data sample from a PLC survey. The survey examined factors within a PLC, such as critical elements, human resources, and structural conditions.

One of the interventions implemented for this action research study was for the AR Team to review the research literature on PLCs. The articles were short reads but powerful enough to garner their interests and gain more insight into the work that creates effective PLCs. After reading a few articles, some team members shared their thoughts about the literature during our focus group interview. Ms. Quintana stated, *"Based on the articles that you gave us to read from the last time, I think for me; personally, I would love to gain that reflection part that we brought up several times to improve instruction.*"

Ms. Price also added to the conversation by saying:

> *"I actually underlined that kind of thing in this article. Having time to analyze student work, revisiting the standard being addressed, and adjusting instruction, learning the strengths and their needs, and adjusting instruction. And I think we all teach it in a particular way because we're different people, but to watch someone else. I love having a chance to watch other teachers teach."*

Other members enjoyed learning about effective ways to implement efficient PLCs, but they felt that time and school structures would play a major role in how effective the PLCs can be.

Teachers were asked to describe their PLC definition and to describe essential characteristics of an effective PLC. Most agreed that having a shared mission, vision, values, and goals, collaborative teams focused on learning, and a commitment to continuous improvement were critical components to a proficient PLC structure. Others pointed out that collaboration, commitment, flexibility, a focus on teaching and learning, and academic achievement were key factors. Out of the descriptions provided by the team members, Ms. Edwards provided a thorough explanation of a PLC by saying:

"PLCs allow teachers an easy way to share best practices and brainstorm innovative ways to improve learning and drive student achievement. Good communication between stakeholders is a critical element in a PLC. A PLC empowers the teachers to be committed to the student learning outcome. The weekly meetings create a bond and build a team of leaders within the school."

Overall, the teachers related enjoyment and learning from the articles and expressed that we should provide some of the articles to the rest of the teachers in the school to understand PLCs better and improve our current practices.

Another form of data collection was having the AR Team complete the PLC Survey. The survey asked for participants to assess the extent to which each of the major factors associated with the professional learning community—*Critical Elements*, *Human Resources*, and *Structural Conditions* existed in their school. The teachers rated themselves on 15 elements for the three categories mentioned above. The survey ranged from a scale of 1 (None at all) to a scale of 5 (To a great extent). Table 18 below shows the team's selections for the *Critical Elements* part of the survey.

Table 18

Professional Learning Communities Survey Results: Critical Elements

	Critical Elements					
Teacher #	Reflective Dialogue	De-Privatization of Practice	Collective Focus on Student Learning	Collaboration	Shared Norms and Values	Mean Per Teacher
2B	4	3	4	4	4	3.8
3Q	3	2	3	4	3	3.0
4J	4	4	5	5	4	4.4
5H	5	1	4	4	4	3.6
6R	5	4	3	5	5	4.4
7P	3	2	4	3	3	3.0
8S	3	3	2	3	4	3.0
9P	4	3	5	4	5	4.2
10E	4	5	5	4	5	4.6
11L	5	4	4	5	5	4.6
Average	**4.0**	**3.1**	**3.9**	**4.1**	**4.2**	**3.86**

Under the element *De-Privatization of Practice,* 30% of the teachers rated this category a 1 (not at all) or a 2 (somewhat). The description of this category states: Teachers share, observe, and discuss each other's teaching methods and philosophies. However, it was interesting to notice that 70% of the teachers rated this category at the 50% range. One teacher ranked it a total of five points. However, under the *Norms and Values* category, teachers affirm their common values concerning critical educational issues and support their collective focus on student learning through words and actions. In this area, on the scale of 1-5, the group's mean score was 4.2, which indicated that they rated their PLCs at the scale level of "to a large degree."

In the next category, *Human Resources,* as illustrated in table 19 below, we notice that 20% of the teachers rated the elements *Trust and Respect* and *Socialization* at a level 2, which indicated they rated this area at a scale level of "somewhat." In the element *Trust and Respect,* the description reads as follows: Teachers feel honored for their expertise within the school and within the district, the parent community, and other significant groups. Under the *Socialization Element*, the description here reads: The staff imparts a sense that new teachers are an essential and productive part of a meaningful community. In the *Trust and Respect* element, two teachers rated the element at a 2 (somewhat). However, an overall mean score of 3.86 indicated the team rated their PLCs at the level 3 (50%) range. Overall, under the *Human Resources* category, 90% of the teachers rated their PLCs at the level of 50% or higher, with 60% of the teachers rating the category at a level 4 (to a large degree).

Table 19

Professional Learning Communities Survey Results: Human Resources

Human Resources						
Teacher #	Openness To Improvement	Trust and Respect	Cognitive and Skill Base	Supportive Leadership	Socialization	Mean Per Teacher
2B	4	4	4	4	4	4.0
3Q	4	3	2	4	4	3.4
4J	4	3	4	5	5	4.2
5H	3	4	3	4	2	3.2
6R	4	5	5	5	3	4.4
7P	3	2	3	4	2	2.8
8S	3	2	4	4	4	3.4
9P	4	4	5	5	4	4.4
10E	4	5	4	5	4	4.4
11L	4	5	4	4	5	4.4
Average	3.7	3.7	3.8	4.4	3.7	3.86

In the last category, *Structural Conditions*, as shown in Table 20 below, the overall mean was 3.8, which rates the PLC at least 50% among the five elements. The one component of a slight concern was *Independent Teaching Roles* which reads as follows: There are recurring formal situations in which teachers work together (team teaching, integrated lessons, etc.). Here, 20% of the teachers scored the PLC at level 2 or below. With 90% of the teachers scoring in the 50% or higher range.

Table 20

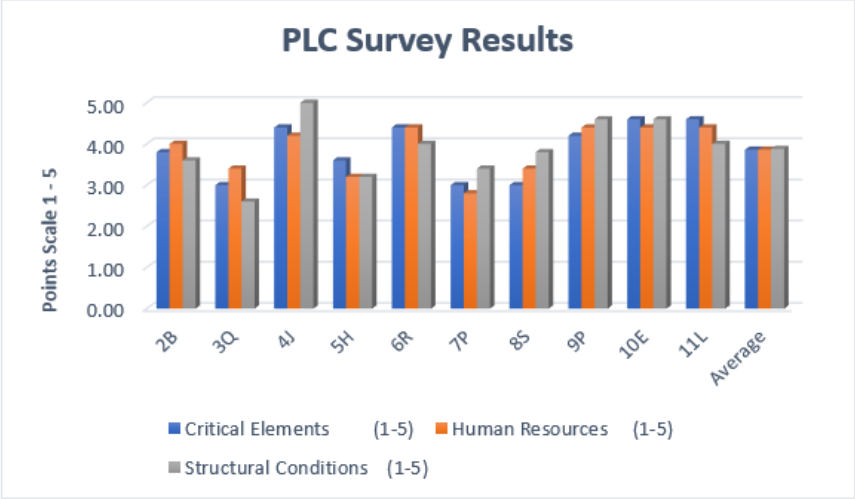
Professional Learning Communities Survey Results: Structural Conditions

Structural Conditions						
Teacher #	Time to Meet and Talk	Physical Proximity	Independent Teaching Roles	Communication Structures	Teacher Empowerment and School Autonomy	Mean Per Teacher
2B	4	4	2	4	4	3.6
3Q	2	3	3	2	3	2.6
4J	5	5	5	5	5	5.0
5H	5	5	1	2	3	3.2
6R	3	5	3	4	5	4.0
7P	4	4	3	3	3	3.4
8S	4	4	4	4	3	3.8
9P	4	5	4	5	5	4.6
10E	4	5	4	5	5	4.6
11L	4	4	4	4	4	4.0
Average	**3.9**	**4.4**	**3.3**	**3.8**	**4**	**3.88**

Overall, we gathered valuable information from the PLC survey. The AR Team believed the comprehensive examination of our current structures within our PLC s is in direct alignment with the other data collected from the analysis methods. This survey provided a solid foundation for the team to note how they and their team rate their current PLCs and have a benchmark to improve their process and structures. Figure 12 below displays the overall results of the three categories by each participant.

Figure 12

January 2021, PLC Survey Results



As we closed out the action research study, the AR Team took time to reflect by completing the personal interview questionnaire and reflect on some of the takeaways they had from conducting this action research study during our final AR Team meeting in January.

In concluding the action research study, nine members of the ten completed the personal interview questionnaire. One member, unfortunately, was on leave during this period due to personal reasons. This 10-question questionnaire provided such valuable feedback that will help

drive our efforts moving forward to improve our current PLC practices and structures school-wide.

Much of the feedback from the responses aligned to other data already shared throughout this study; however, three important areas stood out from this data. The first critical area identified were the barriers that the teachers believed hindered our current practices. One obstacle, for example, is not regularly monitoring and reflecting on the PLC's effectiveness. PLCs should be a continuous cycle of improvement, just like instruction. Teachers must continue to strive for improvement. If a teacher puts in less effort, then the students will do the same. Also, building a sense of cohesion among the team was an area of concern as Ms. Belcher added, "*I also believe that it is important to build community and trust, celebrate successes, and the absence of this will result in more ineffective PLCs."*

Other concerns shared were open and honest communication, willingness to change, adjusting teaching methods, and trying new things. Member participation was also an area of concern. Team members must be willing to engage in the PLCs and be open to sharing, learning, and trying new strategies. Teachers must continue to strive for improvement, and if a teacher puts in less effort, the students will do the same. Along with participation, they expressed poor communication, and not having team norms were also barriers to an effective PLC.

During the focus group interview and again during this reflection survey, time also was mentioned as a barrier. The teachers felt that the planning period of approximately 35 minutes was not enough to accomplish the team's goals. Ms. Lind added:

> *"One barrier to implementing and sustaining an effective PLC is time. There is never enough time to get everything done that we want to get done. I also think a state of mind*

is another barrier. A lot of times during plc, we are not in the correct state of mind after teaching all day to jump into lesson planning and discussing future plans."

Other members also talked about the essence of having enough time during planning, as stated by Ms. Robinson:

"I think we have good structures in place for PLCs. However, we cannot have effective PLCs covering all teaching and learning areas in just 40 minutes a week. Teachers need to understand that they can meet any day of the week during planning, not just during their "mandatory" collaborative planning time."

The participants mentioned lesson planning and the methods of teaching those lessons as a potential obstacle. Some participants shared that the practice of creating scripted lessons, where everyone sounds the same and delivers the same way of teaching the lesson, takes away from creativity and tailoring the lessons to their students. Ms. Edwards mentioned:

"With my flexibility, I feel like I am stuck with a guide of a script. I am using a lesson crafted by another teacher. I feel like I am stuck with a formula. Hence, it limits the teacher's intuition that brings about the creativity that will meet the students' needs at that moment. Also, the expectation of being unable to construct my lesson plan to fit in with my students learning abilities. All students learn differently."

The teachers' consensus shows that teachers work well in their current PLC; however, after engaging in this study, they will need to look closely at their current practices and PLC structures and adjust or tweak some of the identified barriers. Ms. Robinson summed it up by saying:

"A shared vision is important, as well as very clear expectations about the expected outcomes. Teachers often have differing philosophies about how to approach education,

and while a variety of experiences can be beneficial, it is still necessary to align our philosophies with the vision and mission of the district. There are some elements that we must accept, such as curriculum, pacing, and rigor. It takes a lot of level setting and ongoing professional learning to get everybody on the same page."

In closing out the questionnaire, we asked the team what they believed were the essential components of developing an effective PLC at Coronado ES. Responses to the questionnaire aligned to data collected from quantitative research instruments. Things like trust, effective communication, openness to learning, a shared value that all students can learn at high levels were the most common responses. They emphasized that the focus remains on student learning and a culture of continuous improvement. Dr. Holmes added, *"The participants' willingness to participate, try new strategies & share. Analyzing data & student work consistently to drive instruction and goal-oriented and research-based."*

Another critical area discussed was having the team shared vision, values, and norms among the team. Protocols provide a structure for the team to practice reflective dialogue, focus on student learning, interaction among teacher colleagues, and most importantly, collaboration. Ms. Stratford added, *"Creating a collaborative setting where the focus is on student learning and sharing of ideas and best practices will help our current PLCs' efficacy."*

In rounding our next steps for enhancing current practices, some of the members shared that we must focus on setting team norms, sharing the same vision, and working through issues with respectful communication. Also, it is imperative to analyze student work and the success of lessons. An additional component would be sharing teaching strategies or watching each other teach. Ms. Edwards added by saying,

"Learning from others in PLC allows teachers to reflect on ways to enhance their teaching and adjust their practice. The more minds that come together from different backgrounds, the more likely you are to add value and purpose to the field of education."

Other final essential components mentioned for developing an effective PLC at Coronado ES were more time for intervention and re-teaching specific skills. And finally, lesson plans were a key area of focus, as mentioned by Ms. Lind, "

"I believe that stabilizing lesson plans and making them consistent year to year will deepen our knowledge of the curriculum standards and add more elements to our teaching and lessons as we gain more research, insight, and resources."

During our final AR Team meeting, the participants shared their experiences. They showed appreciation for the work they are currently doing and discovered areas that they can work together to improve. They expressed that scheduling time to review student work, analyze assessment data, and share ideas will improve their collaborative learning team. Also, finding time to accomplish all needed to meet their overall group goals was of the essence. The AR Team suggested that we continue improving our practices and expanding them to the other teachers in the school.

Summary of findings for Research Question 3

To determine the essential components of developing an active professional learning community at the school, the action research team analyzed quantitative and qualitative data from a focus group interview, teacher reflections, classroom observations, surveys, and a personal interview questionnaire. Each data collection method provided essential information to inform our problem of practice.

In the first identified theme, the teachers noted that leadership support plays a significant role in establishing and sustaining an effective PLC. Effective administrators create a learning environment for teachers to meet for collaboration. They engage in the PLC process and not be in a supervisory role but more as a group participant. And finally, the administrators promote accountability among the PLC members so that the teachers remain focused on student achievement and continuous improvement.

In the second theme, teachers agreed that having protocols and structures with a commitment to continuous improvement are the essential drivers to an effective PLC. Data analysis from a PLC survey, a personal interview questionnaire, and team reflection during a team meeting provided needed feedback to grasp a sense of the teachers' perceptions of our current PLCs.

First, the teachers shared their thoughts about what they took away from the literature review, described current practices and structure, and gave insight into making things better. They read about ways other systems utilize PLCs to drive student instruction. The teachers highlighted some of the literature and compared it to the current processes and structures within their existing PLC.

The PLC survey data showed how the participants rated their current PLCs based on three areas, *Critical Elements*, *Human Resources,* and *Structural Conditions.* The AR Team believed the survey provided an accurate outlook of their existing structures within our PLC. Analysis of results provided a benchmark for them to move forward in improving their current systems. Some of the elements identified with strong positive results were shared norms and collaboration, supportive leadership, and teacher empowerment. Areas of concern that emerged from the data were de-privatization of practice, trust and respect, and independent teaching roles.

Finally, the team had a chance to share their thoughts on some of the essential components of an efficient PLC and provided feedback on what they learned from this action research study. The consensus indicated that the current processes and structures in place are good, but there are areas for improvement. They stated that it begins with a shared vision and norms, and the team must focus on student learning and continuous improvement on the teaching and learning.

Chapter Summary

This chapter portrayed the action research team's perceptions about professional learning communities and how they believed participation in a PLC impacted their professional development and classroom instruction in a Title I Elementary School. Through a combination of qualitative and quantitative data collection methods, members shared information and supported their perceptions that working collaboratively as a group added to their collective self-efficacy.

Using three guiding research questions, which resulted in eight identified themes, the AR Team provided important information about their current structures and processes on their existing PLC. The findings indicated that working in a collaborative setting within a PLC was perceived to be effective. The AR Team stated that they understood their role in working in a PLC, and they thought that it could increase their self-efficacy by working collaboratively.

The focus group and personal reflections provided meaningful information in seeking the answers to the three driving research questions. The participants shared quality feedback that identified areas of strengths along with areas of weaknesses. Based on the data collection, the AR Team indicated they have a greater understanding of the work that entails having an efficient PLC. They perceived that the current state of their PLC is at the level of a collaborative group getting things done. They also noted with potential changes to their existing PLC structures and

practices, they can improve their current level from a collaborative group getting things done to a collaborative learning team.

In sum, the action research study was an effective way to learn about team members working in a collaborative setting within their professional learning communities. As a result of the action research process, the action research team discovered that they have a strong foundation in their PLC structures and practices. Based on the evidence from the multiple data collection instruments, the team perceived to be at the level of a collaborative team getting things done to better their instructional practices.

They also noted that they could enhance their PLC's current stage by revamping their collaborative teams' practices. The school administrators play a significant role in the structures and team accountability parts of PLCs. Finding the time and utilizing resources and ideas from each other will help augment their PLCs' overall strengths, leading to an efficient learning environment and supporting their general teaching and learning practices.

CHAPTER 6

Discussion of the Findings

Student achievement in schools depends immensely on the quality of teachers and instructional programs. Professional Learning Communities (PLC) has been a common practice that school systems embraced to improve instruction. PLCs provide an environment that encourages professional development, collaboration, and innovation among teachers (Brown et al., 2018). When teachers reflect on their instructional practice, consider the effect instruction has on students, and implement insights gained from meeting collaboratively to improve their teaching performance, only then can you consider a group of teachers a PLC (Pirtle & Tobia, 2014). Research suggests that effective professional learning communities enhance teacher collaboration and student achievement. Teachers work collaboratively to reflect on their practice and student outcomes and make changes that improve teaching and learning. (Voelkel & Chrispeels, 2017; Teague & Anfara, 2012).

The purpose of this action research study was to determine teachers' perceptions of Professional Learning Communities and how they believed participation in a PLC impacts their professional development and classroom instruction in a Title I Elementary School. Three research questions guided this study:

1) How does an effective collaborative process among teachers in a Professional Learning Community impact teachers' perceptions of self-efficacy?

2) How does participation in a PLC impact teachers' instructional practices in the classroom?

3) What does the action research team identify as the essential components of developing an active PLC in an urban, Title I elementary school?

Analysis and Conclusions

In analyzing the data collected from various qualitative and quantitative data collection methods, including focus group interviews, surveys, journals, observations, and personal interview questionnaire, the researcher gathered critical information to support the correlation of the findings and the literature reviewed for this action research study. DuFour et al. (2016) described how schools function as a PLC, and educators embrace high learning for their students. The researcher sought to delve deeper into the PLC process to consider the impact of engagement in an effective PLC on educators' sense of self-efficacy and instructional practice.

The conclusions from this study follow the research questions and the findings and therefore addressed four areas: (a) teachers perceived working collaboratively in a PLC setting as beneficial to their self-efficacy; (b) collaborative data analysis by teachers in a PLC can yield lessons for the implementation of improved instructional practices; (c) leadership support plays a significant role in establishing and sustaining an effective PLC; (d) having protocols and structures with a commitment to continuous improvement are the key drivers to an effective PLC. Following the discussion of the significant findings, the researcher will describe the study's limitations followed by implications and recommendations, followed by a summary and final thoughts.

This action research study first examined the collaborative process among teachers in a Professional Learning Community and its impact on teachers' perceptions of self-efficacy. The following conclusions emerged:

Conclusion 1- Teachers perceived working collaboratively in a PLC setting as beneficial to their self-efficacy.

In August 2020, the AR Team engaged in completing the Teacher Sense of Efficacy Scale (Tschannen-Moran & Hoy, 2001), and then again in January 2021. These pre- and post-scores were analyzed to compare any significant differences in their perception of self-efficacy. The data provided an overall increase in teacher ratings by approximately 80% of the post survey.

Looking further into the three factors of the Teacher Sense of Efficacy Scale, *Student Engagement, Instructional Strategies, and Classroom Management,* the individual scores provided a more substantial picture in their ratings. Twenty percent of the teachers showed a decrease on average from the initial survey. A few possibilities occurred as the many changes from the COVID-19 adjustments caused many teachers to work outside of their regular routines and forced them to adjust their teaching strategies to accommodate both in-person and digital learning students. The COVID-19 pandemic forced widespread K–12 school closures in the spring of 2020 to protect society's well-being. Kindergarten to 12th grade (K-12) school districts in the United States reacted to the pandemic in various ways based on location, infrastructure, financial resources, socioeconomics, and community needs (Kaden, 2020).

However, with 80% of the respondents showing a positive gain on the January results, many shared that having smaller class sizes in person helped them adjust to the changes. The fact that they were still able to meet collaboratively in their PLCs helped them make the adjustments and plan their lessons and instructional practices accordingly. As the AR Team members discussed the results, and they expressed an overall satisfaction with their ratings and mentioned that their scores were positive in part for being part positive collaborative learning team.

Also, an understanding of the PLC structures can help increase teacher efficacy. The AR Team met for a focus group meeting at the end of their first action research cycle. The researcher asked a set of questions to solicit their feedback about working in a PLC environment. The teachers provided keen insight based on their perceptions of how they defined a PLC and spoke about some of their current PLCs' strengths and weaknesses. Teachers who regularly collaborate toward continued improvement in meeting learner needs through a shared curricular-focused vision contribute to student learning's overall success (Reichstetter, 2006).

Professional communities build relationships between and among teachers who share students, work for more significant student learning, and create shared goals to drive their instructional practices (Lieberman & Miller, 2011; Visone, 2016). A few common descriptions of a PLC referenced a group of teachers' ability to meet and share common lessons and teaching strategies. Another teacher added her view of a PLC is where teachers plan together to develop and share new and innovative teaching strategies to improve student learning. Working in a PLC is directly related to how teachers will need to work and learn together and find the best ways to enhance their learning (Stoll et al., 2006).

Sharing best practices among the team, reflecting on what they are teaching, and asking themselves are the students' learning are some of the other key points presented by the group. The grade level administrator described the current PLC as a place where teachers get the opportunity to learn the district's curriculum standards and learn how to use all the materials and resources, from analyzing the standards to common assessments. The group was also thankful that the district created digital resources for teachers to use for their digital learning students. One teacher noted that finding time to collaborate and work on lessons and common assessments

provides reliance on each other to develop and share new and innovative teaching strategies to improve students learning and growth in a subject in which a teacher may not be as strong. The overall responses provided positive feedback on the teachers' perceptions of working collaboratively in a PLC setting.

Team accountability is also an essential characteristic of establishing an effective PLC**.** As one of the data collection tools used for this action research, the AR Team completed the Collaborative Learning Team (CLT) Implementation Self-Assessment (MCPS, 2019). The purpose of this self-assessment was to have the participants rate the stages of their current collaborative learning team within their PLC. Those stages were *Group of Individuals, Collaborative Group Getting Work Done,* and *Collaborative Learning Team*. After analyzing the initial assessment results, the AR Team decided to focus on one part of the four-part self-assessment. The team selected the *Team Accountability* section to focus on during the study and then to self-assess again in January to compare their ratings in this area.

This section encompassed four indicators, *Team Leaders, Shared Accountability, Team Roles, and Team Measurement.* In the area of Team Roles, 20% of participants reported that their current PLC did not identify team roles. They believed that they acted more like individual participants, with no specific assigned part of the group's distributed responsibilities. In a PLC, participants do not always learn how to work collaboratively or provide ongoing guidance to facilitate and utilize PLC time together. Many teachers in PLCs struggle to collaborate without defined roles (Charner-Laird et al., 2016).

However, on the other indicators like *Team Leaders* and *Team Measurement,* 60% gave the top score of five points for both sections. They viewed internal leader(s) or distributed leadership among the team as being at very high levels, levels you would see when a

collaborative team is functioning at high-efficiency levels. Teacher leaders can help other teachers encompass the school goals and understand the changes needed to improve teaching and learning and increase school improvement (Harris, 2004).

In meeting with the AR Team to discuss the data, they believed that the overall scores reflected their perspective of rating their collaborative learning teams as in mid-form—being at the stage of a *Collaborative Group Getting Things Done.* However, they indicated that revamping some of the current practices and protocols within the PLC duties and responsibilities would allow them to get better and become a fully functional *Collaborative Learning Team.*

Conclusion 2 - Collaborative data analysis by teachers in a PLC can yield lessons for the implementation of improved instructional practices.

At the core of the professional learning community concept lies the belief that merely providing instruction is not enough; educators must also ensure that students learn (Dufour, 2004). During the focus team interview and again during the personal interview questionnaire, the teachers spoke about the importance of reviewing student work and genuinely analyzing the data to break down the areas in which students did not meet mastery. Some teachers believed that there was not enough time in the PLC to review the data.

Another point made about data analysis is finding ways to provide the interventions that the students needed. One teacher mentioned how she needed a more structured intervention. Coming together in a PLC to talk about student data and seeing patterns or misconceptions in other classrooms can be quite beneficial. At the heart of data use in schools is an effort to observe how students perform on any number of tasks and then to predict how they might perform on similar functions in the future (Kruse & Johnson, 2017). A substantial but often

missing part of the PLC is when members share strategies they are using in their classrooms and help others generate ideas or techniques they could take back and try with their students.

During the action research study, it had been a challenge to adjust to the COVID-19 accommodations. The state postponed the yearly assessments for all students, and the district delayed its quarterly benchmarks for the 2020-2021 year. These assessments were fundamental for the teachers as they used them to drive their instructional plans for the year. Data collection intends to advance continuous improvement, and data need to be collected frequently to identify opportunities for change and assess whether positive changes are occurring (Bryk et al., 2015). One group member prefers her local assessments over the benchmarks. She believed that using local formative and summative assessments based on their teaching standards would better understand where they struggle.

Another challenge with looking at student work and analyzing achievement data is the challenges bought upon by the COVID-19 pandemic. The district worked hard to put safety measures in place to open the schools in the fall of 2020 for in-person learning. However, only 60% of the students returned to in-person learning, which created some challenges to serve the other 40% of the students on a digital platform. Not all students returned all at once, so students' staggered return causes some to change teachers up to three times. For teachers, it was hard to get an accurate evaluation of student progress.

Overall, analyzing the student data and sharing the data analysis with the team helped build a more substantial capacity among the teachers. Teachers shared best practices, learned from each other, and used collective techniques to improve their instruction to drive student improvement goals.

Another critical factor impacting student data and analysis is incorporating job-embedded learning to improve teachers' efficacy in instructional practices. The AR Team used job-embedded professional learning throughout the study from the beginning of the action research study. The presence of job-embedded learning allows teachers to find the time for data analysis, which results in professional growth that directly impacts daily instructional practice (Hill & Rapp, 2012). Parise and Spillane (2010) offer that job-embedded learning opportunities include "interactions with colleagues around teaching and learning, including conversations about instruction, peer observations, feedback, and advice-seeking about instruction" (p. 324).

An essential part of providing job-embedded learning was utilizing the instructional coach and the math content specialist. Both staff members worked together to establish the shared norms and protocols within the grade-level PLCs and provided weekly collaborative learning teams' facilitation. The teachers had a chance to work on road maps, lesson planning, analyzing student work, and constructing and analyzing common assessments. During an observation of the 5th -grade collaborative learning team's session, the researcher noted in his journal how structured the beginning of a typical collaborative learning session, where the team went over their shared norms and found time to include quick two-minute celebrations.

As part of the planning and learning that occurs within the PLC, the instructional coach and the math specialist created a Literacy and Math leadership team to support the work as developed in the PLC. Their goals were to have the teams go into classrooms and observe other teachers teach using the lessons and strategies created and shared in their collaborative team sessions. In a PLC, professional learning activities should be job-embedded, informed by data, centered on student work and how students learn (Stewart, 2014).

For the first round of classroom walkthroughs, the teams spent two-days conducting classroom observations to learn about using formative assessment data to form small groups. This intervention practice was a part of their planning that they have been working on to improve using data to create small student intervention groups. Formative assessments serve as practice for students, just like a well-planned homework assignment. They check for understanding along the way and guide teacher decision-making about future instruction; they also provide feedback to students to improve their performance (Dodge, 2009).

Some teachers mentioned how they valued seeing teachers instruct small groups in many ways and incorporated some strategies for their students. Another teacher noted how she enjoyed the simple tools that a few teachers used during small group instruction, like document protectors and dry erase boards.

Overall, the day of learning, combined with the classroom visits, helped build teacher capacity among team members about small group instruction. The action research teachers who were part of these learning teams shared their learning experiences with their colleagues during a subsequent collaborative session.

Conclusion 3 - Leadership support plays a significant role in establishing and sustaining an effective PLC.

A critical part of implementing and sustaining an effective PLC is the schools' leaders' support role. To effectively implement and sustain PLCs' collaborative work, support from all school system levels is critical. Teachers benefit from those leaders who can bring specific expertise to PLCs, such as analyzing data, unpacking standards, identifying the most effective instructional strategies to address the standards, and identifying effective assessment strategies (Pirtle & Tobia, 2014). Some of the group's common responses pertained to the structures and

processes of the current PLCs. As the school leaders, they create the time and space to collaborate and provide opportunities to share and observe one another. They must also create a master schedule to allow for team collaboration and provide the needed resources and a shared space where teachers can collaborate effectively.

Another critical factor indicated by the teachers is that the administrators must establish goals and hold the team members accountable. One teacher expressed that the school administrator's role in a PLC is to communicate the expectations of the PLC and make sure structures and processes are in place to make the work successful. It is the administrator's role to check for implementation of the PLC work in classrooms. Teachers need to be held accountable for executing the work of the PLC in their classrooms. The administrators should provide timely feedback so that teachers can continue to improve.

The AR Team shared other factors about the administrator's critical role in supporting the PLC environment. Administrators should monitor the practices within the PLCs and ensure that they transfer the learning to the classroom. Encouraging risk-taking and being supportive as teachers try new things as they are learning. PLC groups account for how they are spending their time. During each meeting, they should maintain notes that articulate the goal, summarize accomplishments and ideas for the next collaboration (Spencer, 2016).

Another valuable fact shared by the group was that the administrative team should be part of the collaborative learning team as an active participant. Owens (2010) noted that school leaders should participate in PLCs in a collaborative role rather than a supervisory one. Others agreed that the administrators should be active participants and not be off to the side on their computer, not engaging with the team. Another member expressed her concerns that school leaders should participate in collaborative teamwork and not just sitting in the room working on

other tasks. When leaders create the conditions where educators support one another's practice in PLCs, teachers feel more confident and develop a strong sense of self-efficacy; they believe in their ability to influence student learning and make a difference in student outcomes and achievement (Tschannen-Moran, 2014).

The action research team's consensus was that the school leaders play a significant role in supporting the PLC process. The more involved they are, the better the structures and comprehensive, collaborative work will be. The leaders must engage fully in the PLC process and not just be a supervisor.

Conclusion 4 - Having protocols and structures with a commitment to continuous improvement are the key drivers to an effective PLC.

As we analyzed data from the focus group interview and the personal interview questionnaire, we also collected a quantitative data sample from a PLC survey. The survey examined factors within a PLC, like critical elements, human resources, and structural conditions. The AR Team also read various literature on different processes and structures found in PLCs.

As the AR Team engaged in the literature review, many common themes mentioned in the articles were very familiar to the team members. Trust and respect were a topic mentioned in the readings. One teacher said that by creating an atmosphere of trust and respect as professionals in the PLC meetings, more group members would be willing to speak and engage in professional dialogue. Another teacher talked about the importance of self-reflection to improve their instructional practices. To bring effective PLCs to completion, school leaders must focus on increasing teachers' collaborative professional learning and self-reflection to improve classroom instruction for enhanced student gains (Pirtle & Tobia, 2014).

They also added other essential elements of a PLC gained from the literature, like making sure collaborative teams focused on learning and continuous improvement. Reviewing and analyzing student work was also a key takeaway. Teachers expressed that having time to reflect and analyze student data and share or model ideas on some instructional strategies would improve the overall efficiency of the PLC. To best serve students, PLC groups should balance their focus among curriculum, development, instructional material expansion, and student work assessment (Spencer, 2016). Collaboration was the element most discussed during the focus group meetings and the personal interview questionnaire.

In a PLC, collaboration is a process in which teachers work together interdependently to impact their classroom practice in ways that will lead to better results for their students, for their team, and their school (DuFour et al., 2016). One member explained in her view that PLCs allow teachers an easy way to share best practices and brainstorm innovative ways to improve learning and drive student achievement. A school-based professional learning community can offer teachers support and motivation as they work to overcome the tight resources, isolation, time constraints, and other obstacles they encounter in today's schools (Kruse et al.,1994). Looking at and analyzing student work is an element that is so important but often missing in a PLC. Data collection intends to advance continuous improvement, and data need to be collected frequently to identify opportunities for change and assess whether positive changes are occurring (Donohoo & Mausbach, 2021).

A considerable barrier to analyzing student data is finding the time to do it within a planning period's time constraints. A few members agreed that analyzing student work samples allows teachers to plan for re-teaching opportunities during small groups. It also helps them

evaluate and examine their teaching strategies. Creating a collaborative setting where the focus is on student learning and sharing ideas and best practices will help the current PLCs' efficacy.

Another element that is critical to any PLC structure is that members must have trust and respect. The AR Team completed a PLC survey, and in the category of Human Resources, the team rated the category of Trust and Respect as one the lowest. The low scores indicated that they did not believe that the teachers felt honored for their school's expertise and within the district, the parent community, and other significant groups. Engaging in collaborative work in a PLC, teachers must trust their colleagues and experiment with a collaborative approach (Jao & McDougall, 2016).

And finally, the consensus from the data collected showed that collective focus on student learning remains at the forefront. Putting students first also means leveling the playing field and creating a definition of equity that demonstrates equal access to learning for all students in the school (Spiller & Power, 2019). To better serve the students, teachers need to participate, try new strategies & share. They must remain focused on student results by analyzing data & student work consistently to drive instruction.

One important factor of having an effective PLC is finding time to incorporate best practices. Based on the data collected throughout the study, one essential part of an established PLC is finding time to incorporate the many techniques needed within a PLC, to truly reflect on the work, analyze student work, and share best practices, to name a few. Other teachers expressed how they could get so much accomplished if they had an extra day of planning set aside for reflection and student work analysis. They mentioned that trying to cover so much work in 35 - 40-minutes of a planning session is not enough time.

Another factor impacting the time to get things done is the extra added district initiatives. The AR Team expressed that having the lessons more scripted for the mini-lesson and active engagement takes away individual teachers' creativity. Some felt that so much time is spent on lesson planning that it impeded the team from working on other things within the PLC. An overarching goal of PD is for new and refined learning to occur. During these experiences, teachers investigated and explored instructional practices that influenced student outcomes. However, time is a constant competing factor in education. It can be a silent inhibitor and preventer of forwarding progress (Morgan & Bates, 2018).

The shortage of collaborative time primarily challenges the practices of PLCs. Teachers' heavy workload, which draws their time and energy away from PLC activities, can hinder the collaborative learning process (Zhang, Yuan, & Yu, 2017). Some teachers expressed that they would like to have designated time for teachers to present techniques that they use in their classrooms that work well—or model-specific standards, but there is not enough time to get it all in during the time allotted.

The AR Team suggested adding one day to the planning week to work on other important things besides solely focusing on lesson planning. They also recommended designating two days a month to reflect, analyze student data, and share or model ideas on some instructional strategies that others can implement in their classrooms.

Limitations of the Current Study

This study contains certain limiting conditions related to the common critiques of qualitative research methodology in general and are inherent in the study's action research design. One of the significant limitations was the time to conduct the research. The study occurred over six months. To determine the long-term effect of this study and get a complete

examination, it would need to be conducted over a more extended period and include a much larger sample size. However, the limited six-month period fulfilled the study's requirements in partial fulfillment of a doctoral program degree.

Another limitation of this study is the sample size and selection of participants. For this action research, we used a group of ten participants: seven classroom teachers, an instructional coach, a math content specialist, and one administrator. The sample represented only one-grade level out of six total grades. To gather more data to support the problem of practice, a more extensive sample representation would add to the study's overall findings.

A significant implication was the effects caused by the Coronavirus Pandemic. The average daily school operations changed to accommodate the safety measures put in place. Teachers had to learn a new and different way of teaching and planning for digital learning. When students returned to in-person learning, the teachers had to learn to instruct concurrently on both platforms. The face-to-face regular collaborative planning sessions in the PLCs switched over to a virtual platform

Recognizing these limitations, the researcher took the following measures. First, he met with the action research team and shared the plan and goals of conducting an action research study with one grade level. The researcher removed all participant names, used codes, and pseudonyms in transcriptions and survey data to reduce the potential bias during data analysis.

Implications

The purpose of this action research study was to determine teachers' perceptions of Professional Learning Communities and how they believed participation in a PLC impacts their professional development and classroom instruction in a Title I Elementary School. Using an Action Research method, the researcher conducted the study within Coronado Elementary

School's specific context. The research study findings have implications for the local school, district, and national level.

Implications and Recommendations for Practitioners

The results have some implications for PLC research and practice in other contexts. The PLC is a practical framework for restructuring and reculturing schools (DuFour & Dufour, 2010) and can lead to positive organizational and individual outcomes. The real challenge for PLC practice is to facilitate deep, critical, and reflective dialogue among teachers (Zheng et al., 2019).

From this action research, team members highlighted the many benefits of working within a professional learning community. This study's results and conclusions suggest that when schools implement a PLC, the collective power of collaboration can directly affect student achievement. It will take strong leadership support to provide the time, processes, and structures to allow teachers to collaborate. The school's administrators must also be part of the collaborative learning teams and provide input and share in the decision-making. They cannot act in a supervisory role alone.

One essential part of implementing a PLC will be establishing trust and respect among the team members. An atmosphere of trust will promote equity among the team and lead to increased productivity. As teachers pursue to work together on collaborative teams, trust influences their interactions and decisions. Building trust and respect will occur in collaborative learning teams where shared norms and a shared vision will establish an effective school. Effective schools are those that not only exhibit a culture of collaborative learning among their professional educators but are led and structured in ways that facilitate and institutionalize this group-learning dynamic toward the realization of desired educational outcomes (Johnson & Kruse, 2017).

Overall, PLCs can provide teachers with reflective dialogue, to look and analyze student work, and use the data to drive the school improvement goals. However, practitioners must be wary of the barriers that can prevent the PLC from functioning at high levels. Scheduling the time for teachers to meet focusing on student learning will be at the forefront of establishing an effective PLC. The teachers and administers must consistently monitor their PLCs and adjust as needed so that the teachers can benefit from their collective self-efficacy.

Implications and Recommendations for Researchers

The action research study articulated ten elementary school educators' perceptions of the Professional Learning Community model as implemented in their school. A single case action research design was appropriate for this study as it attempted to understand teacher beliefs regarding their involvement in the PLC. With only one grade level, further research on PLCs incorporating more teachers school-wide or even across other elementary schools in the district can add to the body of research on PLCs because not all elementary school's schedules are the same.

Secondly, to gather more data to support the effects of using PLCs in schools, school and district leaders will need to create standard processes and protocols to help schools have common practices and understand how to implement and sustain an effective PLC. Further exploration of how the PLC model impacts student achievement is recommended.

The ten teachers in this action research team discussed how reviewing student work, and analyzing formative assessments and other pertinent data, can have the most impact on how teachers can use the PLC model to improve student achievement. Many school districts emphasize state and district assessments as the critical drivers for leading school improvement

goals. Feedback from the study participants indicated that reviewing and analyzing local student work and assessments created by individual teachers can be a better predictor of student success.

Finally, the researcher recommends further studies be conducted at a larger scale to include middle and high schools to understand better how schools incorporate the PLC model to enhance teacher instruction and increase student achievement. Learning about the various practices and structures presents a clear lens through which educators can implement an effective PLC in their setting.

Implications and Recommendations for Policy Makers

With the passing of federal and state initiatives over the last decade or so, the focus has been on student achievement and reducing the education achievement gap. The "achievement gap" in education refers to the disparity in academic performance between groups of students (Ansell, 2011). It is most often used to describe the troubling performance gaps between African American and Hispanic students at the lower end of the performance scale and their non-Hispanic white peers. States and school districts can do more to ensure that all students have equal access to high-quality teachers, stimulating curriculum and instruction, and adequate school resources like computers, libraries, and other learning materials (Reardon, 2013).

When Congress approved the, Every Student Succeeds Act, the Elementary and Secondary Education Act's reauthorization on December 10, 2015, school districts across the nation believed that a focus on instructional practices would improve student achievement. In the act, there is an updated description of professional development to ensure personalized, ongoing, job-embedded activities that are collaborative and data-driven, developed with educator input, and regularly evaluated (Learning Forward, 2011). Individual states and school districts will need to ensure that schools adhere to the new guidelines and focus on incorporating essential

parts of a well-established PLC, like job-embedded learning, collaboration, common assessments, and user data to improve schools' processes.

Chapter Summary and Final Thoughts

As we came to the close of this action research study, the AR Team had time to reflect on the process and the research's key takeaways. The purpose of this action research study was to determine teachers' perceptions of Professional Learning Communities and how participation in a PLC impacted their professional development and classroom instruction in a Title I Elementary School. Using an action research design, interventions were provided, and multiple tools were used to collect essential data.

When considering how to implement an effective PLC in a local setting, the study revealed the following conclusions:

1. Teachers perceived working collaboratively in a PLC setting as beneficial to their self-efficacy.
2. Understanding the PLC structures helps increase teacher efficacy.
3. Incorporating job-embedded learning can impact teachers' efficacy in instructional practices.
4. Team accountability is an essential characteristic of establishing an effective PLC.
5. Data analysis is critical to improving instructional practices.
6. Finding time to incorporate best practices within a PLC is a challenge.
7. Leadership support plays a significant role in establishing and sustaining an effective PLC.
8. Having protocols and structures with a commitment to continuous improvement are the key drivers to an effective PLC.

In analyzing the conclusions, the researcher described the study's limitations and provided recommendations for practitioners, future researchers, and policymakers. When considering the next steps for establishing PLCs, the researcher recommends the following steps:

1. The school's administrators must create the time and place for collaboration, and they must also be part of the PLC and provide input and share in the decision-making.
2. To implement a coherent PLC, members must create shared norms and establish trust and respect among the team members.
3. Conduct further research on PLCs by incorporating more teachers school-wide or even across other elementary schools in the district.
4. Using analysis from work and assessments created by individual teachers can be a better predictor of student success than just using state and district assessments.
5. Individual states and school districts will need to ensure that schools adhere to the federal and state guidelines and initiatives to improve the student achievement gap.

Overall, this action research study provided an opportunity to look through a small lens of implementing a PLC model in a school, allowing further research on a larger scale set to gain additional knowledge of using PLCs and their overall impact on student achievement.

References

Achinstein, B., Ogawa, R. T., Sexton, D., & Freitas, C. (2010). Retaining teachers of color: A pressing problem and a potential strategy for "Hard-to-staff" schools. *Review of Educational Research, 80*(1), 71-107. doi:10.3102/0034654309355994

Amels, J., Krüger, M. L., Suhre, C. J. M., & van Veen, K. (2020). The effects of distributed leadership and inquiry-based work on primary teachers' capacity to change: Testing a model. *School Effectiveness & School Improvement, 31*(3), 468-485. doi:10.1080/09243453.2020.1746363

Anderson, G. L., Herr, K., & Nihlen, A. S. (1994). *Studying your own school: An educator's guide to qualitative practitioner research* Corwin Press.

Anderson, S., Leithwood, K., & Strauss, T. (2010). Leading data use in schools: Organizational conditions and practices at the school and district levels. *Leadership and Policy in Schools, 9*(3), 292-327. doi:10.1080/15700761003731492

Ansell, S. (2011). Achievement Gap. *Education Week, 30*(30), 15-16.

Bandura, A. (1994). Self-efficacy. In V. S. Ramachaudran (Ed.), Encyclopedia of human behavior (Vol. 4, pp. 71-81). New York: Academic Press. (Reprinted in H. Friedman [Ed.], Encyclopedia of mental health. San Diego: Academic Press, 1998).

Blanc, S., Jolley, B. C., Liu, R., Mitchell, C., Travers, E., & Bulkley, K. E. (2010). Learning to learn from data: Benchmarks and instructional communities. *Peabody Journal of Education, 85*(2), 205. doi:10.1080/01619561003685379

Bloomberg, L. D., & Volpe, M. (2019). *Completing your qualitative dissertation: A road map from beginning to end* (4th ed.). SAGE Publications, Inc.

Blundell, C., Lee, K., & Nykvist, S. (2020a). Moving beyond enhancing pedagogies with digital technologies: Frames of reference, habits of mind and transformative learning. *Journal of Research on Technology in Education, 52*(2), 178-196. doi:10.1080/15391523.2020.1726235

Blundell, C., Lee, K., & Nykvist, S. (2020b). Moving beyond enhancing pedagogies with digital technologies: Frames of reference, habits of mind and transformative learning. *Journal of Research on Technology in Education*, *52*(2), 178-196. doi:10.1080/15391523.2020.1726235

Boudett, K. P., City, E. A., & Murnane, R. J. (2005). *Data wise: A step-by-step guide to using assessment results to improve teaching and learning.* Harvard Education Press, c2005.

Brown, B. D., Horn, R. S., & King, G. (2018). The effective implementation of professional learning communities. *Alabama Journal of Educational Leadership, 5,* 53-59.

Bryk, A. S. (2015). In Gomez L. M., Grunow A. and LeMahieu P. G. (Eds.), *Learning to Improve: How America's schools can get better at getting better*. Harvard Education Press.

Bryk, A., & Schneider, B. (2004). Trust in schools: A core resource development. Russell Sage.

Buffum, A., Erkens, C., Hineman, C., Huff, S., Jessie, L. G., Martin, T. L., . . . Williams, K. (2008). *THE COLLABORATIVE ADMINISTRATOR, working together as a professional learning community*. Solution Tree Press.

Burns, M. K., Naughton, M. R., Preast, J. L., Wang, Z., Gordon, R. L., Robb, V., & Smith, M. L. (2018). Factors of professional learning community implementation and effect on student achievement. *Journal of Educational and Psychological Consultation*, *28*(4), 394-412. doi:10.1080/10474412.2017.1385396

Butler, D. L., Lauscher, H. N., Jarvis-Selinger, S., & Beckingham, B. (2004). Collaboration and self-regulation in teachers' professional development. *Teaching and Teacher Education, 20*(5), 435-455.

Center for Disease Control and Prevention. (2020). *Coronavirus disease 2019 (COVID-19).* U.S. Department of Health and Human Services). https://www.cdc.gov/coronavirus/2019-ncov/cdcresponse/about-COVID-19.html

Charner-Laird, M., Ippolito, J., & Dobbs, C. L. (2016). The roles of teacher leaders in guiding PLCs focused on disciplinary literacy. *Journal of School Leadership, 26*(6), 975.

Cherkowski, S. (2016). Exploring the role of the school principal in cultivating a professional learning climate. *Journal of School Leadership, 26*(3), 523-543. doi:10.1177/105268461602600306

Christman, J. B., Ebby, C. B., & Edmunds, K. A. (2016). Data use practices for improved mathematics teaching and learning: The importance of productive dissonance and recurring feedback cycles. *Teachers College Record, 118*(11).

Cinches, M. F. C., Russell, R. L. V., Chavez, J. C., & Ortiz, R. O. (2017). Student engagement: Defining teacher effectiveness and teacher engagement. *Journal of Institutional Research South East Asia, 15*(1), 5.

Cooper, K., Stanulis, R., Brondyk, S., Hamilton, E., Macaluso, M., & Meier, J. (2016). The teacher leadership process: Attempting change within embedded systems. *Journal of Educational Change, 17*(1), 85-113. doi:10.1007/s10833-015-9262-4

Creswell, J. W. (2005). *Educational research: Planning, conducting, and evaluating quantitative and qualitative research* (2nd ed.). Merrill/Prentice Hall.

Darling-Hammond, L., & Richardson, N. (2009). Research review/teacher learning: What matters. *Educational Leadership, 66*(5), 46-53.

Darling-Hammond, L., Hyler, M. E., & Gardner, M. (2017). Effective teacher professional development.

Datnow, A., & Hubbard, L. (2015). Teachers' use of assessment data to inform instruction: Lessons from the past and prospects for the future. *Teachers College Record, 117*(4), n4.

Datnow, A., Park, V., & Kennedy-Lewis, B. (2013). Affordances and constraints in the context of teacher collaboration for the purpose of data use. *Journal of Educational Administration, 51*(3), 341-362.

Davidson, K. L., & Frohbieter, G. (2011). District adoption and implementation of interim and benchmark assessments. CRESST report 806. *National Center for Research on Evaluation, Standards, and Student Testing (CRESST).*

DeMatthews, D. E. (2014). Principal and teacher collaboration: An exploration of distributed leadership in professional learning communities. *International Journal of Educational Leadership and Management, 2*(2), 176-206.

Desimone, L. M. (2009). Improving impact studies of teachers' professional development: Toward better conceptualizations and measures. *Educational Researcher, 38*(3), 181-199. doi:10.3102/0013189X08331140

Dodge, J. (2009). What are formative assessments, and why should we use them. *Scholastic Professional Resource Center*.

Doğan S., & Adams, A. (2018). Effect of professional learning communities on teachers and students: Reporting updated results and raising questions about research design. *School Effectiveness & School Improvement, 29*(4), 634-659. doi:10.1080/09243453.2018.1500921

Dougherty Stahl, K. A. (2015). Using professional learning communities to bolster comprehension instruction. *The Reading Teacher, 68*(5), 327-333.

du Plessis, P. (2013). *The principal as instructional leader: Guiding schools to improve instruction* Taylor & Francis.

DuFour, R. (2004). What is a" professional learning community"? *Educational Leadership, 61*(8), 6-11.

DuFour, R. (2015). *In praise of American educators: And how they can become even better*. Solution Tree Press.

Dufour, R., & Marzano, R. J. (2011). *Leaders of learning*. Solution Tree Press.

Dufour, R., Dufour, R., Eaker, R., Many, T., & Mattos, M. (2016). *Learning by doing: A handbook for professional communities at work TM* (3rd ed.). Solution Tree Press.

Dunne, F., Nave, B., & Lewis, A. (2000). Critical friends groups: Teachers helping teachers to improve student learning. *Phi Delta Kappan, 28*(4), 31-37.

Elmore, R. F. (2000). Building a new structure for school leadership. *Albert Shanker Institute.*

Ertmer, P. A., & Ottenbreit-Leftwich, A. (2013). Removing obstacles to the pedagogical changes required by Jonassen's vision of authentic technology-enabled learning. *Computers & Education, 64*, 175-182. doi:10.1016/j.compedu.2012.10.008

Fazel, P. (2013). Teacher-coach-student coaching model: A vehicle to improve efficiency of adult institution. *Procedia - Social and Behavioral Sciences, 97*, 384-391. doi:10.1016/j.sbspro.2013.10.249

Fisher, D., Frey, N., Almarode, J., Flories, K., & Nagel, D. (2019). *PLC+: Better decisions and greater impact by design.* Corwin.

From isolation to collaboration: Promoting teacher leadership through PLCs. (2009). *Childhood Education,* (2), 127.

Gallagher, H. A., Cottingham, B., EdResearch for, R. P., Annenberg Institute for School Reform at, Brown University, Results, f. A., & Stanford University, Policy Analysis for California Education (PACE). (2020). *Improving the quality of distance and blended learning. Brief no. 8*. EdResearch for Recovery Project.

Georgia Department of Education. (2019). Georgia Milestones Assessment System.

Gray, J. A., & Summers, R. (2015). International professional learning communities: The role of enabling school structures, trust, and collective efficacy. *International Education Journal: Comparative Perspectives, 14*(3), 61-75.

Gray, J. A., & Summers, R. (2016). Enabling school structures, trust, and collective efficacy in private international schools. *International Journal of Education Policy & Leadership, 11*(3), 1-15.

Gray, J., Kruse, S., & Tarter, C. J. (2016). Enabling school structures, collegial trust, and academic emphasis: Antecedents of professional learning communities. *Educational Management Administration & Leadership, 44*(6), 875-891. doi:http://dx.doi.org.proxy-remote.galib.uga.edu/10.1177/1741143215574505

Gray, J., Mitchell, R., & Tarter, C. J. (2014). Organizational and relational factors in professional learning communities. *Planning & Changing, 45*(1), 83-98.

Grossman, P., Wineburg, S., & Woolworth, S. (2001). Toward a theory of teacher community. *Teachers College Record, 103*(6), 942-1012.

Gwinnett County Public Schools. (2019). Collaborative Learning Teams Self-Assessment.

Hairon, S., Goh, J. W. P., Chua, C. S. K., & Wang, L. (2017). A research agenda for professional learning communities: Moving forward. *Professional Development in Education, 43*(1), 72-86. doi:10.1080/19415257.2015.1055861

Hallam, P. R., Dulaney, S. K., Hite, J. M., & Smith, H. R. (2014). Trust at ground zero: Trust and collaboration within the professional learning community. In D. Van Maele, P. B.

Forsyth & M. Van Houtte (Eds.), (pp. 145-170). Springer Science + Business Media. doi:10.1007/978-94-017-8014-8_7

Hallam, P. R., Smith, H. R., Hite, J. M., Hite, S. J., & Wilcox, B. R. (2015). Trust and collaboration in PLC teams: Teacher relationships, principal support, and collaborative benefits. *NASSP Bulletin, 99*(3), 193-216.

Hamilton, L. S. (2009). *Using student achievement data to support instructional decision-making*. US Dept. of Education, National Center for Education Evaluation and Regional Assistance, Institute of Education Sciences, 2009.

Harris, A. (2004). Distributed leadership and school improvement: Leading or misleading? *Educational Management Administration & Leadership, 32*(1), 11-24. doi:10.1177/1741143204039297

Harris, A., & Jones, M. (2010). *Professional learning communities and system improvement*. Sage Publications.

Hirsch, S. (2015). ESSA includes an improved definition of professional development. *Learning Forward.*

Hord, S. M. (1997). Professional learning communities: Communities of continuous inquiry and improvement.

Hord, S. M. (2004). *Learning together, leading together: Changing schools through professional learning communities.* Teachers College Press.

Hord, S. M. (2009). *Professional learning communities: Educators work together toward a shared purpose - improved student learning*. United States: NSDC NATIONAL STAFF DEVELOPMENT COUNCIL.

Horn, I. S., Kane, B. D., & Wilson, J. (2015). Making sense of student performance data: Data use logic and mathematics teachers' learning opportunities. *American Educational Research Journal, 52*(2), 208-242.

Huffman, J. B., & Hipp, K. K. (2003). *Reculturing schools as professional learning communities.* R&L Education.

James-Ward, C., Fisher, D., & Frey, N. (2013). *Using data to focus on instructional improvement.* ASCD.

Jao, L., & McDougall, D. (2016). Moving beyond the barriers: Supporting meaningful teacher collaboration to improve secondary school mathematics. *Teacher Development, 20*(4), 557-573.

Johnson, A. P. (2008). *A short guide to action research* (3rd ed.). Pearson/Allyn and Bacon.

Johnson, B. L. (2009). Understanding schools as organizations: Implications for realizing professional learning communities. *The handbook of leadership and professional learning communities* (pp. 17-28) Springer.

Johnson, K., & Olanoff, D. (2020). Using transformative learning theory to help prospective teachers learn mathematics that they already "know." *Mathematics Enthusiast, 17*(2), 725.

Jones, L. (2015). *A guide to data-driven leadership in modern schools*. Information Age Publishing.

Kaden, U. (2020). COVID-19 school closure-related changes to the professional life of a K–12 teacher. *Education Sciences, 10*(165), 165. doi:10.3390/educsci10060165

Kahn, W. A. (1990). Psychological conditions of personal engagement and disengagement at work. *The Academy of Management Journal, 33*(4), 692-724.

Knowles, M. S. (1984). *Andragogy in action*. Jossey-Bass In.

Knowles, M. S., Holton, E. F., & Swanson, R. A. (1998). *The adult learner: The definitive classic in adult education and human resource development* (5th ed.). Gulf Publishing Company.

Kruse, S. D., & Johnson, B. L. (2017). Tempering the normative demands of professional learning communities with the organizational realities of life in schools: Exploring the cognitive dilemmas faced by educational leaders. *Educational Management Administration & Leadership, 45*(4), 588-604. doi:10.1177/1741143216636111

Kruse, S., Louis, K. S., & Bryk, A. (1994). Building professional community in schools. *Issues in Restructuring Schools, 6*(3), 67-71.

Kruse, S., Louis, K. S., & Bryk, A. (2009). Building professional community in schools.

Kruse, S., Seashore Louis, K. & Bryk, A. (2017). Professional learning communities survey.

Lambert, L. (2002). A framework for shared leadership. *Educational Leadership, 59*(8), 37-40.

Leedy, P. D., & Ormrod, J. E. (2013). *Practical research: Planning and design* (10th ed. ed.) Pearson.

Lencioni, P. (2005). *Overcoming the five dysfunctions of a team: A field guide for leaders, managers, and facilitators.* Jossey-Bass.

Lencioni, P. (2012). The five dysfunctions of a team. *Jossey-Bass.*

Lent, R. W., & Brown, S. D. (2006). Integrating person and situation perspectives on work satisfaction: A social-cognitive view. *Journal of Vocational Behavior, 69*(2), 236-247. doi:https://doi.org/10.1016/j.jvb.2006.02.006

Lieberman, A., Miller, L., Wiedrick, J., & von Frank, V. (2011). Learning communities: The starting point for professional learning is in schools and classrooms. *The Learning Professional, 32*(4), 16.

Little, J. W. (2012). Understanding data use practice among teachers: The contribution of micro-process studies. *American Journal of Education, 118*(2), 143-166. doi:10.1086/663271

Little, M. E. (2020). Collaboration and connections among middle school teachers of mathematics: Enhancing efficacy through professional learning communities. *SRATE Journal, 29*(1)

Lomos, C., Hofman, R. H., & Bosker, R. J. (2011). Professional communities and student achievement--A meta-analysis. *School Effectiveness and School Improvement, 22*(2), 121-148.

Manning, G. (2007). Self-directed learning: A key component of adult learning theory. *Journal of the Washington Institute of China Studies, 2*(2).

Marsh, J. A., Bertrand, M., & Huguet, A. (2015). Using data to alter instructional practice: The mediating role of coaches and professional learning communities. *Teachers College Record, 117*(4).

Martin, N. K., Sass, D. A., & Schmitt, T. A. (2012). Teacher efficacy in student engagement, instructional management, student stressors, and burnout: A theoretical model using in-class variables to predict teachers' intent-to-leave. *Teaching and Teacher Education, 28*(4), 546-559.

Megan Tschannen-Moran, Anita, W. H., & Hoy, W. K. (1998). Teacher efficacy: Its meaning and measure. *Review of Educational Research, 68*(2), 202-248.

Merriam, S. B. (2001). Andragogy and self-directed learning: Pillars of adult learning theory. *New Directions for Adult & Continuing Education, 2001*(89), 3. doi:10.1002/ace.3

Merriam, S. B. (2004). The changing landscape of adult learning theory. *Review of adult learning and literacy, volume 4* (pp. 213-234) Routledge.

Merriam, S. B., & Bierema, L. L. (2014). *Adult learning: Linking theory and practice* (First edition. ed.). Jossey-Bass, a Wiley brand.

Mertler, C. A. (2014). *The data-driven classroom: How do I use student data to improve my instruction?* ASCD.

Mertler, C. A. (2019). *Action research: Improving schools and empowering educators/Craig A. Mertler* (6th edition.. ed.) SAGE Publications, Inc.

Mertler, C. A., & Charles, C. M. (2011). *Introduction to educational research* (7th ed.) Pearson/Allyn& Bacon.

Mills, G. E. (2018). *Action research: A guide for the teacher researcher, 6th edition* Pearson.

Mladenova, T., Kalmukov, Y., & Valova, I. (2020). Covid 19 – A major cause of digital transformation in education or just an evaluation test. *TEM Journal, 9*(3), 1163-1170. doi:10.18421/TEM93-42

Moore, J. A. (2018). Exploring five online collaboration tools to facilitate a professional learning community. *TechTrends: Linking Research & Practice to Improve Learning*, *62*(6), 612-617. doi:10.1007/s11528-018-0288-3

Morgan, D. N., & Bates, C. C. (2018). Addressing the barriers of time. *Reading Teacher*, *72*(1), 131-134. doi:10.1002/trtr.1716

Muñoz, M. A., & Branham, K. E. (2016). Professional learning communities focusing on results and data-use to improve student learning: The right implementation matters. *Planning & Changing*, *47*(1), 37.

Nelson, T. H. (2009). Teachers' collaborative inquiry and professional growth: Should we be optimistic? *Science Education, 93*(3), 548-580. doi:10.1002/sce.20302

Ning, H. K., Lee, D., & Lee, W. O. (2016). The relationship between teacher value orientations and engagement in professional learning communities. *Teachers and Teaching: Theory and Practice, 22*(2), 235-254. doi:10.1080/13540602.2015.1055447

Owen, S. (2016). Professional learning communities: Building skills, reinvigorating the passion, and nurturing teacher wellbeing and "flourishing" within significantly innovative schooling contexts. *Educational Review, 68*(4), 403-419. doi:10.1080/00131911.2015.1119101

Owens, R. (2010). New schools of thought: Developing thinking and learning communities. *International Journal of Learning, 17*(6), 43-54. doi:10.18848/1447-9494/CGP/v17i06/47096

Parise, L. M., & Spillane, J. P. (2010). Teacher learning and instructional change: How formal and on-the-job learning opportunities predict change in elementary school teachers' practice. *The Elementary School Journal, 110*(3), 323-346.

Penuel, W. R., Fishman, B. J., Yamaguchi, R., & Gallagher, L. P. (2007). What makes professional development effective? Strategies that foster curriculum implementation. *American Educational Research Journal, 44*(4), 921-958.

Peppers, G. J. (2015). Teachers' perceptions and implementation of professional learning communities in a large suburban high school. *National Teacher Education Journal, 8*(1), 25-31.

Pirtle, S. S., Tobia, E., & SEDL. (2014). *Implementing effective professional learning communities. SEDL insights. Vol. 2, no. 3, winter 2014.* SEDL.

Rasberry, M. A., Mahajan, G., & Center for, T. Q. (2008). *From isolation to collaboration: Promoting teacher leadership through PLCs*. Center for Teaching Quality.

Reardon, S. F. (2013). The widening income achievement gap. *Educational Leadership, 70*(8), 10-16.

Regional Educational, L. M., & International, I. (2016). Creating and sustaining professional learning communities: Q&A with Stephanie Hirsh, ph.D. 2016 educator effectiveness webinar series. *Regional Educational Laboratory Mid-Atlantic.*

Reichstetter, R. (2006). Defining a professional learning community. *E & R Research Alert,* (06.05)

Schildkamp, K., & Poortman, C. (2015). Factors influencing the functioning of data teams. *Teachers College Record, 117*(4)

Schildkamp, K., Ehren, M., & Lai, M. K. (2012). School effectiveness and school improvement. *Editorial Article for the Special Issue on Data-Based Decision Making Around the World: From Policy to Practice to Results.*

Schmuck, R. A. (1997). *Practical action research for change*. IRI/Skylight Training and Pub.

Sergiovanni, T. J. (2000). *The lifeworld of leadership: Creating a culture, community, and personal meaning in our schools.* Jossey-Bass Publishers, ©2000; 1st ed.

Shani, A. B., & Pasmore, W. A. (1985). Organization inquiry: Towards a new model of the action research process. *Contemporary Organization Development: Current Thinking and Applications, Scott, Foresman, Glenview, IL,* 438-448.

Sheffield, R., Blackley, S., & Moro, P. (2018). A professional learning model supporting teachers to integrate digital technologies. *Issues in Educational Research, 28*(2), 487-510.

Simon, N. S., & Johnson, S. M. (2015). Teacher turnover in high-poverty schools: What we know and can do. *Teachers College Record, 117*(3), 1-36.

Skaalvik, E. M., & Skaalvik, S. (2010). *Teacher self-efficacy and teacher burnout: A study of relations* doi://doi-org.proxy-remote.galib.uga.edu/10.1016/j.tate.2009.11.001

Spencer, E. J. (2016). Professional learning communities: Keeping the focus on instructional practice. *Null, 52*(2), 83-85. doi:10.1080/00228958.2016.1156544

Spiller, K., & Power, K. (2019). *Leading with intention: 8 areas for reflection and planning in your PLC at work.* Solution Tree Press.

Stevens, W. D., Kahne, J., & Cooper, L. (2006). *Professional communities and instructional improvement practices: A study of small high schools in Chicago*. Chicago Community Trust.

Stewart, C. (2014). Transforming professional development to professional learning. *Journal of Adult Education, 43*(1), 28-33.

Stoll, L., & Louis, K. S. (2007). *Professional learning communities: Divergence, depth, and dilemmas.* McGraw-Hill Education.

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. doi:10.1007/s10833-006-0001-8

Teague, G. M., & Anfara, V. A. (2012). What research says: Professional learning communities create sustainable change through collaboration. *Middle School Journal*, (2), 58.

Thoma, J., Hutchison, A., Johnson, D., Johnson, K., & Stromer, E. (2017). Planning for technology integration in a professional learning community. *Reading Teacher*, *71*(2), 167-175. doi:10.1002/trtr.1604

Tough, A. (1979). *The Adult's Learning Projects. A fresh approach to theory and practice in adult learning.* Ontario Institute for Social Studies in Education.

Trotter, E., & Roberts, C. A. (2006). Enhancing the early student experience. *Higher Education Research & Development*, *25*(4), 371-386.

Tschannen-Moran, M. (2014). *Trust matters: Leadership for successful schools* (2nd ed. ed.) Jossey-Bass.

Tschannen-Moran, M., & Gareis, C. R. (2015). Faculty trust in the principal: An essential ingredient in high-performing schools. *Journal of Educational Administration, 53*(1), 66-92.

Tschannen-Moran, M., & Woolfolk Hoy, A. (2001). Teacher Efficacy: Capturing and elusive construct. Teaching and Teacher Education, 17, 783-805.

Tschannen-Moran, M., Woolfolk Hoy, A., Skaalvik, E. M., & Skaalvik, S. (2007). Teachers' sense of efficacy scale. *Journal of Educational Psychology*, *99*(3), 611-625.

Valenta, R. L. (2010). Effect of teacher engagement and teacher effectiveness on student achievement. (Dissertation).

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*(1), 80-91. doi:10.1016/j.tate.2007.01.004

Visone, J. D. (2016). A learning community of colleagues enhancing practice. *Kappa Delta Pi Record, 52*(2), 66-70.

Voelkel, R. H., & Chrispeels, J. H. (2017). Understanding the link between professional learning communities and teacher collective efficacy. *School Effectiveness and School Improvement, 28*(4), 505-526. doi:10.1080/09243453.2017.1299015

Wahlstrom, K. L., & Louis, K. S. (2008). How teachers experience principal leadership: The roles of a professional community, trust, efficacy, and shared responsibility. *Educational Administration Quarterly, 44*(4), 458-495.

Walton, M. (1986). *The Deming management method / by Mary Walton; foreword by W. Edwards Deming*. Perigee.

Wang, T. (2016). School leadership and professional learning community: a Case study of two senior high schools in Northeast China. *Asia Pacific Journal of Education, 36*(2), 202-216. doi:10.1080/02188791.2016.1148849

Wenger, E., & Wenger-Trayner, B. (2015). Introduction to communities of practice. A brief overview of the concept and its uses.

Wilhelm, T. (2010). Fostering shared leadership. *Leadership, 40*(2), 22-38.

Wilson, A. (2016). From professional practice to practical leader: Teacher leadership in professional learning communities. *International Journal of Teacher Leadership, 7*(2), 45-62.

Zepeda, S. J. (2014). *Job-embedded professional development: Support, collaboration, and learning in schools* Routledge.

Zepeda, S. J., Parylo, O., & Bengtson, E. (2014). Analyzing principal professional development practices through the lens of adult learning theory. *Professional Development in Education, 40*(2), 295-315.

Zhang, J., Yuan, R., & Yu, S. (2017). What impedes the development of professional learning communities in china? Perceptions from leaders and frontline teachers in three schools in shanghai. *Educational Management Administration & Leadership, 45*(2), 219-237.

Zheng, X., Yin, H., & Li, Z. (2019). Exploring the relationships among instructional leadership, professional learning communities, and teacher self-efficacy in china. *Educational Management Administration & Leadership, 47*(6), 843-859.

Appendices

APPENDIX A

Empirical Analysis Table

APA— by Author(s) and Year	Title of Study	Purpose	Method(s)	Sample	Result(s)	Conclusion(s)	Implications(s)
Burns, M., Naughton, M., Preast, J. Wang, Z., Gordan, R., Robb, V., & Smith, M. (2018)	Factors of Professional Learning Community Implementation and Effect on Student Achievement	To examine which general attributes of PLCs most directly affect student achievement.	The current data were obtained from a statewide initiative in the Missouri Department of Elementary and Secondary Education. Used an audit design to study the effectiveness of all its initiatives.	The Data were collected from 181 schools in Missouri, all of which were in their third year of support from the Missouri PLC project consultants.	Found that the eight strands correlated with student achievement, especially for elementary schools in mathematics, but that the eight strands and 46 items within them were probably representations of two broader constructs — those being Collaborative Leadership Processes and Data-Driven Systems for Learning.	The current data found small to moderate relationships between PLC attributes and student achievement, and PLC attributes' ratings accounted for unique variance in student achievement scores, especially for mathematics.	PLC Implementation Rubric may be a potentially helpful tool for practitioners to assess their implementation efforts. Practitioners should at least consider the processes for collaborative leadership and how they are using data for a system of learning
Buttram, J.& Farley-Ripple (2016)	The Role of Principals in Professional Learning Communities	To identify how principals shape the adoption and implementation of professional learning communities	Mixed methods with interviews, observations, and document analysis	Four schools in two districts relied primarily on principal and teacher self-reports.	Contents varied depending on the principal's view of PLCs. Ongoing PD and coaching are needed to build and extend teacher knowledge	Principals can influence collaboration by allocating and managing resources for successful teacher collaboration and development.	Relied primarily on teacher self-reports as measures of collaborative works, did not fully capture essential aspects of practice

APA— by Author(s) and Year	Title of Study	Purpose	Method(s)	Sample	Result(s)	Conclusion(s)	Implications(s)
Carpenter, Daniel (2014)	School culture and leadership of professional learning communities	To explore supportive and shared leadership structures at schools as a function of school culture policies and procedures	A qualitative study was conducted at three secondary schools in the midwestern USA, observed PLCs, collected artifacts	Three High schools with enrollments of over 1,800, 2,000, and 1,400 students, respectively	All had mutual agreements that PLCs were valuable; one school did not use student achievement data; they lacked a shared and supportive leadership.	Shared leadership is a central component of effective PLCs. Ensuring each member focuses on the continuous improvement cycle.	The conceptualization of the continuous improvement cycle and shared leadership structure is influenced by collaboration.
Cherkowski, Sabre (2016)	Exploring the role of the School Principal in Cultivating a Professional Learning Climate	Examine the experiences of the principal in its efforts to establish a professional learning climate among teachers.	A qualitative case study of one principal	A small secondary (180students) in a rural community that is geographically at the outer edge of a rural school district	Using a fuller understanding of adult learning theory as a new lens to view professional learning in schools may expand and deepen PLCs' theory and practices.	Leaders need personal, professional support and development to foster the kinds of professional learning habits and dispositions required of their teachers and students.	Although the principal was context-specific, this study provided insight and inspiration for other principals seeking to build meaningful PL opportunities for themselves and others in their school contexts.
DeMatthews, David. (2014)	Principal and Teacher Collaboration: An Exploration of Distributed Leadership in Professional Learning Communities	How principals distributed leadership to support effective PLCs is the main focus of this study.	This study was conducted as a qualitative multi-case study with data collection occurring over the 2013-2014 academic school year	This article examines the way principals distributed leadership across six elementary schools in west Texas, across two school districts, to create and sustain effective PLCs.	Both school districts had similarities and differences, but in general, findings related to PLCs and school leadership was similar across both districts.	Each principal in this study engaged in aspects of distributed leadership and demonstrated a commitment to facilitating teacher leadership at a schoolwide level	Continue to investigate how principals and teacher leaders can support organizational learning and how different leadership qualities, actions, experiences, and contextual features of schools, districts, and policies support or impede organizational learning.

APA— by Author(s) and Year	Title of Study	Purpose	Method(s)	Sample	Result(s)	Conclusion(s)	Implications(s)
Doğan S. and Adams, A., (2018)	Effect of professional learning communities on teachers and students: reporting updated results and raising questions about research design	The purpose of this study is to provide a review of empirical research studies on the effect of PLCs on teacher practices and student achievement.	Used a critical analysis of current PLC literature that empirically examines the effect of PLCs on teacher practice and student learning	This manuscript is a review and critical analysis of professional learning communities (PLCs) research using 13 international empirical studies	There were 12 studies with evidence that PLC participation helped teachers improve instructional practices. In nine of the studies, researchers also reported reasons and explanations behind this improvement.	PLCs remain a powerful format for teacher learning to thrive. Each of the 13 studies documented evidence that teachers and their students benefit when teachers participate in PLCs	The evidence reported is not ironclad, due to some methodological issues that have remained a concern for unbiased findings
Fazel, P., 2013	Teacher-coach-student coaching model: A vehicle to improve efficiency of adult institution	An introduction to coaching practice and its principle and outcomes and examines its processes through a discussion of adult learning theory	It addresses adult learning theory that use in the coaching method	Used various literature reviews in correlation to coaching and the adult learning theory	broad-based instructional change requires teacher leaders to be purposeful and focused in creating change through targeted, direct, and strategic change efforts	It demonstrates the learning value inherent within the coaching framework and challenges educators to consider its potential as a model for active, collaborative, authentic and engaging learning for adult.	Teacher-coach-student coaching model is a powerful enriched model promote teacher's efficiency. Provide a skill-based knowledge which would bring alive through a transformational learning-alliance between teacher, and students.

APA— by Author(s) and Year	Title of Study	Purpose	Method(s)	Sample	Result(s)	Conclusion(s)	Implications(s)
Gravani, M.N. (2012)	Adult learning principles in designing learning activities for teacher development	The purpose was to present ideas and practices that could contribute to teacher development programs' learning activities through adult learning theory.	The qualitative study utilized data coded from semi-structured interviews and analyzed documents. Documents were meeting minutes, evaluation papers, university reports, and official papers	Twenty-two secondary teachers (sixteen women and six men) attended the program. Twelve academics (three women and nine men) taught in the program. The plan was for one academic year.	The findings reveal that learners had very little involvement in deciding the units taught in the program. The majority of the sample learners, 15 out of the 22, felt that the program's sessions were of little practical value.	According to the findings of the study, the teachers partially implemented the principles of the adult learning theory	The study implied that it is crucial to study the environment and culture of the teachers and learners when forming and delivering a program
Gray J., Kruse, S., and Tarter, C.J. (2015)	Enabling school structures, collegial trust and academic emphasis: Antecedents of professional learning communities	This study tested the role of enabling school structures, collegial trust, and academic focus in developing professional learning communities (PLCs) in a low-income school district.	The empirical study was based on teachers' and principals' perceptions of survey responses (N ¼ 67 schools).	The sample consists of 67 public elementary, middle, or high schools in the large metropolitan district	The empirical findings demonstrate that enabling school structures, collegial trust, and academic emphasis are antecedents to the development of a professional learning community	This study shows the relationships between enabling school structures, collegial trust, academic focus, and collective efficacy in developing professional learning communities and addressing a literature gap.	This study demonstrates the necessity and importance of enabling school structures and collegial trust, yet the regression indicates that the structural dimension has more effect than the trust variable.

APA— by Author(s) and Year	Title of Study	Purpose	Method(s)	Sample	Result(s)	Conclusion(s)	Implications(s)
Hoi Kwan Ning, Daphnee Lee & Wing On Lee, 2016	The relationship between teacher value orientations and engagement in professional learning communities	To identify typologies of professional learning teams based on measures of professional learning engagement, and assess their linkages with teachers' value orientations	Multinomial logistic regression analysis	Based on data obtained from 408 professional learning teams in Singapore schools.	The results suggested that differences in PLC engagement are mainly attributable to differences in team power distance and team uncertainty avoidance	Learning teams with members who are more willing to take autonomous actions and have stronger tendencies to seek structure, procedures, social support and social information to minimize are likely to engage more in PLC activities.	The results from this study are based entirely on quantitative data obtained from a self-report questionnaire survey. The assessment of learning team collaborative practices can potentially be strengthened if data based on other protocols (such as structured interviews and observations) were included for triangulation purposes
Johnson & Olanoff, 2020	Using transformative learning theory to help prospective teachers learn mathematics that they already "know"	To see if incorporating Transformative Learning Theory (TLT) into their mathematics content courses. Get teachers to make connections between their prior understandings and their new knowledge.	Model connecting TLT cycle to assumptions of andragogy and five strands of mathematical proficiency.	A group of Mathematics Teacher Educators (MTEs) in mathematics content courses at a university	It is important for MTEs to provide experiences for them to build upon their existing knowledge, and to develop the five strands of mathematical proficiency.	MTEs can support PTs in enhancing their knowledge in all five of the strands.	Although incorporating TLT into mathematics content courses provides some extra challenges for MTEs, we believe that the benefits for PTs' learning outweigh the extra work required

APA— by Author(s) and Year	Title of Study	Purpose	Method(s)	Sample	Result(s)	Conclusion(s)	Implications(s)
Little, M.E., 2020)	Collaboration and Connections among Middle School Teachers of Mathematics: Enhancing Efficacy through Professional Learning Communities	This study examined teacher efficacy within PLC activities in a middle school	The path analysis that tests the proposed model relies on questionnaire data	The data was collected from 787 teachers in 65 primary schools	Showed significant differences and large effects in teachers' reported efficacy after a year of implementation of instructional methods	The study yields three main results: Inquiry-based work mediates the positive effect of distributive leadership; Teachers' education levels directly and positively influence their inquiry-based work; teachers age	When they focus on serving the needs of different groups of students, schools can realize change successfully if; a) allow teachers to adopt leadership roles; teachers commit to taking on such roles, and c) teachers work collectively on assumed problems
Muñoz, M. & Branham, K. (2016)	Professional Learning Communities Focusing on Results and Data-use to Improve Student Learning: The Right Implementation Matters	To inform the practice of school districts worldwide interested in deepening their PLC implementation to impact student learning positively and needing personalized support and interventions.	Mixed methods, observations, common assessments, admin and teacher interviews	Ten elementary schools and three middle schools in the Jefferson County Public Schools (JCPS) in Louisville, Kentucky, were used in the study. The district is located in a large metropolitan area and has 150 schools serving approximately 100,000 students.	Having a clear definition and characterization of what a PLC school looks like, having a way to measure implementation of the essential elements of the PLC process, and—more importantly—looking at indicators of success, even involving low-dosage implementation schools	If implemented well coupled with effective PD and actionable data, PLCs can take schools on a successful journey to student learning.	PLCs is an approach that can contribute to improving schools' performance measured as student learning; if implemented well, PLCs can be a system-wide blueprint for managing positive school change and enhancing teacher effectiveness in a high-stakes accountability era

APA— by Author(s) and Year	Title of Study	Purpose	Method(s)	Sample	Result(s)	Conclusion(s)	Implications(s)
Peppers, G. J. (2015)	Teachers' perceptions and implementation of professional learning communities in a large suburban high school	This study concentrated on teachers' perceptions and implementation of PLCs in a large suburban high school, focusing on students' retention and achievement, retention of teachers, and teachers' views of leadership in a schools' learning environment	This qualitative research design included narrative and ethnographic processes in studying teachers' perceptions of PLCs before and following their implementation in a large suburban high school learning environment.	Eight teachers from a large suburban high school in Texas participated in this study. All participants were on-site before the implementation of PLCs within the school.	Findings indicated that PLCs have been successful for the professional development component for teachers. Results also supported literature research; collaborative work is the best way to improve student and teacher learning.	The results and findings of this narrative ethnography study revealed that teachers' perceptions and implementation of PLCs influence the schools' learning environment.	Teachers must be provided time to collaborate as a group and time to help students succeed. Shifting practice and improving student achievement lies in the hand of the educator
Zepeda, S.J., Parylo, O., & Bengtson, E. (2013)	Analyzing principal professional development practices through the lens of adult learning theory.	This qualitative study sought to identify current principal professional development practices in Georgia's four school systems and examine them by applying adult learning theory principles.	The data collected included individual interviews and artifacts. Data were triangulated by comparing multiple information sources and several researchers' involvement in interviewing, coding, analyzing, and interpreting the findings.	Four school districts in Georgia. However, the superintendent, assistant or deputy superintendent, director of human resources, and select principals were interviewed within each district. Small districts had seven participants, and large districts had eleven participants.	Small systems focused on growing the principal as the instructional leader. The larger systems concentrate on developing the principal within the system and developing aspiring leaders. Adult learning characteristics were supported through the review, except for self-directed learning, which was not supported.	This study's findings revealed specific principal professional development practices might inform school and district leaders about principal professional development practices in Georgia. research	The findings of this study hold the implication for policy, practice, and future research. Policy: school Future: more research is required to focus on how informal learning opportunities enhance formal professional learning opportunities

APPENDIX B

UNIVERSITY INSTITUTION REVIEW BOARD APPROVAL

UNIVERSITY OF GEORGIA

Tucker Hall, Room 212
310 E. Campus Rd.
Athens, Georgia 30602
TEL 706-542-3199 | FAX 706-542-5638
IRB@uga.edu
http://research.uga.edu/hso/irb/

Human Research Protection Program

EXEMPT DETERMINATION

May 29, 2020

Dear Karen Bryant:

On 5/29/2020, the Human Subjects Office reviewed the following submission:

Title of Study:	To Enhance the Effectiveness of Professional Learning Communities to Improve Student Achievement
Investigator:	Karen Bryant
Co-Investigator:	Jose DeJesus
IRB ID:	PROJECT00001436
Funding:	None
Review Category:	Exempt, Flex 7

We have determined that the proposed research is Exempt. The research activities may begin 5/29/2020.

Since this study was determined to be exempt, please be aware that not all future modifications will require review by the IRB. For more information please see Appendix C of the Exempt Research Policy (https://research.uga.edu/docs/policies/compliance/hso/IRB-Exempt-Review.pdf). As noted in Section C.2., you can simply notify us of modifications that will not require review via the "Add Public Comment" activity.

A progress report will be requested prior to 5/29/2025. Before or within 30 days of the progress report due date, please submit a progress report or study closure request. Submit a progress report by navigating to the active study and selecting Progress Report. The study may be closed by selecting Create Version and choosing Close Study as the submission purpose.

In conducting this study, you are required to follow the requirements listed in the Investigator Manual (HRP-103).

Sincerely,

William Westbrook, IRB Analyst
Human Subjects Office, University of Georgia

APPENDIX C

SCHOOL DISTRICT INSTITUTIONAL REVIEW BOARD APPROVAL

03-16-2020 A09:37

RECEIVED
MAR 13 RECD
R+E

LOCAL SCHOOL RESEARCH REQUEST FORM

Name of School: Cedar Hill Elementary

Name of Researcher: Jose M. DeJesus

Position or Grade: Principal

A. Research Project

a. **Title:** Enhancing Professional Learning Communities to improve Student Achievement

b. **Statement of Problem and research question:** The problem is the inconsistency of effective collaborative planning among the grade level teams. Although the school refers to collaborative planning as Professional Learning Communities (PLCs), the practices or protocols demonstrated among the teachers and support staff, are not consistent among the grade levels as those found in a well-established PLC.

1) What are teacher perceptions of participating in a Professional Learning Community to increase teacher learning and collaboration?

2) How does participating in a Professional Learning Community impact the teachers' instructional practice?

c. **Subjects or population for the study:** 3rd-grade teachers in a Professional Learning Community

d. **Reason for doing this research:**

X	Graduate Study at the University of Georgia University/College
	Publication/Presentation
	Other (please specify)

e. **Dates research will be conducted:** May 2020 to March 2021

B. All research and researchers must a) Protect the rights and welfare of all human subjects, b) Inform students and/or parents that they have the right not to participate in the study, c) Adhere to board policies and applicable laws which govern the privacy and confidentiality of students records.

C. This request applies to research conducted within and by local school personnel. Co-researchers participating in this request must also be employed at the same school as the researcher and not outside GCPS. All other research requests must be submitted by completing a GCPS Research Proposal and submitting it electronically according to instructions. For complete details and instructions, please visit our Web Page at the following link: http://tinyurl.com/oe7pmpm or you can simply go to gwinnett.k12.ga.us. When you open our webpage, click on "I want to" section...Apply for Research Approval." This will take you to our webpage.

D. Principals ONLY need to approve Local School Research Requests. Please send a copy to the Research & Evaluation Office - ISC for our files. No further approval is necessary.

E. After your principal/Assistant Superintendent approves/signs, please forward a copy of this completed request form to:

Via GCPS Courier:	Via US Mail:	Via Fax:
Dr. James Appleton GCPS - Research & Evaluation ISC	Dr. James Appleton, Executive Director Research & Evaluation Office Gwinnett County Public Schools 437 Old Peachtree Road, NW Suwanee, GA 30024	Dr. James Appleton 678-301-7088

Jose M. DeJesus
Principal's Signature

March 10, 2020
Date of Approval

Assistant Superintendent's Signature

3/11/20
Date of Approval

APPENDIX D

College of Education
UNIVERSITY OF GEORGIA

UNIVERSITY OF GEORGIA CONSENT FORM

Enhancing Professional Learning Communities to Improve Student Achievement

August 2020

Dear Staff Participant:

I am a graduate student in the Department of Educational Leadership and Policy at The University of Georgia. I invite you to participate in a research study entitled, Enhancing Professional Learning Communities to Improve Student Achievement at an urban Elementary School that is being conducted under the auspices of Dr. Karen Bryant, the primary investigator for my study. Dr. Bryant is a Clinical Associate Professor, Department of Lifelong Education, Administration, and Policy at the University Of Georgia. Her contact information is as follows:

- bryantkc@uga.edu
- Office: (706) 542-2214, Cell: (706) 817-8442

The purpose of this action research study is to determine whether teachers' perceptions of working as Professional Learning Communities have an impact on the overall teacher performance at a Title I Elementary school located in a large suburban school district. You are being asked to participate in this research because you are a part of the teaching faculty at this school and contribute to our Professional Learning Communities.

As a participant in the research, you will be asked to:

- Participate in virtual meetings to discuss the Action Research design, methods, and procedures.
- Participate in a three-cycle action research process to collect and analyze data and make recommendations to the process.
- Allow virtual meetings to be audio and video recorded. All meetings that are transcribed will use pseudo names to maintain the anonymity of participants.
- Allow your voice to be audio and video recorded when conducting one-on-one virtual meetings.
- Allow the research team to observe teaching best practices virtually via eClass and observe the virtual Collaborative Learning Teams (CLT) sessions. And discuss and share feedback from the observations.

Study Procedures and Timelines:

May-June 2020

- Schedule first action research meeting
- Establish team norms/protocols/meeting dates
- Explore the proposed problem of practice, research questions, and action research plan of action

July-August

- Analyze data
- Conduct interviews, surveys and focus virtual group meetings

August-Sept 2020: Act and Observe Action Research Cycle I

September-October 2020: Act and Observe Action Research Cycle II

November-December 2020: Act and Observe Action Research Cycle III

Methods of Data Collection Anticipated:

- Documents
  - Schools three-year math data for 3rd grade
  - Student common assessments
  - PLC Norms, protocols, and meeting minutes
  - Journal Writing
- Observations
  - If safe to do so, amid the COVID-19 pandemic, we will conduct classroom Walkthroughs of fifth-grade teachers. If not feasible, according to the CDC and district guidelines, we will observe the classroom teachers via the district's eClass platform.
  - Observe the PLC virtually via Zoom, Google Meets, or Ouloook Teams
  - Pre/post Interviews
- Instruments
  - Teacher efficacy Scale survey
  - PLC Scale self-assessment (District Created)
  - Open-ended questionnaires about PLC's
  - District Assessment pre/post math tests

Time Commitments

- The action research design team for this project will spend a maximum of six hours outside of their regular duties and responsibilities. This allotted time will be for designing the interventions and strategies used in the professional development sessions and Action Research Cycles
- The action research implementation team will spend a maximum of five hours outside of their regular duties and responsibilities. The activities during these times will be used for administering surveys, PLC/CLT self-assessments, and individual pre and post interviews.

Your involvement in the study is voluntary, and you may choose not to participate or to stop at any time without penalty or loss of benefits to which you are otherwise entitled. Your decision to not participate or to withdraw from the study will also have no bearing on your employment status with Gwinnett County Public Schools.

If you decide to stop or withdraw from the study, the information/data collected during the audio recordings or video recordings will still be retained and analyzed. Any other information or data already collected from or about you up to the point of your withdrawal will be kept as part of the study and may continue to be analyzed. The information will be kept up to a year to allow the researcher to complete his action research dissertation. Once the study is complete, the recordings attained during the study will be discarded.

The project's research records may be reviewed by the University of Georgia's Educational Leadership and Policy Department.

The results of the research study may be published, but your name or any identifying information will not be used. In fact, the published results will be presented in summary form only. I will not use direct quotes when I submit the information in my finding's summary. The de-identified information from this action research may be used to support other research projects.

The conclusions of this project may provide information to all participants to support teachers through the Gwinnett Teacher Effectiveness Systems. This professional learning community study can positively support a teacher through his/her growth professionally on many of the standards.

There are no known risks or discomforts associated with this research.

This research involves the transmission of data over the Internet. Every reasonable effort has been taken to ensure the effective use of available technology; however, confidentiality during online communication cannot be guaranteed.

If you have any questions about this research project, please feel free to email me at jmd62250@uga.edu. Questions or concerns about your rights as a research participant should be directed to The Chairperson, University of Georgia Institutional Review Board, 609 Boyd GSRC, Athens, Georgia 30602; telephone (706) 542-3199; email address irb@uga.edu.

Thank you for your consideration! Please sign below that you have read the above letter and agree to participate in the study. A copy of this signed letter will be provided to you at the next meeting.

Sincerely,

Jose M. DeJesus

Jose M. DeJesus

Doctoral Candidate: Educational Leadership and Policy

I am a faculty member of Cedar Hill Elementary School. I have read the above letter about the research being conducted by Jose M. DeJesus. I understand that I am a voluntary participant in the study and may withdraw at any time without penalty or bearing on my employment status. I have had all my questions answered about the study. My signature below indicates that I am a participant.

_____	_____	_____
Name of Researcher	Signature	Date
_____	_____	_____
Name of Participant	Signature	Date

Please sign both copies, keep one and return one to the researcher.

APPENDIX E

TEACHER SENSE OF EFFICACY SCALE (TSES) PERMISSION LETTER

William & Mary
School of Education

MEGAN TSCHANNEN-MORAN, PHD
PROFESSOR OF EDUCATIONAL LEADERSHIP

March 13, 2020

Jose,

You have my permission to use the Teacher Sense of Efficacy Scale (formerly called the Ohio State Teacher Sense of Efficacy Scale), which I developed with Anita Woolfolk Hoy, in your research.

You can find a copy of the measure and scoring directions on my web site at http://wmpeople.wm.edu/site/page/mxtsch .

Please use the following as the proper citation:

> Tschannen-Moran, M & Hoy, A. W. (2001). Teacher efficacy: Capturing an elusive construct. *Teaching and Teacher Education*, *17*, 783-805.

I will also attach directions you can follow to access my password protected web site, where you can find the supporting references for this measure as well as other articles I have written on this and related topics.

All the best,

Megan Tschannen-Moran
William & Mary School of Education

P.O. Box 8795 • Williamsburg, VA 23187-8795 • (757) 221-2187 • mxtsch@wm.edu

APPENDIX F

TEACHER SENSE OF EFFICACY SCALE (TSES)

Teacher Beliefs

This questionnaire is designed to help us gain a better understanding of the kinds of things that create challenges for teachers. Your answers are confidential.

Directions: Please indicate your opinion about each of the questions below by marking any one of the nine responses in the columns on the right side, ranging from (1) "None at all" to (9) "A Great Deal" as each represents a degree on the continuum.

Please respond to each of the questions by considering the combination of your *current* ability, resources, and opportunity to do each of the following in your present position.

	None at all		Very Little		Some Degree		Quite A Bit		A Great Deal
1. How much can you do to control disruptive behavior in the classroom?	①	②	③	④	⑤	⑥	⑦	⑧	⑨
2. How much can you do to motivate students who show low interest in school work?	①	②	③	④	⑤	⑥	⑦	⑧	⑨
3. How much can you do to calm a student who is disruptive or noisy?	①	②	③	④	⑤	⑥	⑦	⑧	⑨
4. How much can you do to help your students value learning?	①	②	③	④	⑤	⑥	⑦	⑧	⑨
5. To what extent can you craft good questions for your students?	①	②	③	④	⑤	⑥	⑦	⑧	⑨
6. How much can you do to get children to follow classroom rules?	①	②	③	④	⑤	⑥	⑦	⑧	⑨
7. How much can you do to get students to believe they can do well in school work?	①	②	③	④	⑤	⑥	⑦	⑧	⑨
8. How well can you establish a classroom management system with each group of students?	①	②	③	④	⑤	⑥	⑦	⑧	⑨
9. To what extent can you use a variety of assessment strategies?	①	②	③	④	⑤	⑥	⑦	⑧	⑨
10. To what extent can you provide an alternative explanation or example when students are confused?	①	②	③	④	⑤	⑥	⑦	⑧	⑨
11. How much can you assist families in helping their children do well in school?	①	②	③	④	⑤	⑥	⑦	⑧	⑨
12. How well can you implement alternative teaching strategies in your classroom?	①	②	③	④	⑤	⑥	⑦	⑧	⑨

13. What is your gender?
- O Male
- O Female

14. What is your racial identity?
- O African American
- O White, Non-Hispanic
- O Other

15. What subject matter do you teach? (as many as apply)
- O All (Elementary/ Self-contained)
- O Math
- O Science
- O Language Arts
- O Social Studies

16. What level do you teach?
- O Elementary
- O Middle
- O High

17. What is the context of your school?
- O Urban
- O Suburban
- O Rural

18. What is the approximate proportion of students who receive free and reduced lunches at your school?
- O 0-20%
- O 21-40%
- O 41-60%
- O 61-80%
- O 81-100%

19. What grade level(s) do you teach? ⑩ ① ② ③ ④ ⑤ ⑥ ⑦ ⑧ ⑨

20. How many years have you taught? ⑩ ① ② ③ ④ ⑤ ⑥ ⑦ ⑧ ⑨

For office use only. ⑩ ① ② ③ ④ ⑤ ⑥ ⑦ ⑧ ⑨ / ⑩ ① ② ③ ④ ⑤ ⑥ ⑦ ⑧ ⑨ / ⑩ ① ② ③ ④ ⑤ ⑥ ⑦ ⑧ ⑨

APPENDIX G

PROFESSIONAL LEARNING COMMUNITIES SURVEY

Professional Learning Communities Survey

Based on the article: Building Professional Community in Schools by Sharon Kruse, Karen Seashore Louis and Anthony Bryk.

This survey will help you think about and assess the extent to which each of the major factors associated with professional learning community—critical elements, human resources, and structural conditions is currently present at your school.

1.0 CRITICAL ELEMENTS

1.1 Reflective Dialogue

a. Faculty/staff members talk with each other about their situations and the specific challenges they face.

Not at All	Somewhat	50%	To a large Degree	To a Great Extent
1	2	3	4	5

1.2 De-Privatization of Practice

b. Teachers share, observe, & discuss each others' teaching methods & philosophies.

Not at All	Somewhat	50%	To a large Degree	To a Great Extent
1	2	3	4	5

1.3 Collective Focus on Student Learning

c. Teachers assume that all students can learn at reasonably high levels & that teachers can help them.

Not at All	Somewhat	50%	To a large Degree	To a Great Extent
1	2	3	4	5

1.4 Collaboration

d. Teachers not only work together to develop shared understandings of students, curriculum & instructional policy, but also produce materials & activities that improve instruction, curriculum, & assessment.

Not at All	Somewhat	50%	To a large Degree	To a Great Extent
1	2	3	4	5

1.5 Shared Norms and Values

e. Through words & actions teachers affirm their common values concerning critical educational issues and in support of their collective focus on student learning.

Not at All	Somewhat	50%	To a large Degree	To a Great Extent
1	2	3	4	5

Protocols are most powerful and effective when used within an ongoing professional learning community and facilitated by a skilled facilitator. To learn more about professional learning communities and seminars for facilitation, please visit the School Reform Initiative website at www.schoolreforminitiative.org

APPENDIX H

COLLABORATIVE LEARNING TEAM IMPLEMENTATION SELF-ASSESSMENT

(TEAM ACCOUNTABILITY)

Collaborative Learning Team Implementation Self-Assessment

Team Accountability "Look Fors"			
Indicators	**Group of Individuals**	**Collaborative Group Getting Work Done**	**Collaborative Learning Team**
Team Leaders	External leader(s); team members comply ☐	Internal leader(s); team members comply ☐	Internal leader(s); distributed leadership among the team ☐
Shared Accountability	Team members are not accountable to the team ☐	Team members share strategies but are not accountable for implementing new learning ☐	Team members demonstrate a shared responsibility for all students and hold one another accountable for implementation ☐
Team Roles	No identified roles ☐	Limited roles such as leader and note taker; roles are fixed; focus is on efficiency ☐	Various roles based on team needs; roles promote team learning ☐
Team Measurement	Individual teachers measure their students' performance ☐	Team measures all students' performance with summative assessments; diagnostic only ☐	Team measures all students' performance using a variety of assessments to improve practice; cycles of continuous improvement ☐
	Each box in this column is **1 point**. Total=___	Each box in this column is **3 points**. Total=___	Each box in this column is **5 points**. Total=____

APPENDIX I

FOCUS GROUP INTERVIEW QUESTIONS

Action Research Team Focus Group Questions

1. What do you believe is the number one challenge facing our 5th-grade students in mathematics?
2. What suggestions, if any, do you have to address this challenge?
3. What is your understanding of what a Professional Learning Community (PLC) is?
4. What do you perceive to be the benefits of working within a PLC?
5. What do you personally hope to gain from the experience of participating in a PLC?
6. What do you perceive to be the barriers to collaboration among teachers in your PLC?
7. Do you believe that participation in a PLC will increase the academic achievement of your students?
8. Do you believe the current structures for collaborative planning will help you improve your craft as a teacher?
9. What changes in your collaborative learning team structure, if any, do you believe will help strengthen your current practices?
10. What role does school leadership play in supporting the PLC?

APPENDIX J

AR TEAM INDIVIDUAL INTERVIEW QUESTIONNAIRE

AR Team Individual Interview Questionnaire

1) Based on the various articles you read over the course of the study, what is your definition of a professional learning community?
    a. What are some key characteristics of a PLC?

2) Based on your current PLC,
    a. Describe two practices that are effective within your PLC.
    b. Describe two practices that are not evident or effective in your PLC

3) Do you believe establishing a sense of trust and respect among your peers within the PLC important?
    a. If so, how important is this attribute in a functioning PLC?

4) How important is analyzing student work samples and student achievement data within the PLC? Explain your thoughts.

5) How has participating in a PLC affected your classroom instructional practices?

6) Do you believe that your participation in a PLC has affected your students' academic achievement?

7) What do you believe may be some barriers to implementing and sustaining an effective PLC?

8) In your opinion, what is the school administrator's role in a PLC?

9) What do you believe are the essential components of developing an effective PLC at Coronado ES?