THE INFLUENCE OF SCHOOL LEVEL ON PERCEPTIONS OF COMPONENTS OF PROFESSIONAL LEARNING COMMUNITIES IN TRADITIONAL PUBLIC SCHOOLS

by

Jennifer Metz Hollingsworth

Liberty University

A Dissertation Presented in Partial Fulfillment

Of the Requirements for the Degree

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APPROVED BY:

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ABSTRACT

The purpose of this study was to compare the influence of school level to schools' perceptions of school leadership, instructional practice and support, and professional development, components of professional learning communities. Participants included traditional public schools serving students in kindergarten through twelfth grade in North Carolina. Instrumentation for the study included select questions from the North Carolina Teacher Working Conditions survey and the Active LEA (School District) School Report from the North Carolina Department of Public Instruction. Designed as an ex-post facto causal comparative study, a two-sample *t*-test between percents was used to analyze the data. No significant differences in teacher perceptions in any of the studied components of professional learning communities when comparing elementary school to middle school, elementary school to high school, or middle school to high school. The researcher failed to reject all nine hypotheses for the study indicating that while the methods teachers use to meet the needs of the learners and the learners vary, the practices involving professional learning communities are perceived to be the same among North Carolina public school teachers. This study aims to add quantitative support to the existing literature for implementation of improving upon professional learning communities in schools. Recommendations for further study include widening study participants to include private schools, charter schools, and those that do not serve traditional students, examining locality as a factor, including results from prior survey administrations and survey administrations since 2016 to look for trend data, and using teacher demographics as a variable to examine teacher perceptions.

Keywords: professional learning communities, perception, school level, school leadership, instructional practice and support, and professional development

Copyright Page

Dedication

This paper is dedicated first and foremost to my family. My husband, Donny, and children, Hailey, Finn, and Kenzie, have made many sacrifices that allowed me to chase this dream. My journey to this point would not have been possible if it were not for the strength and grace that Donny gave me as I traveled along this path. He believed in me when I did not believe in myself. He took over the household chores so I could focus on completing research. He told me every day he was proud of me and that he knew I could do this. My children were my constant cheerleaders. They forgave me when I missed soccer practices or trips to the horse stables so I could focus on writing. I know they are just as excited as I am to be able to spend time together that does not involve mom bringing her laptop. This paper is for them.

This paper is also dedicated to my Dad, Mike. My dad has always been a hard worker, and he instilled this trait in me. I often hear his voice telling me I can do anything I put my mind to and to not start something unless I can finish it. Growing up he always told me I would go to college and be successful. Without his guidance, encouragement, and wisdom I would not be where I am today. This paper is for him.

Finally, this paper is dedicated to my sister, Stacy. Even though we did not agree on much growing up and she could be hateful to me at times, I have always looked up to her. Her strength and dignity are second to none. Despite her busy life she always lets me talk about my frustrations and helps me find the good. She is one of the strongest women I know and is a wonderful example of what a great sister and friend should be. This paper is for her.

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North Carolina Teacher Working Conditions Survey (NCTWCS)

Professional Learning Communities (PLCs)

Teaching, Empowering, Leading, and Learning (TELL)

Zone of Proximal Development (ZPD)

CHAPTER ONE: INTRODUCTION

Overview

"Great art relies on the mastery and application of foundational skills, learned through diligent study" (Lemov, 2015, p. 1). Schools across the United States are full of teachers and staff who are working to develop their artistic craft of educating students. Examining differences in perceptions of how teachers work to perfect their art may help school districts continue to improve student learning. The purpose of this chapter is to provide a framework for this study. Background information regarding the importance of having the necessary components of professional learning communities is presented. The purpose statement describes the goal of the study, and an explanation of the importance of the study is given. Research questions that guide this study are presented that focus the study towards schools' perceptions of professional learning and if differences exist between schools based on location or based on the grade levels served. Important definitions and a summary of the chapter are also presented.

Background

Secretary of Education Betsy DeVos said, "We know a great teacher is the foundation of a great education. By ensuring teachers are able to continually grow and improve in ways that excite and challenge them, we can help students succeed" (U.S. Department of Education, 2019). Schools that are "embracing data, research, and the collective knowledge of their local community" (Gates, 2019, para. 17) have the potential to provide opportunities to help students succeed by allowing them to identify challenges and solutions. Teacher perceptions of working conditions have potential to "affect teachers' individual and collective instructional quality and effectiveness" (Bettini, Crockett, & Brownell, 2016, p. 178). Working conditions such as collegial interactions with other teachers, access to curricular materials, and the psychological

and cultural features of a school are factors that need to be examined when considering instructional quality of teachers (Bettini et al., 2016). Conditions can vary based on school features such as urbanity of the area and the age level of those served by the school (Grant, Jeon, & Buettner, 2019). As school systems continue to address the concerns of student achievement, school systems must look at how teachers are working together and the conditions in which they are working to help ensure that teachers are provided the right atmosphere to make data-driven instructional decisions for students.

Historical Context

The use of data to drive instruction gained strength during the rise of high-stakes testing. Resulting from federal requirements of No Child Left Behind and Race to the Top, states began to adopt Common Core State Standards and standardized tests to meet accountability requirements (Mertler, 2014). Educational leaders have implemented various policies, curricular tools, and online programs in order to help teachers reach improvement goals that coincide with the rigorous demands of the policies that have been put into place. Schools are shifting away from having a single teacher making instructional decisions and are instead adopting a practice where teachers work together to make decisions about groups of students. Using data to drive instruction is not a new concept as teachers have often used observational data and student work to determine scope and sequence of lessons (Mertler, 2014). In the past, teachers looked at test scores and end of grade assessments. Now teachers and educational leaders examine local assessments, classroom tests, quizzes, performance-based assessments, portfolios, homework, student responses, reflections, and standardized data to make data-driven decisions regarding students' education. Teachers use the results from these sources to plan for differentiated

instruction where students engage with standards in a variety of ways that meet the needs of the learners.

There are many concepts where teachers participate in professional networks to contribute to continuous school improvement such as grade level teams, communities of practice, focused collaboration, and committees (Cravens, Drake, Goldring, & Schuermann, 2017; Prenger, Poortman, & Handelzalts, 2018). However, professional learning communities, or PLCs, serve as a method for teachers to examine various types of data in a collaborative format that allows for enhanced teacher learning in a timely and networked manner (Woodland, 2016).

It is essential that schools examine the organization of their PLCs to ensure the components and conditions necessary are present (DuFour, DuFour, Eaker, Many, & Mattos, 2016). More than a meeting with colleagues, PLCs serve as a data inquiry model in an effort to support teachers as they reflect on student data, teaching practices, and improvement (Ronfeldt, Owens, McQueen, & Grissom, 2015; Thornton & Cherrington, 2019). In order for this type of professional development to take place, a shared mission, vision, and set of values should be developed, collective inquiry should take place in collaborative teams, and these teams should be action-oriented and results-driven for sustained and continuous improvement (DuFour et al., 2016). These focused and persistent meetings have been shown to improve teacher and student learning while increasing student achievement (Farley-Ripple & Buttram, 2014; Ronfeldt et al., 2015). The job-embedded, collective process is ongoing, resulting not only in higher student achievement but higher teacher capacity (DuFour, 2014).

Organization of meetings, focused collaboration sessions, and PLCs can vary by the level of the school. Common planning time is a practice adopted by schools that allows teachers to meet together at regularly scheduled times to develop instructional plans together in an effort to

positively impact student achievement (Legters, Adams, & Williams, 2010). Traditionally high schools have not incorporated this type of planning into the master schedule, instead providing teachers an individual time during the day to prepare for their lessons (Legters et al., 2010). Now, some high schools are organizing planning times for teachers who work on grade level teams, subject area teams, or interdisciplinary teams to meet once or twice a week in order to use data to set achievement goals, monitor student progress, and work together to determine instructional practices that best meet the needs of the learners (Legters et al., 2010). Other schools, both elementary and secondary, still organize individual planning time that allows teachers to prepare materials, review student work, and meet with parents. Teachers need this time so they can prepare to implement best practices and strategies for their learners (Merritt, 2017). Organization of these planning times can vary by school level as the master schedule created by the school administrator has different needs based on the ages and needs of the students the school serves. Perceptions of support by administration to engage in meetings and in PLCs can vary from school to school and can impact the teams' engagement in the meetings (Lomascolo & Angelle, 2017).

Other differences exist between levels of schools that have potential to impact teacher perceptions of components of PLCs. Job designs of teachers vary by nature of the setting, creating different atmospheres for teachers at various educational levels. Elementary teachers tend to teach multiple content areas while middle and high school teachers may focus on one or two subjects. Leadership practices may differ, and the developmental needs of students vary from grade level to grade level. The interactions in which teachers engage with one another can vary by the type of school as well since there may be different levels of available support based

on the type of school. There may also be differences in perceptions among the levels of educators regarding components of PLCs.

Theoretical Framework

Social constructivism is the overarching theory related to the present issue. According to Piagetian constructivist theory, perceptions build and change as individuals construct knowledge (Bada, 2015). Vygotsky further developed this idea by emphasizing the importance of social and cultural environments and the impact these environments have on individuals as they construct perception and meaning (Schrader, 2015). Teachers use each other's knowledge to develop new knowledge surrounding teaching and learning (Prytula, 2012). As they engage in collegial social interactions, teachers construct meaning and perceptions of their environment in order to make sense of their experiences (Keegan, 2019). Teachers must perceive that their contributions and knowledge will be valued, respected, and heard in the collaborative process, all components of successful PLCs (Carpenter, 2017). Trust and interactions required of teachers in these conditions are influenced by the environment and the culture of the school. Examining teacher perceptions of the conditions that promote professional development is critical.

Bandura's social cognitive theory is also applicable to present in the current issue. Bandura suggested that behaviors, environments, and personal factors such as thoughts and feelings work in conjunction with one another to determine how people react to and perceive situations (Oppong, 2014). Mastery experiences, which include situations where teachers observe others and situations where teachers work collaboratively, are essential in personal growth and professional development of educators (Goddard, Goddard, Kim, & Miller, 2015). Teachers will determine how to behave and feel while they make sense of what is observed in the given environment. Responses and perceptions are dependent upon the culture of the school

and the conditions in which the work takes place (Goddard et al., 2015). DuFour (2014) suggested PLCs are a form of powerful professional development for teachers as they work collaboratively towards a common goal and recommended that teachers fine-tune their teaching practices by selecting researched-based instructional strategies in a collaborative manner.

Social capital theory, or the idea that a shared sense of identity and understanding impacts cohesiveness and effectiveness of a group, is also applicable (Bridwell-Mitchell & Cooc, 2016; Singh & Koiri, 2016). Social capital involves developing relationships among people so that change occurs (Seibert, Kraimer, & Liden, 2001). Examining perceptions of qualities that impact the development of group cohesiveness has the potential to help schools determine if teachers are in the proper environment to improve their practices.

Problem Statement

Research has shown that differences in "the characteristic of data use cultures and the manner in which social support, resources, and infrastructures influence how teachers engage with assessment data" exist (Abrams, Varier, & Jackson, 2016, p. 24). If essential elements of PLCs are perceived to be missing or if teachers feel unsupported in their efforts, teachers may only be engaging in collaborative discussions to be compliant with school practices instead of engaging in the process to improve student learning (Farley-Ripple & Buttram, 2014). Perceptions of school cultural factors such as distributed leadership and professional collaboration have been shown to be associated with teachers' work attitudes (Torres, 2019). The level of the school can play a role in access to subject matter experts, technological resources, and funding (Goforth, Yosai, Brown, & Shindorf, 2017).

The problem is that while research has identified what components are necessary to have effective PLCs, there is a need to capture "important aspects of practice, such as the content or

quality of collaboration, discussions of data, or instructional decision making" (Farley-Ripple & Buttram, 2014, p. 50). There is also a need to examine how teachers' beliefs interact with decisions about instructional practice and grouping of students (Park & Datnow, 2017). Perceptions of components of effective PLCs, such as the role and development of trust, also need to be examined (Hallam, Smith, Hite, Hite, & Wilcox, 2015). There is also a lack of understanding if perceptions of these elements vary based on the level of the school. The problem is that the literature does not adequately address whether perceptions of components of PLCs held by teachers in traditional public schools are based on the school's level.

Purpose Statement

The purpose of this causal-comparative study was to test the constructivist theory that compares school level to schools' reported perceptions of components of PLCs for public schools in North Carolina, as reported on the North Carolina Teacher Working Conditions Survey. The independent variable of school level was generally defined as elementary, middle, or high, based on the grade-level configuration of the school. The dependent variables of interest were generally defined as composite constructs of school leadership, instructional practice and support, and professional development. School leadership examined the problem-solving and collaborative inquiry culture of the school, the ability of teachers to be seen as and engage as educational leaders, and the ability of the school leadership to create a positive climate (New Teacher Center, 2019b). Instructional practices and support were defined as the availability of resources and support for teachers to make data-driven instructional decisions focused on student learning (New Teacher Center, 2019b). Finally, professional development was defined as learning opportunities for teachers to develop their craft (New Teacher Center, 2019b). These

components are integrated into PLCs (Turner, Christensen, Zacker-Cam, Fulmer, & Trucano, 2018).

Significance of the Study

PLCs have the potential to increase student achievement and to shift the culture of a school as teachers move towards a collaborative culture with shared responsibility for students (DuFour et al., 2016). Studies have shown that teacher engagement in PLCs impacts student achievement and more, such as creativity, self-management, independence, and collaboration skills (Louis & Marks, 1998; Owen, 2015). Trust among co-workers and trust between teachers and administration, shared vision, and collaboration are imperative to ensuring the processes involved in PLCs, such as making data-driven decisions on which research-based practices to incorporate, and lead to teacher implementation of strategies (Hallam et al., 2015). Additionally, studies surrounding metacognition of teachers as they engage in PLCs have shown that teacher involvement can be nurtured if the culture is conducive to nurturing and that the leader's ability impacts the type of work in the PLC (Prytula, 2012).

This study aims to add to the current body of literature surrounding PLCs by examining the perception of the factors that must be present in order for the PLC to be effective. This research aims to add to the empirical work by examining perceptions in various geographical areas within North Carolina and by examining perceptions collectively held by educators at all levels of public school teaching, kindergarten through 12th grade. The research findings have the potential to help district and school leaders make decisions as they implement PLCs, allowing them to be cognizant of how perceptions may vary by location and school level. The research may also lead to district leaders examining funding and resource allocation in an effort to improve perceptions of teachers.

Research Questions

This study sought to answer the following research questions below.

RQ1: Is there a difference between traditional public elementary and middle school educators' perception of *school leadership,* a component of professional learning communities?

RQ2: Is there a difference between traditional public elementary and high school educators' perception of *school leadership,* a component of a professional learning communities?

RQ3: Is there a difference between traditional public middle and high school educators' perception of *school leadership,* a component of professional learning communities?

RQ4: Is there a difference between traditional public elementary and middle school educators' perception of *professional development,* a component of a professional learning communities?

RQ5: Is there a difference between traditional public elementary and high school educators' perception of *professional development,* a component of a professional learning communities?

RQ6: Is there a difference between traditional public middle and high school educators' perception of *professional development*, a component of professional learning communities?

RQ7: Is there a difference between traditional public elementary and middle school educators' perception of *instructional practices and support,* a component of a professional learning communities?

RQ8: Is there a difference between traditional public elementary and high school educators' perception of *instructional practices and support,* a component of a professional learning communities?

RQ9: Is there a difference between traditional public middle and high school educators' perception of *instructional practices and support*, a component of professional learning communities?

Definitions

The terms pertinent to the study are listed and defined below.

1. *Professional Learning Community (PLC)* – A team of educators who share the same vision and engage in a cycle for analysis and learning, involving ongoing collaboration and reflection to improve student achievement (DuFour et al., 2016).
2. *Perception* – Perception is an awareness and understanding of surroundings and situations that can be influenced by observation, beliefs, attitudes, expectations, and sensory-based stimuli (McDonald, 2011).
3. *Collaboration for PLCs* – A systematic process where individuals work with one another to clarify learning targets, create agreed-upon common assessments, analyze results, and plan for instruction for their learners (DuFour et al., 2016).
4. *School Culture* – Assumptions, beliefs, expectations, and habits of the majority of the employees within a school, making these the norm (Mattos, DuFour, DuFour, Eaker, & Many, 2016).
5. *School Level* – School level refers to grade levels served within the building. Primary schools are elementary schools, serving students ranging from Grades K–5 and middle schools who serve students in Grades 6–8. Secondary schools generally are high schools with Grades 9–12 (U.S. Department of Education, 2008).

6. *Professional Development (PD)* – Activities, relationships, and/or observations that have an intended outcome of improving instructional practices to influence student achievement (Noonan, 2019).
7. *Instructional Practice and Support* – Formal organizational conditions for teachers to collaborate and their accessibility to resources to improve teaching and learning (Woodland & Mazur, 2019).

CHAPTER TWO: LITERATURE REVIEW

Overview

The following literature review identifies studies that explore an understanding of professional learning communities (PLCs) and their benefits and drawbacks to the school community. It also examines differences that exist between levels of schools, elementary, middle, or high, and how these differences can impact teacher perception. This work is helpful to educational leaders who are implementing or improving their PLCs and highlights the gap in the literature concerning the influence of school locality and teacher satisfaction on PLCs. The first section of the chapter also provides the framework for the theoretical foundations of the study, which includes the social constructivist theory and the social cognitive theory. The second section reviews literature depicting characteristics of PLCs, benefits of PLCs on students and teachers, and the drawbacks of PLCs. It also analyzes recent literature concerning factors that influence perceptions based on school level. Ultimately, the review of the literature demonstrates the need to conduct the current study.

Theoretical Framework

Educators, school and district leaders, and staff members sometimes learn and acquire knowledge in ways that are different from the students whom they teach and nurture. However, there are still some elements concerning the education of young children that can provide foundational information about how adult learning occurs. Cultural and social aspects of the environment influence sense-making and learning. The connection between sense-making and perception of experiences can influence actions and motivation. Many factors exist that influence perception and motivation as well. Social constructivism and the social cognitive

theory are key theories that can be used to understand adult perceptions, sense-making, and experiences and the actions that result.

Constructivism

Constructivism is a learning theory that describes how the mind builds knowledge and meaning. Piaget thought that people make meaning when they interact with knowledge and with the person who holds the knowledge (Bada, 2015). Piaget argued that accommodation and assimilation are two main processes that are involved when individuals create knowledge. Assimilation occurs when new experiences are blended in and combined with older experiences, causing perceptions to change. Accommodation occurs when new experiences do not always align with an individual's current framework of the world, causing the individual to reframe both expectations and outcomes (Bada, 2015). This is similar to Bruner's theory on constructivism which emphasizes the mental processes and structure that allows an individual to organize experiences based on prior knowledge, allowing new information to form (Bada, 2015). Vygotsky originated the idea that social environments, cultural environments, engagement with peers, and available artifacts or tools all help construct meaning when learning occurs (Schrader, 2015). Vygotsky believed the main principle of constructing knowledge is culture and the context where social activities take place (Schrader, 2015). A key aspect influencing motivation to learn and change is the culture that surrounds the individual where social aspects of learning occur. The culture guides an individual in determining what and how to think while engaging in problem-solving experiences (Schrader, 2015). Teachers are continuously seeking to understand why students are or are not achieving, how the learning and growth can improve, and how their teaching practices can support this achievement. They are trying to understand the culture of the environment and make sense of the experiences in which they live, which is the root of social

constructivism (Keegan, 2019). PLCs embody the culture of the school while providing a platform for teachers to engage in sense-making as they examine their experiences in their classrooms. The PLC provides a social aspect for teachers to share information, to discuss data, to make decisions, and to plan in a collaborative environment (DuFour et al., 2016). Perceptions of these interactions can be developed from these social interactions and the culture of the environment in which they occur under the constructivist theory.

The Zone of Proximal Development, or ZPD, is usually a term discussed when discussing how children learn (Parkay, Anctil, & Hass, 2014). This zone for learning blends the balance between not exceeding the current level of understanding while not underestimating the ability of the learner. It describes the difference between what an individual can do alone and what the individual can do with assistance, guidance, or encouragement from an individual that already exhibits a desired skill (Parkay et al., 2014). The skills are close to mastery and can be mastered with assistance (Parkay et al., 2014). This aspect of social constructivism is also present in Kegan's theory of adult constructive development in that both biological and social processes are involved in making meaning and constructing new meaning from past and current interactions (Stewart & Wolodko, 2016). This theory recognizes that adults "actively construct ways of understanding and making sense of themselves and the world" (McCauley, Drath, Palus, O'Connor, & Baker, 2006, p. 636). Adults make meaning in patterns called orders of development that occur sequentially. When a new order of development is created, the old order does not disappear completely. Instead, it remains a perspective that an individual can recall and reflect upon over time (McCauley et al., 2006). The order of development "influences what they notice or can become aware of, and therefore, what they can describe, reflect on, and change" (McCauley et al., 2006, p. 636). The orders move from subjective to objective beliefs and

include dependent aspects such as socially acceptable behavior and approval of others, independent aspects like effectiveness and success within systems, and "inter-independent" aspects like linking principles to practice and systems interactions (McCauley et al., 2006). In PLCs, teachers examine instructional practices currently in place within classrooms, representing what each teacher can do individually. Through conversations, teachers discuss ways in which they improve their practice, ultimately improving student achievement. The constructed dialogue and scaffolded process help teachers comprehend new knowledge, skills, and strategies that they might not have otherwise learned (DuFour et al., 2016).

Another significant aspect of social constructivism is a reflection of learning. Rogoff described reflection as "temporal simultaneity in the social and individual processes" (as cited in Schrader, 2015, p. 26) where the context of learning takes place. Reflections aid constructing new knowledge in multiple dimensions of learning. Cognitively, reflection can help individuals understand the situational context and how individuals respond and adapt in various ways (Lundgren, 2014). Reflecting on emotional dimensions can help identify perceptions based on experiences where reflecting on the social dimension of learning can help describe perceptions of relationships and the roles they plan during collaboration (Lundgren, 2014). During PLCs, teachers often reflect on what happened in their classrooms and on outcomes of student data as a collective group. They may also reflect on this and the proceedings of the PLC. This allows teachers to process the impact and results of PLCs not only in the moment but for every day after they engage in the process. The method of reflecting collaboratively and individually provides a method for continuous learning, improvement, and growth, allowing teachers to build their knowledge from experience.

Social Cognitive Theory

Bandura's social cognitive theory is present in the underlying makeup of PLCs. This theory suggests that learning takes place as a result of a combination of situations, such as observing others, making sense of what is seen, and reacting to what is presented. All of these things are dependent upon the environment and the conditions in which the situations take place. Individuals remember the behavior of others and the consequences of that behavior along with the events that caused the individuals to act in the chosen displayed behaviors (Parkay et al., 2014). These observations serve as a guide for the learner as the learner figures out how to behave while participating in or responding to similar situations. Research suggests that mastery experiences and social persuasion can occur based on the environment (Goddard et al., 2015; Maxwell, Reynolds, Lee, Subasic, & Bromhead, 2017). These mastery experiences are critical in developing professional growth and self-efficacy, all of which may influence teacher satisfaction, teacher perception, and participation in PLCs (Goddard et al., 2015). The collaborative portion of the PLC involves an opportunity for teachers to share and interact with one another. This serves as a foundational piece for building relationships, a sense of community, and teacher collective efficacy (Goddard et al., 2015). Perceptions that teachers form can be dependent upon the behavior and consequences of the different situations and the environments in which these situations occur as they make sense of activities happening around them. Relationships could vary by school location and by the level of the school.

Current research also suggests that teachers' relationships with one another have a substantial impact on school improvement and student achievement (Bridwell-Mitchell & Cooc, 2016). These relationships also help foster sustainable development so that long term and short term goals of schools can be attained. Research shows that communities that think in terms of

the overall population instead of individuals tend to have higher social capital, which leads to higher trust among those involved in the community (Singh & Koiri, 2016). Bridwell-Mitchell and Cooc (2016) conducted research that found individual characteristics of teachers influence the relationships they form with one another and the communities in which they are informally involved. Age, professional role, educational attainment, gender, and status all play a part in determining the relationships and learning communities that develop organically, and they also play a role in the functionality of the formal groups created by school leaders. The social capital, or shared sense of identity, understanding, and norms of the group, also impacts cohesiveness (Bridwell-Mitchell & Cooc, 2016). Social capital is influenced by shared values, trust, and mutual respect (Singh & Koiri, 2016). Culture, environment, and interactions have the potential to influence teacher perception of their overall school satisfaction. Relationships can have an impact on both how long and why people participate in various social contexts such as PLCs. As teachers construct meaning and perceptions of their surroundings, participation in social contexts that are both required and voluntary may be affected. Their surroundings and social contexts have the potential to change perceptions of teachers and of their participation in collaborative teams. The social cognitive theory lays a firm foundation for understanding perceptions of PLCs.

Related Literature

Professional Learning Communities

The idea that teacher collaboration positively impacts student achievement has become commonplace in today's educational systems. Many schools and school districts carve out time to provide dedicated opportunities for teachers to engage in a collaborative model. Communities of practice developed to describe how teachers continue to work together to provide optimal

learning conditions through peer networking and focused collaboration sessions (Cravens et al., 2017). Many studies have been conducted to help describe what makes up an effective PLC even though there is no one agreed-upon definition (Owen, 2015; Turner et al., 2018). Cravens et al. (2017) conducted a study and found two key underlying concepts of instruction-focused collaboration and deprivatized practice that must be present for PLCs to thrive and provide results. Instruction-focused collaboration requires teachers and stakeholders to examine data, research-based strategies and activities, and best teaching practices that are responsive to the needs evident from the data (DuFour et al., 2016). Deprivatized practice refers to teachers' letting down their guards and allowing fellow teachers to examine teaching strategies and assessment data and trends as a group. This allows for a group to make decisions regarding educational practices for all students. Deprivatized practices in education also allow for teachers to develop a higher level of comfort with having various stakeholders observe and interact with students during teaching times, setting the foundation for peer-to-peer observations that are essential in teacher growth (Cravens et al., 2017). Research suggests that teachers who examine their teaching, the teaching of others, and work together to improve student learning are engaging in the underlying concepts of a PLC (Thornton & Cherrington, 2019). The more routine this type of engagement is, the more proficient teachers become at taking collective ownership of students within the entire school, not just students in their classroom or their grade level (Louis & Marks, 1998). PLCs are also described as a school-based organization where teachers critically review their practices through questioning and reflecting on what is happening in their current reality (Ronfeldt et al., 2015).

Components of PLCs

Much research has been done to determine what conditions need to be in place for this collaborative work to be evident in schools and for the work to be successful. DuFour (2004) argues that in order for PLCs to be effective, the work and members of the group must center around three main ideas: ensuring students learn, ensuring there is a culture of collaboration within the school, and ensuring there is a focus on continuous improvement and results. A focus on learning by the entire school demonstrates a collective commitment and shared belief that all students can learn. This belief serves as the foundational purpose for a learning community (DuFour et al., 2016). The second foundational pillar is having a culture of collaboration. Teachers must recognize that they are no longer taking responsibility for just the students in their class but that there is a collective responsibility to educate all students within the school. This helps build a shared sense of community and increases the overall knowledge held by the staff (DuFour et al., 2016). Finally, schools have to be focused on results if they are going to have effective, successful PLCs. This involves collecting and examining data, strategies, and ideas and analyzing the impact the changes to instruction makes over time (DuFour et al., 2016).

Schools must move through a cyclical process where teachers, working in collaborative groups, collectively determine what students should learn, how learning will be measured, and how teachers should respond when students do or do not learn the intended standards or targets (DuFour, 2014). Having teachers sit together to discuss strategies is not enough. They must share the vision of collaboration as a useful tool to analyze and improve classroom practices and to feel like they are making a difference (DuFour et al., 2016). Voelkel and Chrispeels (2017b) found that teachers need to have high-functioning PLCs in order to feel a sense of collective efficacy. To have high-functioning PLCs, schools need to have a shared vision, a shared focus

on student learning, a method and means for collaboration, and an understanding that sharing of practices can help one another (DuFour et al., 2016; Voelkel & Chrispeels, 2017b). Setting collective goals, focusing on the results through data analysis, and developing teaching practices and student interventions are essential building blocks to having high-functioning and successful PLCs (Ronfeldt et al., 2015).

Even more important is the training that teachers undergo to learn how to effectively engage in conversations and collaboration about student data analysis and the analysis of teaching strategies. Carpenter (2015) found that teachers who were trained on the process valued the time more than those who were not trained, and that by training teachers on the process, teachers believed their administrators were more supportive of the work that came from the PLC. This type of training shows commitment to a climate supportive of focused collaboration and a positive climate (Carpenter, 2017). Self-efficacy of engagement in PLCs and other daily work has been shown to be a primary source "of teacher satisfaction and intrinsic motivation" (Ford, Van Sickle, Clark, Fazio-Brunson, & Schween, 2017, p. 205). Teachers may need professional development to implement the tasks in the PLC cycle of instructional inquiry. The cycle includes setting measurable short-term goals, determining learning targets, sequencing instruction, identifying essential activities and common assessments, administering assessments, and analyzing results. The last step is implementing intervention or enrichment strategies. This culture of collaboration comes with targeted professional development that is supportive of teachers at various levels of comfort and understanding of the process (DuFour et al., 2016). Professional development in these areas helps promote clarity and ownership among teachers, providing them with further satisfaction and motivation (DuFour et al., 2016).

Collaboration for PLCs. Collaboration can be loosely defined as a "condition that occurs when two or more educators interact to solve a problem in a formal and informal school environment" (Carpenter, 2017, p. 1071). However, collaboration for PLCs is more clearly defined as joint work where teachers engage in planning, action research, and deliberation of data and other information (Lockton, 2019). In terms of a PLC, collaboration is also a systematic process where teachers work interdependently as they focus on impacting their teaching and learning practices in an effort to improve student achievement (DuFour et al., 2016). This shared vision, shared purpose, and sense of collective learning make up a culture of collaboration (DuFour et al., 2016; Lockton, 2019). The collaborative culture must be present in the entire school and must be a shared value that begins with the school leaders. This allows for the work to be voluntary, a key aspect in teachers perceiving their work as valuable and respected as part of shared responsibility (Carpenter, 2017). Teachers who feel they have a sense of ownership in professional development and the work of PLCs tend to have more productive outcomes than those who show less ownership. Less ownership often results in teachers feeling like their work is not valued (Schaap & de Bruijn, 2018). The main way to develop this sense of collaboration is to ensure teachers engage in norm-setting to guide their discourse and their time together. More than etiquette and behavioral guidelines, norms exist to help teachers determine how they will work together during their collaborative interactions and how to respond when someone strays from agreed-upon norms (Carpenter, 2017). Without norms, groups may not develop the culture of collaboration as they may perceive their contributions as unvalued, not appreciated, and not equally represented in the work of the group (Carpenter, 2017).

PLCs are not just for classroom teachers. The capacity for schools to improve student achievement relies on the discourse and interactions among teachers and professionals within the

school building (Horn & Little, 2017). Teachers' professional learning includes job-embedded learning along with more formally structured professional development offered by subject matter experts or other staff members that work within the school (Bryant, Lun, & Adames, 2020). These middle level leaders share best practices with teachers, help ensure alignment of goals across the school and programs or content areas, and work with teachers to ensure fidelity of standards implementation as they examine data and keep students at the center of the meetings (Bryant et al., 2020). These leaders include any person that is accountable to school administration with "formal administrative responsibilities" and who works with teachers and teams of teachers (Bryant et al., 2020, p. 2). School media specialists, for example, should collaborate with teachers to provide resources, activities, strategies, and materials that integrate into the content and standards. Special education teachers that serve students in small groups are another example. These teachers can provide valuable information when they collaborate with the regular education teachers as they share pedagogical information and develop a wide range of instructional strategies that help students with disabilities and those without disabilities (Many & Schmidt, 2013). These informal professional learning experiences support the whole teacher as the groups co-develop their crafts (Trust, Krutka, & Carpenter, 2016). Three of the four main questions being answered during time spent in PLCs revolve around student learning and activities that engage students in material, so it is important that a variety of individuals are present as they work towards a shared goal of improving student achievement (DuFour et al., 2016)

School Leadership

There is a correlation between school leadership, student achievement, and school improvement (Yeigh et al., 2019). There are many types of leaders within a school setting that

helps achieve school improvement. Principals and assistant principals are two types of educational leaders found in schools. Teacher leaders, such as those who lead PLCs or grade level chairs, are also leaders within the school. The role of the leader plays an important part in PLCs.

School administration. Effective school principals understand the roles the school environment, social climate, and instructional climate play when striving to make a positive change (Griffith, 1999). Leaders can act as either loosely-coupled authorities or integrated authorities. Loosely-coupled leaders act as a "buffer between the day-to-day operations of the school and external pressures" (Griffith, 1999, p. 270) without making changes in practice. Administrators who act in this manner tend to align school goals and instructional practices without the feedback from all stakeholders. Integrated leaders have structures in place that take into consideration the feedback from all stakeholders, including students, to help align school structures, goals, and plans to meet these goals (Griffith, 1999). Leaders can also be transactional, where there is an emphasis of mutual support, expectations, and interpersonal relationships, or transformational, where they "rely on a personal value system that they motivate followers to adopt" (McCauley et al., 2006, p. 639). The type of leadership that exists in the school can play a strong role in determining the climate of the school. It can also impact teacher perceptions of their working conditions and their collective efficacy to educate students (Rudasill, Snyder, Levinson, & Adelson, 2018). While teaching and instructional activities are inherently observable features of the educational process, principals that understand the impact of school climate recognize that the teachers' perceptions of the school's climate can be influenced by visions and expectations for planning and allowing educators to engage in professional growth opportunities (DuFour et al., 2016; Griffith, 1999; Rudasill et al., 2018).

Since a direct relationship exists between accountability pressures imposed upon teachers and school climate, leaders need to recognize how their values concerning student achievement can have unintended consequences and can work to ensure systems are in place to prevent these unintended aspects from surfacing (Von der Embse, Pendergast, Segool, Saeki, & Ryan, 2016).

Teacher leadership. Wilson (2016) suggested that leadership is not just the administrator of the school but that teacher leadership is another characteristic of PLCs as well. Teacher leaders step outside of their classroom teaching role to use their expertise in instructional practices to help others reach their potential in a collective effort to improve student learning and achievement (Wilson, 2016). Teachers who are forced to lead grade levels, staff meetings, or facilitate professional development by the school administration tend to have contrived interactions with coworkers and have an overall negative impact on the collective self-efficacy of teachers with whom they work. However, Charner-Laird, Ippolito, and Dobbs (2016) found that teacher leaders can help others to see the big picture, establish structure and routines for the PLC, and facilitate the engagement of others when they work collaboratively towards a shared goal. To be an effective PLC, these types of leaders need to share a positive vision and a sense of collaborative culture (Charner-Laird et al., 2016). Under these conditions, trust can form so that the teachers can relate to one another (Newberry, Sanchez, & Clark, 2018). Teachers who are mentoring new teachers to the profession, to a grade level, or to their subject area also act as school leaders who contribute to effective PLCs (Shanks, 2017). The relationships that develop within the school, especially with teacher leaders, can impact the working of a PLC and the learning that occurs (Newberry et al., 2018). The deprivatized practice of educators sharing responsibility for students in all classrooms allows for teacher

leaders to promote collaboration among educators and peer-to-peer constructive dialogue focused on improving student achievement (Cravens et al., 2017).

Leadership and climate. School climate is influenced by school leadership and impacts interactions between and among stakeholder groups. School climate can be defined as the overall quality of and social characteristics of a school-based on patterns of stakeholder experiences and the norms, values, relationships, and practices exhibited within the school and structures of the school (Maxwell et al., 2017; Rudasill et al., 2018; Sulak, 2018). Positive school climates indicate teachers and school leaders have positive relationships with one another, with parents, with students, and with other stakeholders. In schools that have a high culture of collegiality, teachers are able to work together to implement changes learned in professional development or those determined necessary during focused collaboration times (Whitworth & Chiu, 2017). School climate is a leading predictor of students' behavior, self-esteem, and academic achievement, and both students and teachers need a safe and positive climate to feel a sense of collective efficacy as they engage in learning experiences together (Maxwell et al., 2017). When asked about their perceptions, "staff perceptions of school climate were significant predictors of students' academic achievement" (Maxwell et al., 2017, p. 11). Location, school size, organization, instructional practices and approaches, school norms, shared values and beliefs, and school design are all variables that impact climate and many can be controlled or influenced by school leadership. Some of these aspects can be manipulated easier than others if there is a need to change them, but all of these influence the overall feel of the school (Griffith, 1999). Shared beliefs and values depict engagement of staff and students, the expectations held for staff, students and leadership, the level of trust and respect, and the belief that all students can be successful and learn (DuFour et al., 2016; Rudasill et al., 2018). These aspects can be

difficult to change but are important foundational pieces to building and sustaining highly functioning collaborative teams and learning communities. If the pillars of mission, vision, values, and goals are not shared among staff members, leaders, and stakeholders then the climate may not support effective collaboration and the subsequent work that teachers engage in to plan effective instruction (DuFour et al., 2016).

Educational leaders and administrators have to be involved in collaboration sessions as well for PLCs to be effective (DuFour et al., 2016). Administrators who frequently monitor instruction and provide instructional guidance are viewed as valuing collaborative work of teachers during PLC times (Goddard et al., 2015). Those whose school administrators did not monitor and engage in educational processes showed the least frequent formal collaborative sessions (Goddard et al., 2015). Teachers, leaders, and administrators alike must value the process, time, and results. Collaboration for instructional practice and support works best when work is generated with the understanding that ideas, plans, and activities will be open for discussion, "verification, and refutation or modification" (Cravens et al., 2017, p. 529). Educational leaders need to create a safe space for this type of work, where all who collaborate will be respected for their knowledge, skills, and opinions (Carpenter, 2015; Carpenter, 2017). Successful PLCs happen when administrators mandate the time for teachers to examine student data collaboratively (Carpenter, 2015).

Other forms of collaboration are imperative to successful PLCs as well. Visiting other classrooms to learn about teaching strategies and working with other teachers to implement new ideas are both forms of collaboration. While not shown to predict positive student achievement, this type of collaboration can impact job satisfaction (Reeves, Pun, & Chung, 2017). Collaborating across grades or departments is another type of collaborative team present in

schools. The type of collaboration, however, is not as important as the expectation of outcomes expressed to teachers by educational leaders as they engage in the work of the collaborative team (Lockton, 2019). Leaders who allow these types of collaboration demonstrate a commitment to the vision and culture of collaboration (DuFour et al., 2016). Without the shared vision of a collaborative culture, teachers may perceive the work as contrived and may simply engage in tasks based on the need to be in compliance with directives from school, district, or state leaders.

Instructional Practice and Support

Changes in teachers' beliefs about their role in planning for and facilitating instruction is dependent upon the support they receive (Shirrell, Hopkins, & Spillane, 2019). Educators are more likely to be aware of and try new instructional practices if school administrators plan for and organize support networks that involve social interactions (Woodland & Mazur, 2019). This promotes not just informal support networks but formal support networks as well, allowing teachers opportunities to form bonds with peers in a safe and controlled environment (Woodland & Mazur, 2019).

Teachers engage in two main types of practices when they meet, supportive practices and developmental practices (Stevens & Kahne, 2006). Supportive practices can be suggestions that help "individual teachers address specific tasks, problems, or concerns" (Stevens & Kahne, 2006, p. 1) through routine classroom interactions. Developmental practices are those that deal with a group of teachers who are attempting "to improve the collective instructional capacity of their members and change core instructional practices" (Stevens & Kahne, 2006, p. 1). PLCs are considered to be a formal process that exist to work on improving developmental practices and, therefore, instructional practices of educators. In order to change instructional practices, teachers need to rethink their teaching. They need to use a period of uninterrupted time where they look

at instructional decisions and practices with a critical lens in order to ensure selection of strategies are paired appropriately with student needs (Voelkel & Chrispeels, 2017a). When working collaboratively, teachers bring different levels of experience that influence their work in examining problems in practice that can influence the conversations surrounding instructional practices (Horn, Garner, Kane, & Brasel, 2017). This allows them to share knowledge and teach one another about the best way to implement research-based instructional practices. It also allows teachers to determine what steps must be in place for the strategies to work and how to respond if the strategies do not meet the expected outcomes (Kent, Wanzek, & Martinez, 2018).

Formal networks also include coaching groups and mentoring. Coaching is a form of job-embedded professional learning that allows for educational experts to form support networks. Coaches work with teachers to develop a prescription for improving instruction rather than providing a generic one-size-fits-all solution to a problem (O'Keefe, 2017). Coaching can also occur in small groups that have the same concerns, such as those in PLCs (O'Keefe, 2017). Teachers who have access to instructional coaches within their schools have higher beliefs about their ability to implement new curriculums, standards, and practices than those who do not have instructional coaches in their school buildings (Shirrell et al., 2019). Mentors serve as another type of support to teachers as they work to develop instructional practices. These individuals work with new teachers or teachers who need guidance to develop supportive learning environments, create and implement successful and appropriate behavioral management strategies, and aid in selection of appropriate instructional strategies all while fostering trust in a formal relationship (Sowell, 2017). Having access to these types of experts when working with new curriculum material also positively impacts collaborative teacher engagement and instructional practices (Kleickmann, Trobst, Jonen, Vehmeyer, & Moller, 2016). These human

resources and the collaborative nature of PLCs support teachers in their effort to have autonomy in making decisions about instruction concerning pacing, pedagogy, and materials.

Professional Development

Many systems exist to provide opportunities for teachers to grow and develop their craft. Spillane and Shirrell (2018) reported that schools and districts spend $18 billion per year on professional development in the United States alone. Public schools "depend on professional development initiatives to drive educational improvement" (Pharis, Wu, Sullivan, & Moore, 2019, p. 30). Professional development can be defined as an educational experience in which teachers engage, either collaboratively or individually, to improve instructional practices (Patton, Parker, & Tannehill, 2015). Teacher learning is strongly affected by the culture and environment of the school and by the leadership of the school. "To be effective, teacher professional development needs the guidance, support, and leadership of subject matter coordinators, school principals, district curriculum coordinators, and even the superintendent of the school" (Patton et al., 2015, p. 27) so that resources and support are appropriately allocated for sustainable professional development. The concept of professional development that provides learning spaces for teachers to collaborate was found to have some impact on teaching practices, but teachers did not always sustain the implementation with fidelity over time (Randel, Apthorp, Beesley, Clark, & Wang, 2016). By ensuring professional development is grounded in social learning while maintaining a focus on improving instructional practices, educational leaders are providing the framework for an increase in student achievement. The dedicated time spent in PLCs can encompass professional development that cultivates deeper understandings of instructional practices (Patton et al., 2015).

PLCs often provide a vehicle for professional development to be carried out with fidelity and for the work to be maintained. Collaborative planning among peers who engage in similar professional development opportunities provides a shared perspective (Pharis et al., 2019). Teacher collaborative sessions and instructional leadership are "indirect predictors of differences among schools in student academic achievement" (Goddard et al., 2015, p. 525). It is crucial for collaboration to be frequent, formal, and focused, all indicators of thriving PLCs (Carpenter, 2017; DuFour et al., 2016). A regular, consistent meeting time where all teachers have access to and use common data supports reflective understanding and development of new instructional practices (Farley-Ripple & Buttram, 2014). The use of data to drive instruction is both an action and reflective practice that occurs during PLCs (Farley-Ripple & Buttram, 2014). Teachers who regularly meet to examine data and to discuss instructional practices report positive impacts on their teaching and their perception that they are working towards improving student achievement (Woodland & Mazur, 2019).

Teacher Working Conditions

Teacher satisfaction with working conditions has the potential to impact involvement in and perception of PLCs. Many factors influence satisfaction. Collegial support, positive culture, positive school climate, empowered administrators, and available support networks were all found to impact special education teacher satisfaction (Ansley, Houchins, & Vargas, 2019). Organizational health has been shown to be the strongest predictor of teacher stress and teacher satisfaction in urban elementary schools (Ouellette et al., 2018). Those who were more satisfied were likely to engage in collaboration in a more positive way than those who were less satisfied with their work (Ansley et al., 2019). Schools that engage in distributed leadership are also more likely to have satisfied teachers (Torres, 2019). Relationships with coworkers and students can

be a source of stress, and stress is shown to be a significant source of dissatisfaction among teachers (Abel & Sewell, 1999). Teacher perceptions of working conditions were found to have an impact on satisfaction. These working conditions include time for collaboration and planning, availability of resources and facilities, community support and parent involvement, student behavior management, teacher leadership and involvement, and professional development to support instructional practices and use of data (Gulosino, Jones, & Franceschini, 2016). Time spent in collaboration and visiting other classrooms to learn instructional strategies leads to higher satisfaction in schools (Reeves et al., 2017). These practices have a direct impact on teaching and learning.

Benefits and Drawbacks of PLCs

There are benefits and drawbacks to PLCs. Benefits include developed relationships where teachers feel comfortable expressing their wants, needs, frustrations, and more (Newberry et al., 2018). This type of practice is especially important to novice teachers just entering the profession. Teachers are focused on student learning and improving practice, all of which are part of the school improvement process (Carpenter, 2015). Collective teacher efficacy exists when teachers engage in productive PLCs, thus improving both teacher satisfaction and student achievement (Reeves et al., 2017). One significant benefit that is also an expected outcome of PLCs is that teachers feel that engaging in this type of collaboration positively impacts their instructional practices, ultimately allowing them to improve student achievement (Woodland & Mazur, 2019). Drawbacks include the potential for teachers to not engage in collaborative learning or to examine student data. If the culture of collaboration is not a theme in the school, if time is not allotted, or if the administration does not support or provide training on how to engage in collaboration, then teachers may not participate to their fullest potential (Carpenter,

2015). The absence of these critical characteristics can lead to poor teacher satisfaction (Bridwell-Mitchell & Cooc, 2016). Additionally, there is no guarantee that PLCs will be successful or that there will be a sustained increase in student achievement. If collaborative teams are dysfunctional, it is likely the work of PLC will be unproductive. Five dysfunctions of PLCs have been identified that can have negative impacts on educational processes (Weber, 2011). Any team can be dysfunctional while other teams are highly successful. A team is considered dysfunctional if it lacks norms, shared team goals, trust among its members, communication, and a plan for communicating, and agreed-upon essential learning outcomes (Weber, 2011). Lack of these essential elements is in direct opposition to what constitutes true PLCs. Monitoring of and engagement in the cycle of collaboration to ensure teams are fully functional can be time-consuming for administrators and teacher leaders.

School Level

The organization of grade levels in schools in the United States has changed over time. "In the 19th century, most communities provided education through the equivalent of about eighth grade" (Modeste & Kelley, 2018, p. 2) with expansion of high school grades beginning in the 1900s. During this time middle grades were considered to be junior high. Middle school configurations came about in the 1960s (Modeste & Kelley, 2018). Now, schools typically organize students by age, placing them in grade levels appropriate for their age. These levels are broken down into primary and secondary (U.S. Department of Education, 2008). Some schools operate on the kindergarten through eighth-grade configuration with a transition to high school in ninth grade. Some schools operate with students in pre-kindergarten through sixth grade, then transition to middle school and high school. Others take on the middle school approach of having Grades 6–8 separate, a configuration designed to deal with the adolescent social,

emotional, and cognitive needs of these students (Modeste & Kelley, 2018). Standardized test results also play a role in how schools are configured as elementary schools that house sixth grade tend to show better performance among sixth graders than those who have sixth grade in middle schools (Malone, Cornell, & Shukla, 2019). Primary schools, also known as elementary schools, generally refer to schools housing students in kindergarten through five grade, and secondary schools refer to middle schools, Grades 6–8, and high schools, Grades 9–12.

This study examined grade configurations as elementary schools, middle schools, and high schools. It is important to examine differences in the school level to understand how these differences impact instructional practices and school occurrences. Since perception is influenced by the meaning individuals make of their surroundings, it is important to understand the differences and similarities that teachers of each configuration face in factors related to PLCs.

Differences in Job Designs

The developmental ranges of students vary within each grade level band. Piaget popularized a series of developmental stages with each stage ranging in time from months to years. "Although students are usually grouped by chronological age, their development levels may differ significantly" (Ojose, 2008, p. 26) as the rate of advancement through the levels is influenced by each child's level of maturity, aptitude, experiences, and culture. As a result, separate instructional and pedagogical strategies are used in each of the varying configurations of schools due to the developmental stages through which children move. Elementary schools tend to provide the learning contexts for building peer relationships and foundational academic engagement, grouping students based on studied general developmental readiness (Capella, Kim, Neal, & Jackson, 2013). Middle grades emphasize both affective domains and academic

development as students at this school level are experiencing many changes physically and emotionally in addition to growing academically (Wall & Miller, 2015).

Students differ as well, which may impact the perceptions teachers hold as they examine their self-efficacy on student learning. Students may experience a loss of achievement, lower self-esteem, a change in motivation, and a change in teacher-student relationships as they transition from elementary school to middle school (Hong, Zimmer, & Engberg, 2018; Rockoff & Lockwood, 2010). Behaviors students exhibit may vary also, resulting in teachers knowing and using different techniques to manage behavior. Elementary teachers have been found to use targeted strategies such as visual schedules and cues to manage behavior when compared to middle school teachers (Hart, Fabiano, & Evans, 2016). Middle grade students are suspended more frequently than those in a kindergarten through eighth-grade setting, indicating that behavior changes among students depending on the configuration of the school (Modeste & Kelley, 2018). The relationships students form with teachers can vary between the levels as well, impacting the relationships students form with their peers. In middle school, for example, if students form positive relationships with their teachers they are more likely to become friends with peers that are positive influences and exhibit respect and positive behaviors (Shin, Ryan, & North, 2019). High school students are allowed more choice in their classes and may develop different student-teacher relationships as the teacher is focused on a smaller content range, allowing for a smoother transition between primary and secondary settings (Van Rens, Haelermans, Groot, & Van Den Brink, 2018). Educating students at each level can look different based on these differences.

The number of subjects and content areas as well as the amount of time devoted to each subject can vary by level as well. This can fluctuate among districts based on popular strategies

taking place in education, such as integrating curriculum, block scheduling, and inclusion programs in addition to easing overcrowding or staffing concerns (Reeves, 2019). Elementary teachers often teach all content areas of literacy, mathematics, science, and social studies and take college coursework to prepare them to do so. There are some variations where teachers team teach, allowing one teacher to focus on two core subjects and switching students with another teacher who focuses on a separate set of core subjects. High school teachers tend to focus on one specialty content area, such as science, with course offerings based on certification of personnel. English language arts and mathematics have become a huge focus for elementary teachers while time for instruction in subjects like science and social studies has slowly decreased (Isabelle, 2016). This can pose an issue for middle and high school teachers as students may miss out on essential skills needed to be successful with standards in upper education classes (Isabelle, 2016). Field trips, or study trips that include going off campus to increase educational learning experiences, can also vary by level. As connection to the curriculum differs, the nature of the trips will differ as well (Clarke-Vivier & Lee, 2018). The experiences individuals have concerning teaching responsibilities can influence their self-efficacy and their perception of their influence on educating students.

Collaboration and Interactions

The interactions taking place within the collaborative groups found in each school can vary by the level of the school. Elementary teachers who perceive their collaborative sessions as high-functioning report having sessions long enough to engage with data and plan activities to address their needs while those who identified collaborative sessions as low-functioning discussed that they do not address data or do not have enough time to adequately do so (Voelkel & Chrispeels, 2017b). Secondary PLCs are specialized in nature and as such may cause teachers

to be reluctant to share expertise with their peers based on issues, assumptions, and perceptions of one another (Campbell & Lee, 2017). The data discussions held by high school teachers could include information about dropout rates and graduation rates (Miranda & Jaffe-Walter, 2018). Elementary school teachers, on the other hand, often teach multiple content areas and may have data discussions that encompass a larger scope of data. A study concerning elementary school teachers' ability and readiness to implement physical activity breaks during instruction found that elementary schools that have a medium-sized staff had significantly higher instances of collaboration, indicating that the opportunity to develop relationships with broader knowledge bases than smaller districts (Dinkel, Lee, & Schaeffer, 2016). Elementary teachers may feel they have more peer support to implement and sustain learning gained from professional development and collaboration sessions (Puhala, 2018). Secondary teachers may feel unsupported or underprepared to engage students in educational processes that are outside their main content area. Teachers may believe that content literacy is important to students' educational success, for example, but their ability to integrate and teach literacy to students who perform below grade level varies (Cantrell, Burns, & Callaway, 2009). Perceptions of barriers in accessing the information and resources for professional development can be a factor in teacher engagement with the curriculum and in planning opportunities at all levels (Cantrell et al., 2009; McDuffie, Choppin, Drake, Davis, & Brown, 2018).

Family-school connectedness and development of partnerships vary among school level as well. High school staff members are more apt to communicate with students and teachers directly about post-secondary plans and other school-related concerns whereas parents are more likely to communicate with elementary school staff instead of their child about school-related concerns (Sanders & Simon, 2002). The same study found that high school survey respondents

reported lower support from the parent-teacher association and overall parent support (Sanders & Simon, 2002). The perception of barriers that inhibit the development of community and parental partnerships with schools did not vary based on the level of the school, with each level reporting lack of time and lack of funding as obstacles (Sanders & Simon, 2002).

Job Satisfaction

A study conducted by the United States Department of Education's National Center for Education Statistics (1997) found that elementary school teachers are more satisfied with their jobs than secondary teachers. Job satisfaction has been shown to have an association with an increase in student reading achievement in elementary schools, and teacher collaboration and culture of the school has been shown to increase math and reading achievement scores in students who were taught by teachers with low job satisfaction (Baneree, Steams, Moller, & Mickelson, 2017). In a different study, male high school teachers were more likely to report a higher perception of cooperation among coworkers than high school female teachers; however, female teachers had higher reports of belonging to a peer group where cooperative learning and collaboration took place (Pedersen & West, 2017). Respect and belonging have been found to influence job satisfaction and teacher retention, especially at schools that are considered high needs schools (Ansley et al., 2019). Feelings of occupational burnout can impact job satisfaction and participation in teacher leadership engagement, both resulting from perceptions of school climate (Grayson & Alvarez, 2008). Perceptions and job satisfaction may vary by level of school since meaning and perception is constructed based on experiences and the surroundings in which the experiences occur (Penuel, DiGiacomo, Van Horne, & Kirshner, 2016).

School Level Leadership Practices

Leadership practices refer to actions taken by school-level administrators and by teacher leaders that help support effective teaching and learning in order to allow for growth. Leadership practices can refer to five main aspects of the educational process, such as focusing on learning, supersizing teaching and learning, creating and maintaining learning communities, acquiring, distributing, and maintaining resources, and ensuring safe places for learning (Gedi & Bellibas, 2015). As differences in organization, structure, and population served exist between elementary and secondary schools, approaches to the leadership practices should not be the same in elementary and secondary schools (Gedi & Bellibas, 2015). School administrators and leadership teams use data to make decisions concerning school improvement, often planning professional development opportunities for teachers based on the data and desired outcome (DuFour et al., 2016). Elementary schools have been found to have more of a sense of commonality in focus and direction than secondary schools (Gedi & Bellibas, 2015). Elementary leaders tend to engage more with staff on a daily basis and tend to be more abreast of day-to-day work within the schools (Gedi & Bellibas, 2015). Distributed leadership approaches tend to be more present in secondary schools as opposed to elementary schools (Modeste & Kelley, 2018). Secondary administrators focus on resources, sharing and usage of resources, and working with stakeholders outside of the school instead of observing classroom practices and focusing on data-driven decisions (Gedi & Bellibas, 2015). However, a separate study showed that elementary school teachers reported a higher likelihood of peer teachers sharing their expertise than middle and high school teachers (Angelle & DeHart, 2011). In both elementary and secondary schools, however, leadership pathways influence the learning culture of the school and have the potential to influence student achievement (Sebastian, Huang, & Allensworth,

2017). The connectedness of leaders to the educational process and their visibility in the classroom may have an impact on the teachers' perceptions of having a shared vision and mission.

Leaders also have to overcome building structure concerns as either a hindrance or a help in terms of productive teacher collaboration. School administrators and even teacher leaders can ensure proper placement of master teachers or coaches so that these individuals are more likely to interact with and engage with novice teachers, teachers who are on improvement plans, or teachers that may just need a bit of assistance. This practice of strategically placing teachers may vary by school building and school type, but the outcome increases the probability that teachers will foster meaningful relationships that transfer into collaborative team planning sessions (Spillane & Shirrell, 2018). Practices vary surrounding resources, safety, and facilities due to differences in levels of shared leadership at all educational levels. Some leaders control all aspects of the educational process to include hiring, goal setting, and more, while others allow teachers to influence their decisions or even allow teachers more control (Urick, 2016).

Summary

PLCs are a means to help teachers prepare to educate a diverse group of students. These opportunities for focused collaboration are designed to allow teachers to work together to examine data and share research-based practices to match student needs with appropriate strategies. With a shared vision and culture of collaboration and commitment to education, school leaders, both administrators and teachers, can make a positive impact on learning. PLCs have the potential to hinder the educational experiences of students if there is a lack of formal training on how to engage in these communities and if time is not explicitly devoted to the tasks involved. However, if school leaders continue to create an environment conducive to and

supportive of collaboration, these forms of professional development can help teachers work together to meet the needs of diverse learners.

The educational level of a school can impact perceptions held by teachers. Elementary school teachers may perceive their working conditions differently than secondary teachers based on the nature of their work. Their access to human resources, such as subject matter experts or instructional coaches and mentors, may differ from middle or high schools. Elementary teachers may feel they have enough time to collaborate since many elementary administrators intentionally schedule common planning time and time for PLCs to occur during the school day. Secondary teachers may perceive their means of collaboration are limited since they tend to be responsible for teaching one main content area. Teachers in elementary school may feel it is difficult to plan with teachers who teach other grade levels which may limit their opportunities for vertical collaborations. Examining teacher perception by school level can impact how administrators plan time for collaboration and how to organize the meeting time and space to make sure teachers have ample and adequate access to resources, both human and technological.

Teacher satisfaction can also influence the perception of PLCs. Teacher trust, perceived hierarchies, and longevity have the potential to hinder the perception of and engagement in PLCs. These factors may be a result of the level of the school. Little research has been done to explore this as well.

A gap in the literature exists. Little to no research has been conducted to explore the impact of school level on teacher perceptions of components of PLCs. This study contributes to the current literature on the benefits and drawbacks of PLCs as they are perceived in various levels of education. There is potential to identify if the unique factors of the different educational levels influence the perceptions of PLCs.

CHAPTER THREE: METHODS

Overview

The current study aimed to determine if a difference exists among teacher perception of professional learning communities (PLCs) by school level. This chapter begins with a description of the research design and lists the variables in the study. The research questions and accompanying three hypotheses follow the design description. Presented next are the participants and the setting of the study. Then the instrumentation to be used is described, followed by a detailed description of the procedures. The chapter concludes with a description of the data analyses.

Design

A causal-comparative design was used for this study. This study sought to determine if, and to what degree, groups differ in their perceptions of components of PLCs (school leadership, professional development, and instructional practices and support), the dependent variables, which is a characteristic of a causal-comparative design (Gall, Gall, & Borg, 2007). It was non-experimental because the researcher did not manipulate the variables. This study examined group differences as opposed to determining if a relationship existed among the variables, an element of a causal-comparative design (Gall et al., 2007; Rovai, Baker, & Ponton, 2013). Additionally, the groups existed before the beginning of the study rather than being formed by the researcher, another characteristic of a causal-comparative design (Gall et al., 2007). This research was an ex-post facto study because "both the effect and presumed cause have already occurred and must be studied after the fact" (Rovai et al., 2013, p. 83). The study had three dependent variables of schools' perceptions of school leadership, instructional practice and support, and professional development (all components of PLCs) and one independent variable,

school level. School level, the independent variable, was determined as elementary, middle, or high based on the identified grade bands served using publicly available data from the North Carolina Department of Instruction. Individual tests were conducted to compare elementary with middle schools, elementary with high schools, and middle with high schools. Since the dependent variable was continuous, the independent variable was categorical with three groups, and the study aimed to compare two groups, a causal-comparative study design was the appropriate design choice (Gall et al., 2007).

Research Questions

The research questions for this study were as follows:

RQ1: Is there a difference between traditional public elementary and middle school educators' perception of *school leadership,* a component of professional learning communities?

RQ2: Is there a difference between traditional public elementary and high school educators' perception of *school leadership,* a component of a professional learning communities?

RQ3: Is there a difference between traditional public middle and high school educators' perception of *school leadership,* a component of professional learning communities?

RQ4: Is there a difference between traditional public elementary and middle school educators' perception of *professional development,* a component of a professional learning communities?

RQ5: Is there a difference between traditional public elementary and high school educators' perception of *professional development,* a component of a professional learning communities?

RQ6: Is there a difference between traditional public middle and high school educators' perception of *professional development,* a component of professional learning communities?

RQ7: Is there a difference between traditional public elementary and middle school educators' perception of *instructional practices and support,* a component of a professional learning communities?

RQ8: Is there a difference between traditional public elementary and high school educators' perception of *instructional practices and support*, a component of a professional learning communities?

RQ9: Is there a difference between traditional public middle and high school educators' perception of *instructional practices and support*, a component of professional learning communities?

Hypotheses

The null hypotheses for this study were as follows:

$H_0$1: There is no statistically significant difference between traditional public elementary and middle school educators' perception of *school leadership,* as measured by the North Carolina Teacher Working Conditions survey.

$H_0$2: There is no statistically significant difference between traditional public elementary and high school educators' perception of *school leadership,* as measured by the North Carolina Teacher Working Conditions survey.

$H_0$3: There is no statistically significant difference between traditional public elementary and high school educators' perception of *school leadership,* as measured by the North Carolina Teacher Working Conditions survey.

$H_0$4: There is no statistically significant difference between traditional public elementary and middle school educators' perception of *professional development,* as measured by the North Carolina Teacher Working Conditions survey.

H_05: There is no statistically significant difference between traditional public elementary and high school educators' perception of *professional development*, as measured by the North Carolina Teacher Working Conditions survey.

H_06: There is no statistically significant difference between traditional public elementary and high school educators' perception of *professional development*, as measured by the North Carolina Teacher Working Conditions survey.

H_07: There is no statistically significant difference between traditional public elementary and middle school educators' perception of *instructional practices and support*, as measured by the North Carolina Teacher Working Conditions survey.

H_08: There is no statistically significant difference between traditional public elementary and high school educators' perception of *instructional practices and support*, as measured by the North Carolina Teacher Working Conditions survey.

H_09: There is no statistically significant difference between traditional public elementary and high school educators' perception of *instructional practices and support*, as measured by the North Carolina Teacher Working Conditions survey.

Participants and Setting

The participants in this study were drawn from a convenience sample of 2,595 total schools in North Carolina. North Carolina has 100 schools operated by county units and 15 operated by city units. According to the Public Schools of North Carolina's Facts and Figures 2015–2016 report, North Carolina operates 1,845 elementary schools serving pre-kindergarten through eighth grade, 415 secondary schools serving Grades 9–12, 80 secondary schools serving Grades 9 through early college, 159 charter schools, and 93 combined schools. Only traditional public schools in North Carolina that serve students from kindergarten through Grade 12

participated in the study. Schools excluded from the participants included those that operate on military installations in North Carolina, have a federal LEA, charter schools, and those serving non-traditional populations. The public, non-charter schools have a wide range of ethnic distribution, serving 1.3% American Indian students, 3.0% Asian students, 16.5% Hispanic students, 25.7% Black students, 49.5% White students, 0.1% Pacific Islander students, and 3.8% of students who reported their ethnicity as other (Public Schools of North Carolina, 2016).

The largest administrative unit, Wake County Schools, reported $8,363 total per-pupil expenditure while the smallest unit, Tyrrell County, reported $14,787 per-pupil expenditure (Public Schools of North Carolina, 2016). In 2017, the median household income for North Carolina was reported to be $50,320 and 14% of the population was identified as living in poverty (U.S. Census Bureau, 2017). Wake County, the largest school administrative unit and home to the second most populated city in North Carolina, is home to 900,993 residents, with 846,020 living in an urban area and 54,973 living in a rural area (North Carolina Department of Commerce, 2019a). Wake County's 2016 estimated median family income was reported to be $88,280 while the estimated median worker earnings were reported to be $37,634 (North Carolina Department of Commerce, 2019a). The estimated total population that lives with an income below poverty was 93,924, indicating that residents of Wake County vary in their economic security.

Tyrrell County, on the other hand, has a much smaller population of 4,407, all of whom report living in a rural area (North Carolina Department of Commerce, 2019a). The reported estimated median family income in 2016 was $36,958 and the average median worker earned $22,447. The estimated population living with income below poverty was 870 in 2017 (North Carolina Department of Commerce, 2019a). Mecklenburg County, home to 919,628 people as

reported in 2010, reported 98.9% of the population reported residency in urban areas whereas only 1.1% reported rural residency (North Carolina Department of Commerce, 2019a). The estimated median family income was lower than Wake County, reported to be $73,250 while the estimated median worker's earnings was $33,700 (North Carolina Department of Commerce, 2019a). An estimated 120,634 people live below poverty in Mecklenburg County (North Carolina Department of Commerce, 2019a).

Bladen County, a county near the South Carolina border, is ranked as one of forty counties identified as most distressed in North Carolina (North Carolina Department of Commerce, 2019b). With a population of 35,190 residents, 20.7% of the residents have an income below poverty (North Carolina Department of Commerce, 2019a). The average median family income is $41,122 for Bladen County (North Carolina Department of Commerce, 2019a). This data represents the range of socioeconomic status of the counties in which the population samples are found.

Participants were traditional public schools in North Carolina that serve students from kindergarten through Grade 12. They all had an identified LEA, or local education authority, as either a city or a county and served a traditional population. Schools that operated on military installations in North Carolina had a federal LEA and did not participate in the survey. While charter schools are considered public and have to meet the same accountability measures, they differ from traditional schools in that they have control over what standards and programs they use to achieve these goals (North Carolina Department of Public Instruction, n.d.). Each charter school can select or create their own curriculum and programs which causes variation among the schools as well. For these reasons charter schools were ineligible to participate in the study.

From this, stratified random sampling occurred to ensure all subgroups were represented (Gall et al., 2007).

Schools were then classified further by school level as either elementary, middle, or high. After identifying the level, schools were assigned a number within their classification. Numbers were entered into a random number generator for each school level. Generated numbers were matched to the school that had that number, signifying the school as a selected participant. Selection continued to meet the sample size requirements. For this study at least 100 participant schools were needed to meet minimum requirements for a medium effect size with a statistical power of .50 at the .05 alpha level (Warner, 2013, p. 795).

In 2016, North Carolina reported 115 school systems with identified city or county LEAs and operated 2,592 elementary, secondary, early college, charter, and combined schools (Public Schools of North Carolina, 2016). North Carolina is one of eleven states that conducts a version of the Teaching, Empowering, Leading, and Learning (TELL) survey to assess working conditions based on perceptions of certified staff members and school administrators (New Teacher Center, 2014). North Carolina's version of the survey is the North Carolina Teacher Working Conditions Survey (New Teacher Center, 2019a). North Carolina has the highest rate of administration of the survey and the highest rate of responses compared to the other states that give a version of the TELL survey (New Teacher Center, 2014). In 2016, North Carolina employed 119,177 certified staff members and, of those, 101,846 completed the survey (New Teacher Center, 2016b).

Instrumentation

Two data sources were used in this study, the North Carolina Teacher Working Conditions Survey and the Active LEA (School District) Schools Report from the North Carolina Department of Public Instruction.

North Carolina Teacher Working Conditions Survey

The North Carolina Teacher Working Conditions Survey (NCTWCS) administered in 2016 was used in this study. The purpose of the survey was to gather perspectives of licensed educators including teachers, media coordinators, counselors, and others to provide data for schools and districts to use for decision-making purposes regarding teacher retention and student achievement (New Teacher Center, 2014). Originally part of the Governor's Teacher Working Conditions Initiative in North Carolina, the survey was created after the North Carolina Professional Teaching Standards Commission engaged in a literature review and analysis of data from the National Center for Education Statistics' School and Staffing Survey and identifying factors that contributed to "teacher satisfaction and employment trajectories" (New Teacher Center, 2014, p. 2). Eight main constructs measure working conditions that are empirically related to teacher retention and student achievement (New Teacher Center, 2014). The NCTWCS has since been administered every two years by the North Carolina Department of Public Instruction (New Teacher Center, 2019a). This tool has been used in previous studies to examine teacher perceptions of working conditions and how these conditions relate to teacher retention (New Teacher Center, 2016a, 2017). It has also been used to examine the role of principals in ensuring teachers have maximum time to meet responsibilities (Sterrett, Parker, & Mitzner, 2018).

The NCTWCS defines the eight core constructs. The construct of time is defined as planning, collaborating, instructing, and maximizing instructional time and measured over seven questions. Facilities and resources, measured over nine questions, examines "availability of instructional, technology, office, communication, and school resources to teachers" (New Teacher Center, 2014, p. 2). Community support and involvement studies communication and influence of the community and parents in the school over eight questions. Managing student conduct, measured through seven items, is defined as policies and practices that ensure safe environments and addresses student conduct. Teacher leadership measures teacher involvement in decision making at the school level with seven questions. School leadership, through 11 items, is defined as the ability of the school administration to create a supportive culture and climate and seeks to understand if there is a system in place to address concerns. Professional development, over 13 items, focuses on the availability and quality of professional learning opportunities. Instructional practice and support has 17 items and seeks to determine if teachers have access to data and support for making instructional decisions (New Teacher Center, 2014). This study used the constructs of time, teacher leadership, school leadership, instructional practice and support, and professional development, 55 questions in total.

The survey used a Likert-type scale asking respondents to choose *strongly disagree, disagree, agree, strongly agree,* or *don't know* in response to a question or statement. Detailed individual school summary reports are publicly available and are provided by item to show the percent of educators that chose *strongly disagree, disagree, agree,* and *strongly agree* in a range from 0% to 100%. A higher percentage indicates that a higher number of respondents chose that particular response. Responses of *don't know* are not reported on these results (New Teacher

Center, 2019a). Construct composites are averages across the set of items that all measure some aspect of that construct and are not available on the public reports (New Teacher Center, 2019b).

The survey is administered every two years. Certified staff and administrators have four weeks in March to respond to this anonymous and optional online survey. The results of the survey are made available to schools provided the school meets the 40% participation rate and has a minimum of at least five participants. Data are also reported publicly online. Demographic information is obtained from participants, including information concerning the position, number of years employed in the field of education, and the total years employed at the current school for each respondent.

The Rasch rating scale was used to determine if each item within the constructs was found to be valid as part of an external analysis conducted at the request of the New Teacher Center (New Teacher Center, 2019a). Internal analyses for validity included confirmatory factor analysis. Kaiser criterion values greater than one were found, meeting the minimal threshold for the variance. Construct correlations showed that six of eight constructs did not overlap at the .820 level. Cronbach's alpha coefficients for all constructs ranged from 0.86 to 0.96, above the acceptable level of 0.70 to determine the measure is reliable (New Teacher Center, 2014).

This tool is appropriate for this study because it measures perceptions of working conditions that are also components of PLCs. Since constructs and specific questions were found valid and reliable, this study will focus on the constructs of school leadership, instructional practice and support, and professional development, all aspects that pertain to PLCs. These values will be reported per construct by each participant. The respondents are from all geographical regions of North Carolina and are from all school levels, ensuring that there will be participants from all localities and types.

Active LEA (School District) Schools Report

The second instrument that was used in this study is the Active LEA (School District) Schools Report. This publicly available report is from the North Carolina Department of Public Instruction and provides a list of LEA names, school names, and configuration of schools. A public document, this list is maintained by authorized users for each LEA or school and comes from the Educational Directory and Demographical Information Exchange website. This tool is appropriate to identify the type of school as school configuration of elementary, middle, or high is listed and to ensure the participants are traditional schools (North Carolina Department of Public Instruction, 2019). This study used an archived list of active LEAs and schools during the 2015–2016 school year.

Procedures

This study began with the researcher asking for and receiving approval from the dissertation committee. The researcher was granted permission to conduct the study from the Instructional Review Board (IRB; see Appendix A for IRB approval). Once IRB approval was granted, the participant selection began by accessing the Active LEA School Report.

To begin sorting by level, a spreadsheet was generated and downloaded that listed names and locations of schools using a publicly accessible report from the Active LEA Schools Report website for school year 2015–2016. Schools that did not meet the criteria for participants were removed from the sheet which included schools that serve special populations such as the North Carolina Department of Juvenile Education Services, schools that have a federal LEA such as those on military installations, or charter schools that do not have the same regulations as traditional public schools. Participants were only drawn from schools that serve a traditional population. Once the schools that did not meet the criteria were omitted, information that was

not pertinent to the study was omitted such as location of the school. Schools were then classified further by elementary, middle, or high school type, using the information provided by the report. Then participants were selected. Possible participants were assigned a number, and these numbers were inserted into a random number generator. Numbers were loaded for one school level at a time. For example, numbers that represent elementary schools were loaded first, then randomly generated for participant selection. The process was repeated until the minimum sample size for each subgroup was met.

After the participants were determined, the public results of the NCTWCS were accessed. See Appendix B for a link to the reported survey questions and results. The 2016 results were selected because the survey was administered during the 2015–2016 school year and the results correspond to the year that the county classification report was published. Once accessed, the responses for the participating schools were located and recorded.

The responses of *agree* and *strongly agree* for each of the questions related to PLCs within the constructs of school leadership, instructional practice and support, and professional development were recorded separately for each of the selected participants, organized based on the factors of the independent variables. See Appendix C for rationale as to why questions were chosen or omitted from these three constructs. Composite construct scores were then calculated for each construct above by averaging the recorded percentages for the selected questions. Scores were accessed by retrieving publicly available archived scores for the 2016 results from the selected participants. An average number of responses to the survey questions was calculated in order to perform the data analysis as the number of teacher responses per participant school varied. This number was recorded for every selected participant school.

The data are stored locally on the researcher's password-protected, personally owned computer. In order to protect the identity of the schools, the names of the schools will not be used. The schools will be referred to as a collective group based on school level and will be identified as either elementary, middle, or high in the subsequent chapters.

Data Analysis

A two-sample *t*-test between percents was conducted to test the nine null hypotheses to determine if there was a statistically significant difference in perceptions of components of PLCs based on school level. This procedure was appropriate because the study tested for statistically significant differences in perceptions, reported as percentages, of components of PLCs of each group of schools based on level: elementary, middle and high (Warner, 2013). The dependent variables of perception of each of the components is continuous while the independent variables have two groups tested at a time, elementary versus middle, elementary versus high, and middle versus high, indicating this is appropriate (Gall et al., 2007).

Since percentages were used, there was only one value for each category for each of the independent variables. Therefore the usual assumption testing for *t*-tests was not applicable. The percentages for each level of school were averaged for each dependent variable. For example, elementary participant schools' reported percentage for school leadership was averaged to have one value for that category. This was repeated for middle and high schools, generating one value for each dependent variable per level. Table 1 below shows the combinations of independent variables and dependent variables for the nine *t*-tests that were performed with corresponding research questions and null hypotheses.

The percent for each category was entered into the Stat Pac Statistics Calculator followed by averaged sample size for the first category. Then the percent for the category that was

compared was entered along with the sample size for that category. This process was repeated until all nine comparisons were completed, one test per null hypothesis. The *t*-value, degrees of freedom, and two-tailed probability, or *p*-value, was calculated for each combination of independent variables and dependent variables. This statistical procedure determined if there was a significant difference between the three levels of schools with respect to their perceptions of school leadership, instructional practice and support, and professional development, all components of PLCs.

To limit Type I error, a Bonferroni correction was used since there were nine tests of significance conducted (Warner, 2013). The calculation for a Bonferroni correction typically uses an alpha level of .05 and then divides by the number of hypothesis tests run. Warner (2013) allows the Bonferroni correction to be calculated using $p = .10$ when many tests are run. For that reason, the alpha level for this study is calculated thus: .10/9 = .01. Therefore, alpha level was set at $p < .01$ for all nine two-sample *t*-tests for percents being conducted.

Table 1

Variables Corresponding to Individual RQs and Null Hypotheses

Independent Variable	Dependent Variable	Research Question	Null Hypothesis
Elementary vs middle	School leadership	**RQ1:** Is there a difference between traditional public elementary and middle school educators' perception of *school leadership,* a component of professional learning communities?	**$H_0$1:** There is no statistically significant difference between traditional public elementary and middle school educators' perception of *school leadership,* as measured by the North Carolina Teacher Working Conditions survey.
Elementary vs high	School leadership	**RQ2:** Is there a difference between traditional public elementary and high school educators' perception of *school leadership,* a component of professional learning communities?	**$H_0$2:** There is no statistically significant difference between traditional public elementary and high school educators' perception of *school leadership,* as measured by the North Carolina Teacher Working Conditions survey.
Middle vs high	School leadership	**RQ3:** Is there a difference between traditional public middle and high school educators' perception of *school leadership,* a component of professional learning communities?	**$H_0$3:** There is no statistically significant difference between traditional public middle and high school educators' perception of *school leadership,* as measured by the North Carolina Teacher Working Conditions survey.
Elementary vs middle	Professional development	**RQ4:** Is there a difference between traditional public elementary and middle school educators' perception of *professional development,* a component of a professional learning communities?	**$H_0$4:** There is no statistically significant difference between traditional public elementary and middle school educators' perception of *professional development,* as measured by the North Carolina Teacher Working Conditions survey.
Elementary vs high	Professional development	**RQ5:** Is there a difference between traditional public elementary and high school educators' perception of *professional development,* a component of a professional learning communities?	**$H_0$5:** There is no statistically significant difference between traditional public elementary and high school educators' perception of *professional development,* as measured by the North Carolina Teacher Working Conditions survey.

Independent Variable	Dependent Variable	Research Question	Null Hypothesis
Middle vs high	Professional development	**RQ6:** Is there a difference between traditional public middle and high school educators' perception of *professional development,* a component of a professional learning communities?	**$H_0$6:** There is no statistically significant difference between traditional public middle and high school educators' perception of *professional development,* as measured by the North Carolina Teacher Working Conditions survey.
Elementary vs middle	Instructional practices and support	**RQ7:** Is there a difference between traditional public elementary and middle school educators' perception of *instructional practices and support,* a component of a professional learning communities?	**$H_0$7:** There is no statistically significant difference between traditional public elementary and middle school educators' perception of *instructional practice and support,* as measured by the North Carolina Teacher Working Conditions survey.
Elementary vs high	Instructional practices and support	**RQ8:** Is there a difference between traditional public elementary and high school educators' perception of *instructional practices and support,* a component of a professional learning communities?	**$H_0$8:** There is no statistically significant difference between traditional public elementary and high school educators' perception of *instructional practice and support,* as measured by the North Carolina Teacher Working Conditions survey.
Middle vs high	Instructional practices and support	**RQ9:** Is there a difference between traditional public middle and high school educators' perception of *instructional practices and support,* a component of a professional learning communities?	**$H_0$9:** There is no statistically significant difference between traditional public middle and high school educators' perception of *instructional practice and support,* as measured by the North Carolina Teacher Working Conditions survey.

CHAPTER FOUR: FINDINGS

Overview

The purpose of this study was to compare school level to schools' reported perceptions of school leadership, instructional practice and support, and professional development, all components of PLCs, among traditional public schools in North Carolina. The research questions and null hypotheses are provided followed by the data table of all values used in the analyses. The data section is followed by the results section, providing the results of all nine null hypotheses.

Research Questions

Nine research questions below were studied.

RQ1: Is there a difference between traditional public elementary and middle school educators' perception of *school leadership,* a component of professional learning communities?

RQ2: Is there a difference between traditional public elementary and high school educators' perception of *school leadership,* a component of a professional learning communities?

RQ3: Is there a difference between traditional public middle and high school educators' perception of *school leadership,* a component of professional learning communities?

RQ4: Is there a difference between traditional public elementary and middle school educators' perception of *professional development,* a component of a professional learning communities?

RQ5: Is there a difference between traditional public elementary and high school educators' perception of *professional development,* a component of a professional learning communities?

RQ6: Is there a difference between traditional public middle and high school educators' perception of *professional development*, a component of professional learning communities?

RQ7: Is there a difference between traditional public elementary and middle school educators' perception of *instructional practices and support*, a component of a professional learning communities?

RQ8: Is there a difference between traditional public elementary and high school educators' perception of *instructional practices and support*, a component of a professional learning communities?

RQ9: Is there a difference between traditional public middle and high school educators' perception of *instructional practices and support*, a component of professional learning communities?

Null Hypotheses

The nine null hypotheses for the study are listed below.

The null hypotheses for this study are:

$H_0$1: There is no statistically significant difference between traditional public elementary and middle school educators' perception of *school leadership*, as measured by the North Carolina Teacher Working Conditions survey.

$H_0$2: There is no statistically significant difference between traditional public elementary and high school educators' perception of *school leadership*, as measured by the North Carolina Teacher Working Conditions survey.

$H_0$3: There is no statistically significant difference between traditional public elementary and high school educators' perception of *school leadership*, as measured by the North Carolina Teacher Working Conditions survey.

H_04: There is no statistically significant difference between traditional public elementary and middle school educators' perception of *professional development*, as measured by the North Carolina Teacher Working Conditions survey.

H_05: There is no statistically significant difference between traditional public elementary and high school educators' perception of *professional development*, as measured by the North Carolina Teacher Working Conditions survey.

H_06: There is no statistically significant difference between traditional public elementary and high school educators' perception of *professional development*, as measured by the North Carolina Teacher Working Conditions survey.

H_07: There is no statistically significant difference between traditional public elementary and middle school educators' perception of *instructional practices and support*, as measured by the North Carolina Teacher Working Conditions survey.

H_08: There is no statistically significant difference between traditional public elementary and high school educators' perception of *instructional practices and support*, as measured by the North Carolina Teacher Working Conditions survey.

H_09: There is no statistically significant difference between traditional public elementary and high school educators' perception of *instructional practices and support*, as measured by the North Carolina Teacher Working Conditions survey.

Data

The data used to run the nine two-sample *t*-test between percents are provided in Table 2.

Table 2

Data Table

	School Level	Percent	Sample Size
RQ1	Elementary	85	31
	Middle	86	42
RQ2	Elementary	85	31
	High	83	65
RQ3	Middle	86	42
	High	83	65
RQ4	Elementary	81	31
	Middle	78	42
RQ5	Elementary	81	31
	High	74	65
RQ6	Middle	78	42
	High	74	65
RQ7	Elementary	82	31
	Middle	81	42
RQ8	Elementary	82	31
	High	78	65
RQ9	Middle	81	42
	High	78	65

The two-sample *t*-test between percents does not have assumption test requirements, as it is conducted using percentages. The data in Table 1 was entered into Statpac.com statistics calculator. The results are found in Table 3.

Table 3

Results of Each Two-Sample t-Test Between Percents

Null Hypothesis	School Level	*t*-value	*df*	Two-tailed Probability
1	Elementary Middle	0.120	71	.905
2	Elementary High	0.248	94	.805
3	Middle High	0.415	105	.670
4	Elementary Middle	0.313	71	.756
5	Elementary High	0.754	94	.453
6	Middle High	0.470	105	.639
7	Elementary Middle	0.109	71	.914
8	Elementary High	0.452	94	.652
9	Middle High	0.373	105	.710

Results

Nine analyses of the two-sample *t*-test between percents were conducted to find if there was a difference in reported perceptions of components of PLCs based on school level. To limit Type I error, a Bonferroni correction was used since there were nine tests of significance being conducted (Warner, 2013). The calculation for a Bonferroni correction typically uses an alpha level of .05 and then divides by the number of hypothesis tests run. Warner (2013) allows the Bonferroni correction to be calculated using $p = .10$ when many tests are run. For that reason, the alpha level for this study is calculated thus: .10/9 = .01. Therefore, alpha level was set at $p < .01$ for all nine two-sample *t*-tests for percents being conducted.

Null Hypothesis One

$H_0$1 states there is no statistically significant difference between traditional public elementary and middle school educators' perception of the PLC component school leadership, as measured by the NCTWCS. The independent variable was school level and the dependent variable was school leadership. The researcher failed to reject the null hypothesis at the 95% confidence level where $t(71) = 0.120$, $p = .905$. Eta square (η^2) equaled 0.0002. The effect size was small. Eta square was calculated using the following formula: $\eta^2 = t^2/(t^2 + df)$. There was not a statistical difference between the percents of elementary school (85%) and middle school (86%) teachers' perceptions of school leadership. See Table 3 for results of the two-sample *t*-test between percents.

Null Hypothesis Two

$H_0$2 states there is no statistically significant difference between traditional public elementary and high school educators' perception of the PLC component school leadership, as measured by the NCTWCS. The independent variable was school level and the dependent variable was school leadership. The researcher failed to reject the null hypothesis at the 95% confidence level where $t(94) = 0.248$, $p = .805$. Eta square (η^2) equaled 0.0007. The effect size was small. Eta square was calculated using the following formula: $\eta^2 = t^2/(t^2 + df)$. There was not a statistical difference between the percents of elementary school (85%) and high school (83%) teachers' perceptions of school leadership. See Table 3 for results of the two-sample *t*-test between percents.

Null Hypothesis Three

$H_0$3 states there is no statistically significant difference between traditional public middle and high school educators' perception of the PLC component school leadership, as measured by

the NCTWCS. The independent variable was school level and the dependent variable was school leadership. The researcher failed to reject the null hypothesis at the 95% confidence level where $t(105) = 0.415$, $p = .670$. Eta square (η^2) equaled 0.002. The effect size was small. Eta square was calculated using the following formula: $\eta^2 = t^2/(t^2 + df)$. There was not a statistical difference between the percents of middle school (86%) and high school (83%) teachers' perceptions of school leadership. See Table 3 for results of the two-sample *t*-test between percents.

Null Hypothesis Four

$H_0$4 states there is no statistically significant difference between traditional public elementary and middle school educators' perception of the PLC component professional development, as measured by the NCTWCS. The independent variable was school level and the dependent variable was professional development. The researcher failed to reject the null hypothesis at the 95% confidence level where $t(71) = 0.313$, $p = .756$. Eta square (η^2) equaled 0.001. The effect size was small. Eta square was calculated using the following formula: $\eta^2 = t^2/(t^2 + df)$. There was not a statistical difference between the percents of elementary school (81%) and middle school (78%) teachers' perceptions of professional development. See Table 3 for results of the two-sample *t*-test between percents.

Null Hypothesis Five

$H_0$5 states there is no statistically significant difference between traditional public elementary and high school educators' perception of the PLC component professional development, as measured by the NCTWCS. The independent variable was school level and the dependent variable was professional development. The researcher failed to reject the null hypothesis at the 95% confidence level where $t(94) = 0.754$, $p = .453$. Eta square (η^2) equaled

0.006. The effect size was small. Eta square was calculated using the following formula: $\eta^2 = t^2/(t^2 + df)$. There was not a statistical difference between the percents of elementary school (81%) and high school (74%) teachers' perceptions of professional development. See Table 3 for results of the two-sample *t*-test between percents.

Null Hypothesis Six

$H_0$6 states there is no statistically significant difference between traditional public middle and high school educators' perception of the PLC component professional development, as measured by the NCTWCS. The independent variable was school level and the dependent variable was professional development. The researcher failed to reject the null hypothesis at the 95% confidence level where $t(105) = 0.470$, $p = .6392$. Eta square (η^2) equaled 0.002. The effect size was small. Eta square was calculated using the following formula: $\eta^2 = t^2/(t^2 + df)$. There was not a statistical difference between the percents of middle school (78%) and high school (74%) teachers' perceptions of professional development. See Table 3 for results of the two-sample *t*-test between percents.

Null Hypothesis Seven

$H_0$7 states there is no statistically significant difference between traditional public elementary and middle school educators' perception of the PLC component instructional practices and support, as measured by the NCTWCS. The independent variable was school level and the dependent variable was the component of instructional practices and support. The researcher failed to reject the null hypothesis at the 95% confidence level where $t(71) = 0.109$, $p = .914$. Eta square (η^2) equaled = 0.0002. The effect size was small. Eta square was calculated using the following formula: $\eta^2 = t^2/(t^2 + df)$. There was not a statistical difference between the percents of elementary school (82%) and middle school (81%) teachers' perceptions

of professional development. See Table 3 for results of the two-sample *t*-test between percents.

Null Hypothesis Eight

$H_0$8 states there is no statistically significant difference between traditional public elementary and high school educators' perception of the PLC component instructional practices and support, as measured by the NCTWCS. The independent variable was school level and the dependent variable was the component of instructional practices and support. The researcher failed to reject the null hypothesis at the 95% confidence level where $t(94) = 0.452$, $p = .652$. Eta square (η^2) equaled 0.002. The effect size was small. Eta square was calculated using the following formula: $\eta^2 = t^2/(t^2 + df)$. There was not a statistical difference between the percents of elementary school (82%) and high school (78%) teachers' perceptions of professional development. See Table 3 for results of the two-sample *t*-test between percents.

Null Hypothesis Nine

$H_0$9 states there is no statistically significant difference between traditional public middle and high school educators' perception of the PLC component instructional practices and support, as measured by the NCTWCS. The independent variable was school level and the dependent variable was the component of instructional practices and support. The researcher failed to reject the null hypothesis at the 95% confidence level where $t(105) = 0.373$, $p = .710$. Eta square (η^2) equaled 0.001. The effect size was small. Eta square was calculated using the following formula: $\eta^2 = t^2/(t^2 + df)$. There was not a statistical difference between the percents of middle school (81%) and high school (78%) teachers' perceptions of professional development. See Table 3 for results of the two-sample *t*-test between percents.

CHAPTER FIVE: CONCLUSIONS

Overview

This study examined whether a difference existed in perceptions of components of professional learning communities (PLCs) at the elementary, middle, and high school level. This chapter contains a review of the findings as they relate to relevant literature in the discussion section. Discussions are presented with like variables, so the three research questions that pertain to each dependent variable are discussed together. Discussions include a comparison to studies referenced in this dissertation. Limitations of the study and recommendations for future research are then presented.

Discussion

The purpose of the study was to compare traditional North Carolina public schools' reported perceptions of school leadership, professional development, and instructional practices and support, all components of PLCs, by school level: elementary, middle, and high. The research sought to answer nine research questions comparing each component by each level of school. One hundred participant schools were selected for each level through stratified random sampling. Reported perceptions of school leadership, professional development, and instructional practices and support for each participant were recorded and then averaged for each category to get one percent per level and component. A two-sample *t*-test between percents was conducted to determine if statistically significant differences in perceptions existed between each level.

Discussion of Research Questions One, Two, and Three

RQ1: Is there a difference between traditional public elementary and middle school educators' perception of *school leadership*, a component of professional learning communities?

The results showed there was no statistically significant difference in perceptions of school leadership between elementary and middle schools. This research failed to reject the null hypothesis.

RQ2: Is there a difference between traditional public elementary and high school educators' perception of *school leadership*, a component of a professional learning communities?

The results showed there was no statistically significant difference in perceptions of school leadership between elementary and high schools. This research failed to reject the null hypothesis.

RQ3: Is there a difference between traditional public middle and high school educators' perception of *school leadership*, a component of professional learning communities? The results showed there was no statistically significant difference in perceptions of school leadership between middle and high schools. This research failed to reject the null hypothesis.

The results of RQ1, RQ2, and RQ3 contradict some of the literature reviewed in this study that suggest school leadership varies between levels of school. The selected questions from the School Leadership construct within the North Carolina Teacher Working Conditions Survey (NCTWCS) examine whether or not teachers and staff perceive trust, shared visions, and support exists among school leadership and the staff, and if teachers perceive that school leadership emphasizes use of data to drive instruction but also trusts and allows them to make instructional decisions for students (New Teacher Center, 2016a). One study found that elementary school leaders tend to have more of an aligned focus and direction and tend to be more engaged with staff and the work of the teachers (Gedi & Bellibas, 2015). Distributed leadership approaches tend to be more present in secondary schools as opposed to elementary schools (Modeste & Kelley, 2018). The results of RQ1, RQ2, and RQ3 indicate that the leaders

of participant schools in all three school levels have aligned visions and directions with their respective staff members. Another study suggested that because there are differences in organization, structure, and populations served between elementary and secondary schools, approaches to the leadership practices should not be the same in each of these levels (Gedi & Bellibas, 2015). The results of this study indicate that the practices may be the same between the levels of the schools. These practices could refer to the findings that several studies have reported concerning actions and expectations of school leadership and how these have potential to impact perceptions held by teachers regarding school climate, shared direction, and the importance of engaging in professional growth (DuFour et al., 2016; Griffith, 1999; Rudasill et al., 2018). Further, another study showed that perceptions may vary by level of school since perception is constructed based on experiences and the surroundings (Penuel et al., 2016). However, the results of RQ1, RQ2, and RQ3 indicate that while the level of school is different, there is no statistically significant difference in perceptions surrounding school leadership.

Discussion of Research Questions Four, Five, and Six

RQ4: Is there a difference between traditional public elementary and middle school educators' perception of *professional development*, a component of a professional learning communities?

The results showed there was no statistically significant difference in perceptions of professional development between elementary and middle schools. This research failed to reject the null hypothesis.

RQ5: Is there a difference between traditional public elementary and high school educators' perception of *professional development*, a component of a professional learning communities?

The results showed there was no statistically significant difference in perceptions of professional development between elementary and high schools. This research failed to reject the null hypothesis.

RQ6: Is there a difference between traditional public middle and high school educators' perception of *professional development*, a component of professional learning communities?

The results showed there was no statistically significant difference in perceptions of professional development between middle and high schools. This research failed to reject the null hypothesis.

The results of RQ4, RQ5, and RQ6 contradict the literature examined in this dissertation. The NCTWCS questions examine perceptions of professional development by asking if teachers perceive enough time is devoted to professional development, if enough resources exist for professional development to be effective, if professional development is data driven, and if the sessions allow for teachers to improve upon or learn new instructional strategies (New Teacher Center, 2016a). There has been some research that suggests perceptions may exist in the support available among peers in PLCs and during PD, especially in secondary settings where these teachers may feel unsupported when asked to teach outside of their normal content area (Campbell & Lee, 2017; Miranda & Jaffe-Walter, 2018). Elementary teachers, on the other hand, have been found to perceive they have more peer support as they work together in like groups to implement and sustain learning gained from professional development (Puhala, 2018). A different study found that teachers from all grade levels may perceive barriers exist concerning their professional development that inhibits them from engaging with the material and applying what they have learned (Cantrell et al., 2009; McDuffie et al., 2018). This study did not show

differences in perception exist among any combination of the three varying levels despite the differences that exist in job design.

This current study found that teachers perceive their schools are engaging in professional development that is meaningful, rooted in data, and allows them to enhance their professional teaching strategies while providing proper support, regardless of the levels compared. Research shows that school administrators and leadership teams often plan professional development opportunities for teachers based on data (DuFour et al., 2016). Professional development should involve a variety of stakeholders at the local and district levels to ensure resources and support are in place as teachers work to implement the learning gained from PD sessions (Patton et al., 2015, p. 27). Time spent in PLCs is one avenue that exists to allow for further development of instructional practices and techniques (Patton et al., 2015).

Discussion of Research Questions Seven, Eight, and Nine

RQ7: Is there a difference between traditional public elementary and middle school educators' perception of *instructional practices and support*, a component of a professional learning communities?

The results showed there was no statistically significant difference in perceptions of instructional practices and support between elementary and middle schools. This research failed to reject the null hypothesis.

RQ8: Is there a difference between traditional public elementary and high school educators' perception of *instructional practices and support*, a component of a professional learning communities?

The results showed there was no statistically significant difference in perceptions of instructional practices and support between elementary and high schools. This research failed to reject the null hypothesis.

RQ9: Is there a difference between traditional public middle and high school educators' perception of *instructional practices and support*, a component of professional learning communities?

The results showed there was no statistically significant difference in perceptions of instructional practices and support between middle and high schools. This research failed to reject the null hypothesis.

The results of RQ7, RQ8, and RQ9 support a majority of the literature reviewed in this study. The NCTWCS questions included in this study examine perceptions of data use, teacher autonomy, and support for implementing effective strategies including human and material resources. Research has shown that educators who engage in social interactions while planning for instruction are more likely to try new things since they have direct access to human resources as support, both formally and informally, during these interactions (Woodland & Mazur, 2019). Research has also shown that leadership support can be seen in schools in a variety of ways, such as allowing time for and participating in collaborative teams, ensuring key stakeholders are present for collaboration, providing timely and data-driven professional development, and more (DuFour et al., 2016; McCauley et al., 2006). The results of the study indicate that schools at all levels agree that these types of practices are taking place and that there is no statistically significant difference between the levels of schools in the perceptions teachers hold regarding instructional practice and support.

The results of RQ7, RQ8, and RQ9 do not support the conclusions two of the studies discussed. One study found that secondary administrators focus mainly on how to share and distribute resources among the staff and working with stakeholders outside of the building while elementary administrators work with supporting teachers on a more personal level through classroom observations and having discussions surrounding student achievement data (Gedi & Bellibas, 2015). Another study found that elementary school teachers reported a higher likelihood of peer teachers sharing their expertise than middle and high school teachers (Angelle & DeHart, 2011). The current study did not find significant differences in instructional practices and support between any of the school levels.

Implications

Differences do exist between the levels of schools, such as the number of subjects or content areas teachers focus on, the developmental level of the students taught, and the scheduling of classes (Capella et al., 2013; Reeves, 2019; Wall & Miller, 2015). However, this study indicates that these variances do not mean differences will exist in perceptions of school leadership, professional development, and instructional practices and support as they relate to PLCs between school levels. Administrators and those who are looking to implement or improve their current PLCs can focus on the quality factors that need to be in place no matter the level of students the schools serve.

This study adds to the existing literature that promotes the necessary conditions that must be present in order for the work of PLCs to be meaningful and for teachers to perceive their work in these engagement opportunities as valuable and productive. Previous studies have shown the importance of having leadership that embraces developing a clear direction and having a supportive climate in order to increase teacher autonomy, productivity, and self-efficacy (Ansley

et al., 2019; Baneree et al., 2017; Bridwell-Mitchell & Cooc, 2016; DuFour et al., 2016). These findings support the social constructivism theoretical framework in that the perceptions teachers hold are influenced by the interactions they have with others and the situations in which these interactions occur (Schrader, 2015). Teachers use each other's knowledge and support to learn from one another and to apply new knowledge (Prytula, 2012). Respect and belonging have been shown to increase collective efficacy, satisfaction, and teacher retention (Ansley et al., 2019). As teachers work together toward a common goal in a safe, supportive climate and have proper resources and supports in place to learn from one another and from professional development sessions, they are able to engage in collaborative efforts that result in improved student learning (DuFour et al., 2016; Reeves et al., 2017). Schools that have the conditions in place to improve student achievement through collaborative sessions can focus on the content and the processes involved as well. If a school needs to focus on behavior, for example, it can still implement professional development and provide resources to support implementation of a new plan, but the type of resources offered may differ. Targeted strategies in elementary schools will look different from strategies for middle and high school students since the developmental needs of the students are different (Hart et al., 2016). The perceptions teachers hold about the school leadership, instructional practices and support, and professional development will form as they engage in various situations in their schools (Keegan, 2019).

Limitations

There are limitations to this study. The ex-post facto, causal comparative design of the study results in several limitations. The variables could not be manipulated in this study since the study is an ex-post facto design, so causality cannot be established (Gall et al., 2007). While the selection of schools was random, the participants who answered the survey were not selected

at random, threatening internal validity. The researcher also has no information on the individuals that did not choose to participate in the NCTWCS so there is no way to know if these perceptions would change the results of the study. Additionally, there are variables that might have already existed in the pre-defined groups that impacted the perceptions reported within the survey.

External validity refers to the ability of the results to generalize to settings and persons beyond those included in the study (Warner, 2013). This research is limited in sample selection as research was specific to traditional public schools in North Carolina. The results may have differed if private schools or schools that served a non-traditional population were included as their perceptions may have differed from those in traditional school settings. Private schools receive funds in ways that public schools do not and may have access to different resources as a result. The non-traditional setting may have different expectations for time spent in collaboration, and the goals for students in these settings may be focused on more than academics. The situations these teachers engage in may impact their perceptions of these topics differently based on having different challenges and successes. The study also does not account for the differences schools face based on location and funding. These factors limit generalizability of the results to schools outside of North Carolina, impacting the external validity to this study. To combat this, the researcher could include other states that give a similar survey to teachers.

There are threats to internal validity to this study as well. Internal validity is "the degree to which the results of the study can be used to make causal inferences" (Warner, 2013, p. 17). Since this research is an ex-post facto design using data from a survey previously given, it is possible that the outcome of the original survey was influenced by other variables at the time of

the original survey. There is no way to know the circumstances in which the original survey was given. Additionally, this study did not examine differences and similarities of participants within identified school levels. Selection bias could have occurred during participant selection. For example, all participants selected could be from low-income districts. These variables may account for differences in perceptions among the groups that is identified within the NCTWCS. The survey used is a self-report survey and since this was the only measure used in the current study, group differences could have occurred due to "social desirability bias, response to perceived experimenter expectancy or demand, or faking" (Warner, 2013, p. 787). It is possible that the participants who answered the original survey responded in a way that would influence the outcome of the survey due to desired outcomes of the school or district in which they work.

Recommendations for Future Research

Recommendations for further research should include the following:

1. Conduct a similar study with a broader range of participants to include non-traditional schools and schools from other states that use the TELL survey. This will allow for a wider range of participants and could help determine if differences exist between traditional and non-traditional schools. This will also help the research findings to be generalizable to other locations.
2. Examine locality as a variable that may impact perceptions of the same dependent variables. Schools may have differences in funding or resources that may impact teacher perceptions of their PLCs or working conditions.
3. Include survey results from previous years and years following the survey used in this study in order to look at trends over time. Trend data can help determine if there was a change in perception and schools that are looking to improve upon existing PLCs and

practices or to begin implementation of PLCs can study the findings and apply them. By analyzing constructs schools will know what is considered valuable and important to teachers and staff.

4. Examine perceptions using demographics of teachers as variables since the current study averaged responses together without taking demographics such as age and gender into consideration. Perceptions of beginning teachers may also differ from those with more experience in the field. Understanding differences that exist between demographics can help schools pinpoint areas of success and growth and allow for differentiation to address needs of the staff. Schools that wish to implement or improve their PLCs can use the data to address the concerns of various populations within individual schools.

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APPENDICES

Appendix A: IRB Approval Letter

IRB-FY19-20-292 - Initial:

Initial - Non-Human Subjects

Research

Mon 4/20/2020 2:20 PM

LIBERTY UNIVERSITY.
INSTITUTIONAL REVIEW BOARD

April 20, 2020

Jennifer Hollingsworth

Carol Gillespie

Re: IRB Application - IRB-FY19-20-292 THE INFLUENCE OF SCHOOL LEVEL ON PERCEPTIONS OF COMPONENTS OF PROFESSIONAL LEARNING COMMUNITIES IN TRADITIONAL PUBLIC SCHOOLS

Dear Jennifer Hollingsworth, Carol Gillespie:

The Liberty University Institutional Review Board (IRB) has reviewed your application in accordance with the Office for Human Research Protections (OHRP) and Food and Drug Administration (FDA) regulations and finds your study does not classify as human subjects research. This means you may begin your research with the data safeguarding methods mentioned in your IRB application.

Decision: No Human Subjects Research

Explanation: Your study does not classify as human subjects research because:

(1) it will not involve the collection of identifiable, private information.

Please note that this decision only applies to your current research application, and any modifications to your protocol must be reported to the Liberty University IRB for verification of continued non-human subjects research status. You may report these changes by completing a modification submission through your Cayuse IRB account.

If you have any questions about this determination or need assistance in determining whether possible modifications to your protocol would change your application's status, please email us at irb@liberty.edu.

Sincerely,

G. Michele Baker, MA, CIP
Administrative Chair of Institutional Research
Research Ethics Office

Appendix B: 2016 North Carolina Teacher Working Conditions Survey

Results from the NCTWCS were accessed from the following website:

https://ncteachingconditions.org/results/166

Appendix C: Construct and Item Rationales

All constructs and questions included in the NCTWCS are accessible from the following website: https://www.ncteachingconditions.org/uploads/File/NC16_survey_main.pdf.

The construct of school leadership is included for analysis. School leadership is an essential element of PLCs in that leaders play an essential role in developing a shared mission and vision among the school in addition to creating a time and place for PLCs to happen (DuFour et al., 2016).

The construct of school leadership includes the items below. Each item is listed and a rationale for its inclusion or exclusion in data analysis is provided.

Item 7a. [removed for copyright]

Rationale. The purpose of this item is to establish whether the faculty and staff perceive their school operates under the same vision. Having a shared vision is a foundational element of PLCs and is essential for teachers to engage in collaboration that impacts student achievement (Voelkel & Chrispeels, 2017a). For this reason, this question is included in the study.

Item 7b. [removed for copyright]

Rationale. The purpose of this item is to establish if there is a sense of trust and respect among co-workers, essential elements to engage in focused collaboration that examines student data (Cravens et al., 2017; Voelkel & Chrispeels, 2017a). For this reason, this question is included in the study.

Item 7c. [removed for copyright]

Rationale. While it is important that teachers raise issues concerning student data when participating in focused collaboration, it is unclear whether this question deals directly with student data and student achievement. For this reason, item 7c is excluded from the study.

Item 7d. [removed for copyright]

Rationale. Having a supportive climate is part of the foundation for ensuring that PLCs are able to take place. Leadership can show support in a variety of ways, such as actively participating in collaborative teams, providing a safe environment, scheduling times to engage in collaboration, and more (DuFour et al., 2016; McCauley et al., 2006). For these reasons, this question is included in the study.

Item 7e. [removed for copyright]

Rationale. Focused collaboration that takes place within PLCs allows for teachers to share best practices and engage in professional development in order to improve instructional delivery (Carpenter, 2017). For this reason, this item is included in the study.

Item 7f. [removed for copyright]

Rationale. Professional learning communities must be results-oriented and this includes gathering and examining data to determine how to respond when students learn material and how to respond when they do not learn material (Abrams et al., 2016; DuFour et al., 2016). For this reason, this question is included in the study.

Item 7g. [removed for copyright]

Rationale. While teacher performance may be a concern of school improvement, the literature does not support the need to examine teacher performance as a component of PLCs. Therefore this item is not included in the study.

Item 7h. [removed for copyright]

Rationale. Part of the process teachers engage in during PLCs is providing one another with strategies as they examine what has been tried when students did not respond to teaching the first time (DuFour et al., 2016). For this reason, this question is included in the study.

Item 7i. [removed for copyright]

Rationale. Teacher evaluation is not part of the PLC cycle. For this reason, this question is excluded from the study.

Item 7j. [removed for copyright]

Rationale. The school improvement team may look at data, but it is not designed to look at formative data that impacts instruction immediately. For this reason, this question is excluded from the study.

Item 7k. [removed for copyright]

Rationale. PLCs do celebrate success, but this question is unclear as to what type of accomplishments are being recognized. Therefore this question is excluded from the study.

The construct of professional development is included for analysis in this study. Professional development can take many forms and is designed to help teachers aid in development of their craft as they learn new strategies and methods for all aspects of their responsibilities (Pharis et al., 2019).

The construct of professional development includes the items below. Each item is listed and a rationale for its inclusion or exclusion in data analysis is provided.

Item 8a. [removed for copyright]

Rationale. Professional development is designed to improve teachers' educational practices and can take on many forms, ranging from mentoring, to coaching, to district-initiated sessions (Patton et al., 2015). This question is included in the study.

Item 8b. [removed for copyright]

Rationale. It is important for professional development and PLCs to be frequent and long enough for learning to take place (DuFour et al., 2016). This question is included in the study.

Item 8c. [removed for copyright]

Rationale. Teachers need to engage in professional learning that is timely and relevant to their needs (Kleickmann et al., 2016). This question is included in the study.

Item 8d. [removed for copyright]

Rationale. While the school's improvement plan may have overall goals, professional development that is aligned with PLCs is more teacher-specific and not necessarily relevant to the entire school. This question is excluded from the study.

Item 8e. [removed for copyright]

Rationale. Targeted professional development can help teachers engage in the PLC process and learn new strategies to meet the needs of their learners (DuFour et al., 2016). This question is included in the study.

Item 8f. [removed for copyright]

Rationale. Professional development can be specific to help improve content knowledge and strategies to teach the content to students (Patton et al., 2015). This question is included in the study.

Item 8g. [removed for copyright]

Rationale. While instructional technology can be used as a strategy for teaching and learning, the sole use of this as an instructional strategy is not supported by literature. This question is excluded from the study.

Item 8h. [removed for copyright]

Rationale. Reflection is an important part on examining what happened when students did not respond as expected to teaching and learning experiences (Lundgren, 2014). This question is included in the study.

Item 8i. [removed for copyright]

Rationale. Reflection and examination of strategies implementation are embedded into the focused collaboration and PLC cycle (DuFour et al., 2016). This question is included in the study.

Item 8j. [removed for copyright]

Rationale. PLCs require teachers to work with peers to examine teaching practices and match strategies to needs of learners (DuFour et al., 2016). This question is included in the study.

Item 8k. [removed for copyright]

Rationale. Evaluation of teacher professional development is important to improve teacher learning to ensure it is timely and relevant, but it is not a component of a PLC. Therefore, this question is excluded from the study.

Item 8l. [removed for copyright]

Rationale. PLCs include matching student learning needs to appropriate strategies by looking at data and examining teaching practices (DuFour et al., 2016). This question is included in the study.

Item 8m. [removed for copyright]

Rationale. Professional development allows teachers to learn about research-based practices and ways to implement these practices. PLCs allow teachers to match strategies learned to the appropriate groups of students (DuFour et al., 2016). This question is included in the study.

The construct of instructional practice and support is included for analysis in this study. Support networks and access to resources play a vital role in empowering teachers to improve their craft and engage in collaboration (Tomlinson, 2014; Voelkel & Chrispeels, 2017b).

The construct of instructional practices and support includes the items below. Each item is listed and a rationale for its inclusion or exclusion in data analysis is provided.

Item 9a. [removed for copyright]

Rationale. PLCs are data-driven and results oriented. Data sources can come from a variety of places, including state assessments (DuFour et al., 2016; Farley-Ripple & Buttram, 2014). This item is included in the study.

Item 9b. [removed for copyright]

Rationale. Improving instructional practices is a goal of PLCs, and using data to examine learning is part of the process (DuFour et al., 2016; Ronfeldt et al., 2015). This item is included in the study.

Item 9c. [removed for copyright]

Rationale. Teachers must examine student data to determine who has mastered standards and who has not. Discussions about how to meet instructional needs of each group of students is expected to take place in effective PLCs (DuFour et al., 2016; Farley-Ripple & Buttram, 2014). This question is included in the study.

Item 9d. [removed for copyright]

Rationale. While standards are an important part of defining what students should know and be able to do, the effectiveness of PLCs is not determined by whether or not the curriculum is related to a certain type of standards. Therefore this question is excluded from the study.

Item 9e. [removed for copyright]

Rationale. Having a dedicated time to engage in conversations surrounding data that allows teachers to examine and learn instructional practices is an essential component of PLCs (DuFour et al., 2016). This question is included in the study.

Item 9f. [removed for copyright]

Rationale. Improved instructional practices is a goal of both professional development and PLCs (Farley-Ripple & Buttram, 2014). This item is included in the study.

Item 9g. [removed for copyright]

Rationale. A safe, encouraging environment fostered by leadership allows teachers the freedom to try instructional strategies learned from peers or from professional development (Goddard et al., 2015). These essential components are needed to improve student achievement (Shirrell et al., 2019). This question is included in the study.

Item 9h. [removed for copyright]

Rationale. Student assignment is not a factor in PLCs as PLCs require a shared vision where all students learn. Student assignment as a critical factor is not supported by literature. This question is excluded from the study.

Item 9i. [removed for copyright]

Rationale. Deprivatizing educational practices allows for teachers to share ideas and make instructional decisions right for their students (Cravens et al., 2017). This question is included in the study.

Item 9j. [removed for copyright]

Rationale. While state assessment data can provide teachers with information that can be used to improve teaching, PLCs tend to look at data that can make immediate impacts as formative assessment (DuFour et al., 2016). This question is excluded from the study.

Item 9k. [removed for copyright]

Rationale. State assessments are designed to determine if students understand standards, but often questions and student responses are not released to teachers for examination upon completion of the test. Therefore this question is excluded from the study.

Item 9l. [removed for copyright]

Rationale. Teachers and staff have to operate with a common vision and mission, to educate all students while truly believing all students can learn (DuFour et al., 2016). Teachers also plan for assignments that allow students to be successful if they understand the material. This question is included in the study.