A Mixed Methods Bounded Case Study: Data-driven Decision Making Within Professional Learning Communities for Response to Intervention

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Gabriel R. Rodriguez

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A Mixed Methods Bounded Case Study: Data-driven Decision Making Within Professional Learning Communities for Response to Intervention

Gabriel R. Rodriguez

APPROVED:

Dianne F. Olivier, Chair Associate Professor of Educational Foundations and Leadership	Mitzi P. Trahan Associate Professor of Educational Foundations and Leadership
Kathleen Campbell Associate Professor of Educational Leadership and Technology Southeastern Louisiana University	Mary Farmer-Kaiser Dean of the Graduate School

DEDICATION

When I am strong, courageous, or brave, it is because of the two men in my life I admire most. I would like to dedicate this doctoral dissertation to my spouse, Chris Chastant, and my late father, Leo Rodriguez.

To Chris Chastant, whose encouragement and support have allowed me to garner strength when I felt weak, courage when I have been scared, and bravery when I have wanted to retreat. I consider this dissertation an example of your love and encouragement, and a reflection of our lives together.

In memory of my late father, Lionel “Leo” Rodriguez, it has been so long; I always wonder what you think of me.

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CHAPTER 1: INTRODUCTION

Overview

The educational landscape is undergoing tremendous change. Federal accountability standards, teacher evaluation systems, and Response to Intervention (RTI) for struggling students are among these changes. Local educational agencies are responsible for meeting the demands of state and federal mandates and school leaders face many challenges as they adapt to laws, policies and professional practices, all to improve student learning. This pursuit of improvement is often referred to as school improvement, school reform or a host of other terms that describe the efforts schools engage in to improve student learning. Hord defines improvement as obtaining desired new results (Hipp & Huffman, 2010), and educational leaders and teachers seeking these desired results must make instructional decisions aimed at improving student learning. When seeking desired new results, school improvement efforts focus upon addressing the needs of all students, including those who need intervention or additional supports. As Hord asserts (2010), when schools implement change to achieve new results, learning is required for any changes to be implemented and sustained successfully. This includes learning on the part of teachers and schools as a whole. Many schools are implementing professional learning communities (PLCs) as a means of bringing about change and continuous learning for teachers. The concept of professional learning communities is defined by Hipp and Huffman (2010) as "professional educators working collectively and purposefully to create and sustain a culture of learning for all students and adults" (p. 12).

To build and sustain a culture of learning, a growing number of schools are implementing professional learning communities to address organizational change for school

improvement. Dufour (2004) describes the professional learning community as a framework for transforming schools at all levels when a school staff focuses on learning rather than teaching. Shifting the focus to learning for all students and adults requires teachers to go beyond sharing student data but rather respond to the data through mutual accountability and adjustments to their practices (Jessie, 2007). Adjusting practices based upon student performance requires teachers to be proficient at collecting, analyzing, and applying data to determine the best practices for student learning to occur. The term data-driven decision making is prevalent in school reform efforts and Bernhardt attests (2004) that "true data-driven decision making has at the center of every decision the guiding principles of the learning organization" (p. 285). Understanding the data-driven decision-making process, specifically how teachers reflect upon student data, determine appropriate interventions and supports and implement teaching practices to meet the needs of students is imperative to understanding the PLC process. How a professional learning community contributes to the selection and implementation of interventions and supports to improve individual student learning also impacts overall school improvement as well as overall school reform efforts.

Study Overview

A growing number of schools are implementing PLCs to address school improvement, staff engage with data to identify student needs and determine instructional interventions. This is a starting point for engaging in the iterative process of learning for the teach to increase student learning (Hord & Sommers, 2008). The iterative process of data-driven decision making within PLCs may isolate true PLCs into simplified data meetings, while a professional learning community can more accurately be described as a process (Jessie, 2007).

This mixed methods case study addressed how data are used within the professional learning community process for Response to Intervention (RTI) efforts of a small rural school district. The research study comprehensively investigated the personal experiences of faculty members related to three key constructs described in the conceptual model of an Organizational Learning Culture illustrated in *Figure 2*.

- Data-driven Decision Making
- Professional Learning Communities (PLCs)
- Response to Intervention (RTI)

Although the qualitative phase of this study was the primary focus of the investigation, the researcher quantitatively explored the dimensions of PLCs to supplement the qualitative findings. According to Creswell (2014), "When an investigator combines both quantitative data along with personal experiences (qualitative data), there is a better understanding of the research problem than either form of data alone" (p. 2). All schools within the educational agency participated in the research study, and are currently implementing the professional learning community process while using data to drive instructional decisions for students participating in Response to Intervention.

To develop rich descriptions of Data-driven decision making, PLCs, and Response to Intervention, one-on-one face to face interviews were conducted with each school principal in the district. Additionally, focus group interviews with teachers at each school provided rich descriptions of the three key constructs:

- Data-driven Decision Making
- Professional Learning Communities (PLCs)
- Response to Intervention (RTI)

Perceptions of Professional Learning Communities were collected through a quantitative survey method to describe the district's engagement in PLCs.

Conceptual Framework

Schlechty's (1993) research related to school improvement defines improvement as "focusing on doing the same thing better with the intent of changing and enhancing the performance of individuals within existing systems" (p. 46). As educational leaders address school improvement, challenges exist when balancing educational mandates with student learning. The quest to educate while simultaneously satisfying federal and state policy has left educators with new standards to implement and assess; new evaluation systems to measure teacher effectiveness; meanwhile leaving schools overwhelmed with data. Data generated in schools has the intent of informing educators by guiding decision making for student learning; however, teachers and school leaders are pressured with local, state and federal mandates so the intent of data use is often lost. The process of systematically gathering and analyzing data to inform instruction for students can be overshadowed with the various programs and policies that continue to surmount one another.

Figure 1 depicts a typical approach in many school districts, referred to as an accountability culture. This is where the focus of the school is upon student test scores, where data are used mainly to identify problems and monitor compliance, all while teacher and principal voices are precluded (Park, Daly, & Guerra, 2013). In this type of accountability culture, the emphasis is placed upon *what* must be accomplished and data are used to avoid sanctions and complete mandated reports or plans. According to Firestone (2009), principals become enforcers of central office policy, often finding themselves caught between central office and their own school staffs. As *Figure 1* suggests, this outside-in

approach emphasized the dissemination of professional mandates to school staff for any new initiative, or *what* needs to be accomplished, such as RTI, new state standards, new teacher evaluation systems, etc. The various tasks that are added to teacher responsibilities are considered *what* things that need to be accomplished in schools. In typical school settings, these tasks are framed by the school leader as priorities for school improvement and student learning. Educational reform efforts, such as Response to Intervention, are considered one of the many *what* tasks for teachers and schools to implement. Although the intention of RTI is to monitor the response a student has to an intervention, it is often perceived by teachers as another *what*; something that needs to be accomplished in order to monitor compliance rather than to improve student learning and outcomes.

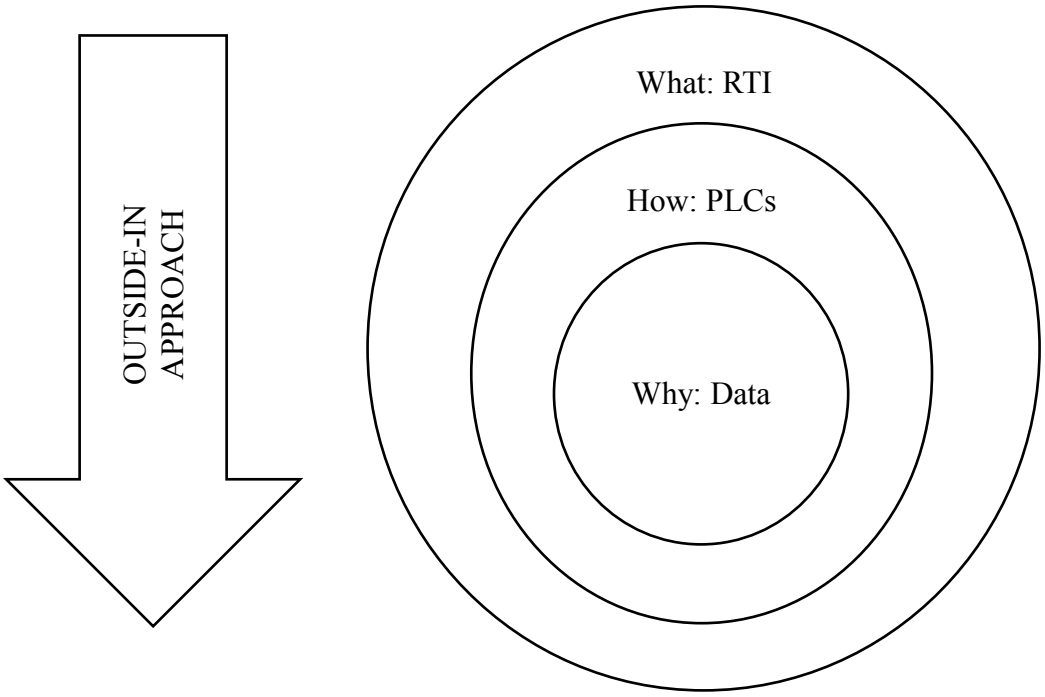


Figure 1. Accountability Culture

Firestone (2009) contends that teachers have access to professional development in an accountability culture, but it is generally limited to one-shot workshops and the emphasis

is always heavily placed upon increasing scores. *Figure 1* represents the outside-in approach to school reform present in an accountability culture where emphasis is placed upon schools as to *what* needs to be accomplished, and sometimes teachers receive professional development as to *how* to accomplish a given task or initiative. The conceptual model contends that very rarely do schools address *why* to embark on a specific initiative or task to improve student learning. In an accountability culture where a greater emphasis placed upon test scores and compliance with mandates. *Figure 1* graphically represents an outside-in approach to RTI where the emphasis is stressed upon *what* RTI is rather than upon *how* professional educators can work collectively and purposefully to create and sustain a culture of learning for all students and adults as Hipp and Huffman described Professional Learning Communities (2010). This model also described how even less significance is placed upon *why* data should inform the selection of interventions and supports to improve outcomes for struggling students in Response to Intervention. In this model, the data used is primarily to identify students who are poor performers and to monitor absolute scores in an accountability system based upon adequate yearly progress.

According to Sinek's *golden circle* (TED Talk, 2009), great leaders inspire action by beginning with the adverse approach, beginning with *why.* In the conceptual model shown in *Figure 2*, PLCs serve as the conduit within an *Organizational Learning Culture*, bridging data-driven decisions and RTI. This allows for emphasis to be placed upon student learning and instructional improvement while including teacher and principal voices (Park, Daly, & Guerra, 2013).

The *Organizational Learning Culture model* depicted in *Figure 2* describes how teachers must first understand student data to inform decision-making. The process of data-driven

decision making allows teachers to first understand why changes to instruction may be necessary. Once teachers understand the significance of *why* change is needed for student or school improvement, the professional learning community determines *how* to act or engage in collective and purposeful learning for both student and teacher. According to Taylor (1986), processing of information is a vital aspect of human behavior and is a critical input to the decision process (Taylor, 1986). In this model, professional learning communities served as the process in which teachers engaged in an iterative process based upon student data (*why*), through continuous cycles of learning within PLCs (*how*) in order to make critical decisions to address the needs of students, RTI *(what*). Contrary to the accountability culture model in *Figure 1*, the organizational learning culture is based on continuous learning for students and teachers. This is where progress is monitored and instructional practices are adjusted based on student need rather than solely to meet accountability demands.

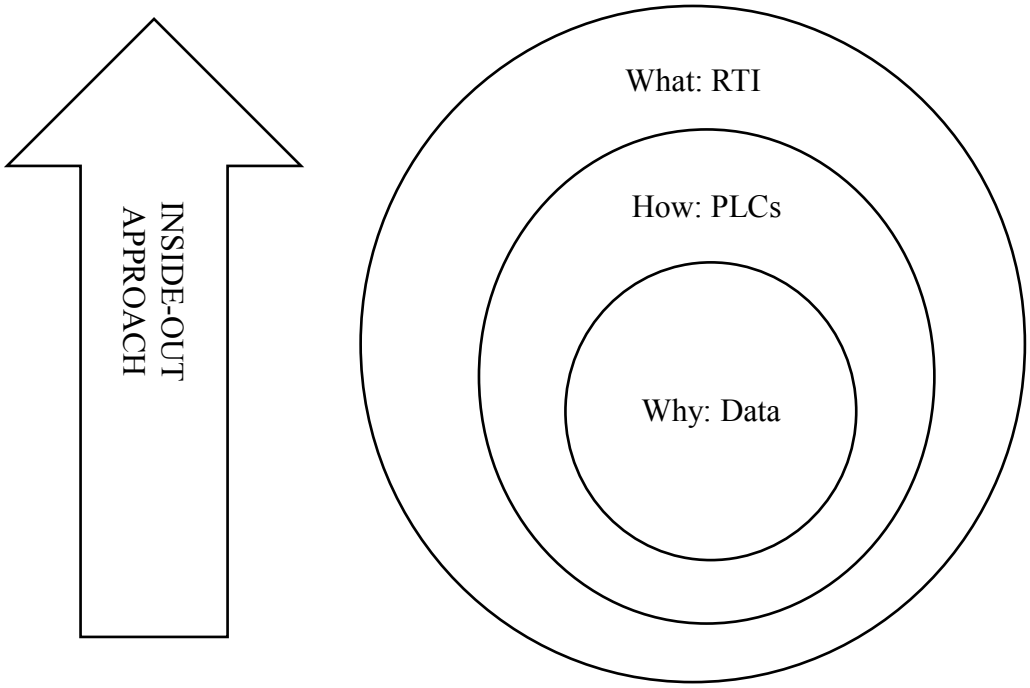


Figure 2. Organizational Learning Culture

The conceptual model of an Organizational Learning Culture in *Figure 2* depicts the three key constructs that were the focus of this study:

- Data-driven decision making
- Professional Learning Communities (PLCs)
- Response to Intervention (RTI)

Overarching Goal

How are data used within the professional learning community process for Response to Intervention (RTI)? This was the foundational question proposed in this study. The overarching goal of this study was to clearly describe the relationship between the three key components that are introduced in the *Organizational Learning Culture*. This proposed conceptual model served to inform the research related to data-driven decision making in schools, contributed to the PLC process and RTI, supported the focus of professional development for educators, and contributed to improved learning for students who need intervention and additional supports. This research also informed educational leaders and policy makers at all levels of the importance of specifics related to data, and how it should be used to inform change.

Statement of the Problem

Faced with an influx of federal, state and local educational changes, school principals in an accountability culture spend more time enforcing mandates rather than helping teachers learn to teach more effectively (Firestone, 2009). The intent of change in education is to improve outcomes for students. However, many educational leaders and classroom teachers find themselves reluctant to change. Often, because they do not know how to change, they continue to make uninformed instructional decisions. The result may be reflected in stagnant

or declining student outcomes. As research indicates, when faced with change, there are those who are motivated by new challenges while others may resist the opportunity (Schlechty, 1993). Educational leaders find themselves challenged with providing opportunities for teachers to work collectively and purposefully to meet the demands of change while always remaining focused upon a culture of learning.

Accountability demands are forcing school leaders and teachers to explore multiple sources of data and engage in more sophisticated data analysis (Lou, 2008). The Individuals with Disabilities Act of 2004 (IDEIA 2004) reflects a national shift in perspective when addressing the needs of students considered to be *at risk*. Since the reauthorization of IDEIA in 2004, outcome evaluations of interventions have been included in the assessment process. This leaves educators and researchers to interpret how to best operationalize and address student difficulties and if they originate from instructional deficiencies (Carney & Stiefel, 2008). Referred to as Response to Intervention (RTI), schools are tasked with identifying students at risk for poor learning outcomes, providing evidence-based interventions, monitoring student progress and adjusting the intensity and/or nature of those interventions based upon student responsiveness ((National Center on Response to Intervention, 2010, p. 2). This process requires that teachers and school leaders know how to collect, interpret and use data in a more sophisticated manner to inform instruction for all students.

Purpose of the Study

The purpose of this study was to examine how data are used within the professional learning community process for Response to Intervention (RTI). Thus, the overarching research question guiding this study is, *to what extent do teachers use data-driven decision making in Professional Learning Communities for Response to Intervention?*

The crucial constructs of this study included understanding (1) Data-driven Decision Making (DDDM), as well as (2) Professional Learning Communities (PLCs) and (3) Response to Intervention (RTI). According to Marsh, Pane, and Hamilton (2006), data-driven decisions may become misinformation or lead to invalid inferences without high quality data and technical assistance. Professional Learning Communities allow teachers to work together, engaging in a continuous dialogue to examine student performance in order to develop and implement more effective instruction (Darling-Hammond & Richardson, 2009). The examination of student performance data allows teachers to determine which students need intervention or additional support through RTI. The core principal of Response to Intervention is to offer a range of interventions that are systematically applied to students based upon their demonstrated level of need (Simonsen, Sugai, & Negron, 2008).

Significance of the Study

It was important to understand the function of data-driven decision making within PLCs for RTI. How teachers use data within the PLC process impacts how interventions and supports are systematically applied to students based upon their level of need (Simonsen, Sugai, & Negron, 2008). Interest in the research topic was significant to study based upon current changes in education related to student learning as well as teacher quality. A study examining the use of data within professional learning communities for RTI serve educational leaders and all teaching practitioners in the field. Additionally, the significance of this study was to assist local and state educational agencies with addressing new achievement standards and evaluation measures that are not only new to education but require tremendous amounts of data collection, analysis, and application to meet proficiency.

Finally, the research was intended to add to the literature base regarding data-driven decision making, PLCs and interventions and supports to meet student needs.

Research Questions

The purpose of this study was to examine how data are used within the professional learning community process for Response to Intervention (RTI). This research examined how data are used within the professional learning community process for Response to Intervention (RTI) using a mixed method design, allowing the researcher to collect both qualitative and quantitative data (Creswell, 2014). Qualitative data related to data-driven decision making, PLCs and RTI are reported in this study. The qualitative component served as the primary focus of the research. However, the researcher believed that relying solely upon qualitative data and excluding quantitative data would leave out a major construct of this study. By examining both research design methods concurrently within this study, the researcher gained a broader perspective and deeper insight (Creswell, 2003).

Concurrent Nested Mixed Methods Model. Terrell (2011) identified a concurrent nested study as a research design where two data collection methods are used, one given priority as the primary data approach, while the secondary data component is nested within the primary. For this research study, a qualitative approach was the primary research component, with quantitative methods nested within the study.

The overarching goal of this study was to clearly describe the three key constructs described in the conceptual model of an Organizational Learning Culture illustrated in *Figure 2*. This research was focused upon:

1. Data-driven Decision Making
2. Professional Learning Communities (PLCs)

3. Response to Intervention (RTI)

The three key constructs contributed to the development of research questions for the study. The mixed method research study was guided by the following research questions.

Research Question 1 (Qualitative). What are faculty perceptions of data-driven decision making for Response to Intervention as measured by principal interviews and teacher focus group interviews?

Rationale. This study explored principal and teacher perceptions related to data-driven decisions within PLCs for Response to Intervention. The primary purpose of this question determined school principals' perceptions of the role of data within PLCs as part of RTI. Additionally, this question determined teachers' perceptions related to the role of data within PLCs as part of Response to Intervention.

Research Question 2 (Qualitative). What are faculty perceptions relative to the benefits of collaboration within PLCs when analyzing student data as measured by principal interviews and teacher focus group interviews?

Rationale. The primary purpose of this question determined faculty perceptions of collaboration within PLCs in relation to the process of analyzing data and making decisions collaboratively about RTI.

Research Question 3 (Qualitative). How does data-driven decision making within the PLC process impact Response to Intervention (RTI)?

Rationale. The interventions and supports chosen for students during PLCs are important decisions for student learning. This question examined how data-driven decision making impacts RTI.

Research Question 4 (Quantitative). What are faculty perceptions of Professional Learning Communities as measured by the PLCA-R?

Rationale. If Professional Learning Communities served as the conduit from bridging data and RTI, it is critical to determine teacher perception of the PLC process. Examining the dimensions of PLCs provided the study with greater insight into how effectively these learning communities impacted the organizational learning culture. The purpose of this research question examined PLCs as a collective district. Additionally, the researcher analyzed the data for each school to compare PLC dimensions from school to school.

Research Question 5 (Quantitative). What are faculty perceptions of specific PLCA-R survey items related to DDDM? (7 item composite score)

Rationale. When evaluating the PLC process, it was important to investigate teachers' perceptions of the importance of data as part of the process. The purpose of this research question examined the specific survey items related to data-driven decision making. The researcher compared composite scores for this data construct and compare the composite scores from school to school, examining the data construct.

Research Question 6 (Quantitative). Is there a correlation between PLCA-R dimensions?

Hypothesis. A statistically significant relationship does not exist between the dimensions of professional learning communities as measured by the PLCA-R.

Rationale. The four schools in this study have been part of the professional learning community initiative for several years. The intent of this research question examined teacher perceptions of each dimension of PLCs. For the intent of this study, the data provided insight into perceptions across the district as well as within each school.

Research Question 7 (Quantitative). Is there a correlation between specific PLCA-R survey items related to data and PLCA-R dimensions?

Hypothesis. A statistically significant relationship does not exist between the data scale and the dimensions of professional learning communities as measured by the PLCA-R.

Rationale. When the Professional Learning Community Assessment (PLCA) was revised in 2010, the developers of the assessment integrated specific items related to data. Thus, the Professional Learning Community Assessment-Revised (PLCA-R) now served to include important information about data collection, interpretation and use of data to focus improvement efforts (Olivier & Hipp, 2010, as cited in Hipp & Huffman, 2010). The interest of this question determined how teacher perceptions of specific items addressing data within the PLCA-R and how those perceptions compare to overall perceptions of each dimension of PLCs.

Hypothesis*:* There is no statistically significant correlation between PLCs and the use of data to inform decision-making.

Rationale. The primary purpose for including this hypothesis determined the perceptions of respondents related to specific items addressing data within the PLCA-R. The developers of the assessment determined the importance of assessing how data are collected, interpreted and used to focus improvement efforts (Olivier & Hipp, 2010, as cited in Hipp & Huffman, 2010).

Conceptual/Operational Definitions

Defining terminology pertinent to the research can provide clarity for the reader. For the purpose of this study, the following conceptual and operational definitions were used in the discussion of key issues:

Data-Driven Decision Making

Conceptual definition. Making decisions based on demographic, student learning, perceptions, and school process data. True data-driven decision making has at the center of every decision the guiding principles of the learning organization (Bernhardt, 2004).

Operational definition. The process of teachers collecting, analyzing, and applying data to determine and implement instructional practices to improve student learning.

Professional Learning Communities

Conceptual definition. "Professional educators working collectively and purposefully to create and sustain a culture of learning for all students and adults" (Hipp & Huffman, 2010, p. 12).

Operational definition. Is operationally defined by the Professional Learning Community Assessment-Revised (Olivier, Hipp, & Huffman, 2010) and the interview protocol established for the principal interviews and teacher focus group interviews.

Response to Intervention

Conceptual definition. "Schools identify students at risk for poor learning outcomes, monitor student progress, provide evidence-based interventions and adjust the intensity and nature of those interventions depending on a student's responsiveness" (National Center on Response to Intervention, 2010, p. 2).

Operational definition. For the purpose of this study, Response to Intervention was operationally defined by the Louisiana Department of Education's Response to Intervention Implementation Plan as "a general education framework through which a school creates a high-quality education environment by screening the needs of all students; differentiating core instruction for all students; applying research-based interventions to address specific

needs of individual students; and continually monitoring progress to ensure success,"(Louisiana Department of Education, Response to Intervention (RTI) Implementation Plan, n.d., p. 3).

Assumptions

This study was based upon the following assumptions:

1. Respondents from this local educational agency/school district are representative of the teaching population and administration for the study.
2. It is assumed that respondents were reasonably honest in reporting their perceptions during self-assessment surveying, during focus groups or individual interviews.
3. Voluntary participation of school principals and teachers generated sufficient responses to establish valid and reliable means on the constructs used during this research.

   There is an assumption that personal perceptions of respondents are valid and reliable indicators of the normal operations, processes and events that occur within the schools participating in this study.

Limitations

In the qualitative phase of this study, the gathering of information from interviews with principals and during teacher focus groups may be interpreted and transcribed outside of the context intended by the respondent. While conducting individual or focus group interviews, participants may be hesitant to share their perceptions among their peers in a completely open manner. During the quantitative phase of this study, self-reported data from the PLCA-R may limit the study. Misinterpretation of survey questions by respondents from the PLCA-R may contribute to completed surveys that are not reflective of the actual

perceptions intended to be conveyed by participants. An additional limitation of this mixed-method study is the collection of data representative of current perceptions of instructional practices within the school district at the time the study is conducted. The limitation that caused the greatest concern is related to the principal interviews. The instructional leaders of each school were included in the principal interviews however the high school principal transitioned from principal to a central office supervisor so the assistant principal was interviewed as the instructional leader of the school. Although in her first year as an assistant principal, the administrator interviewed previously served in a leadership role as the literacy integration specialist the previous three years.

Chapter Summary

The overarching purpose of this study examined how data are used in the PLC process to address Response to Intervention. Chapter 1 provided an overview of the conceptual model, *Organizational Learning Culture,* which depicts the importance of data used within PLCs. For PLCs to make decisions related to Response to Intervention, the researcher investigated how the emphasis is placed upon teachers first understanding the significance of *why* changes are needed for student learning or overall school improvement using data. Additionally, *how* the professional learning community served as the catalyst for how change occurs, as teachers engage in an iterative process of data-driven decision making and cycles of learning through PLCs to address *what* interventions and supports are used through Response to Intervention (RTI). The purpose of the study and the research questions guiding the study were presented in this chapter. Conceptual and operational definitions for each construct of the study were introduced and assumptions and limitations of the study conclude the chapter.

CHAPTER 2: REVIEW OF THE LITERATURE

Introduction

National changes to the educational system in the United States are currently focused upon an accountability system that addresses both student performance as well as the value teachers add to a student's performance in school. One of the main reforms in education is the movement away from absolute scores to measure proficiency to a system that measures individual growth of students to make test scores more informative for decision making. This type of reform is being implemented across the nation, including Louisiana, where value-added modeling (VAM) factors the contributions of schools and teachers towards the growth in student achievement (McCaffery, Lockwood, Koretz, & Hamilton, 2003). Louisiana Act 54 was mandated in all public schools as of the 2012-2013 school year. This VAM model required setting student achievement baselines and establishing student growth targets (Act 54 Louisiana, 2011). This accountability system counters the most recent assessment model of measuring adequate yearly progress, which neither imposes expectations nor gives credit for increases in school-level scores across time or for individual student growth (Forte, 2010). Educators are charged with meeting the demands of these changes in accountability for student learning by establishing baselines, setting goals and creating student learning targets while monitoring progress as instructional practices are implemented. How do teachers use data in a professional learning community to meet the needs of students while meeting the demands of this new accountability system? Consideration should be given to understanding how practitioners make data-driven decisions when selecting and implementing academic interventions and supports for students. This study specifically seeks

to understand how teacher decision-making related to RTI is impacted when addressed within a professional learning community process.

Evolution in Recent Educational Reform

A literature review on modern school reform initiatives in the United States is necessary to gain a historical perspective on recent reform efforts and the implications upon current educational practices. As noted by Schlechty, (1993) the intent behind reform or restructuring is to change systems so that new types of performance are possible and encouraged. This type of change can be daunting to educators and for new performance to impact student achievement it is essential to review recent reforms in the national educational system that have influenced and contributed to the current reform efforts. A historical perspective will provide insight into current practices in education that contribute to educational performance by students, teachers and educational leaders.

In the early 1990s, the Restructuring Movement was looked upon optimistically by those in education who were disenchanted by the reform efforts of its predecessor, the *Excellence in Education Movement.* The Excellence national reform efforts focused primarily upon standardization and centralized mandates and regulations, leaving little autonomy to local schools (Dufour & Eaker, 1998). Therefore, the Restructuring Movement renewed optimism in educators with a primary focus upon site-based management for school improvement, a contradiction to the excellence in education approach of tightening standards and rewarding excellence in a top-down manner (Papagiannis, Easton, & Owens, 1991). Newmann and associates (as cited in Dufour & Eaker, 1998) identify new efforts in education focused upon restructuring school and school systems through comprehensive changes that included some common features such as: site-based management with

meaningful authority over staffing, programs and budgets; shared decision-making; staff teams with frequent, shared planning time and shared responsibility for student instruction; multi-year instructional or advisory groups; and heterogeneous grouping in core subjects. This shift towards local control in schools gives greater authority to educational leaders, allowing schools to choose programs and base policies and practices upon their own local needs and allowing schools to respond creatively (Dufour & Eaker, 1998).

The succession of educational reforms efforts from the excellence movement to the restructuring movement, emphasizes greater control at local levels in education. A research study on restructured schools indicates that site based management, allows school leaders to empower their teachers and improve their own educational processes, prove to be tenuous at best, leaving the teaching-learning process largely unaltered (Murphy, Evertson, & Radnofsky, 1991). Subsequent studies of the restructuring movement affirmed that when teachers were given the opportunity to make decisions for their schools, they typically opted to focus upon peripheral issues rather than core issues that address the quality of student learning (Newmann & Wehlage, 1995). No Child Left Behind (NCLB) Act of 2001 evolved as educational reform requiring schools to be accountable through adequate yearly progress with a goal of 100% proficiency by the 2013-2014 school year. NCLB implicitly defined the goal of school improvement around the concept of achievement status rather than the effectiveness of student learning (Forte, 2010). Measuring adequate yearly progress simply identifies the number of students at or above an identified proficiency level but does not address whether a school has been effective in supporting student learning, has had increases in growth across time, or acknowledges individual student growth (Forte, 2010). After a decade of accountability under this reform, educators unsuccessful at meeting adequate

yearly progress are now searching evidence-based practices to school improvement that support student learning and address the requirements of a new accountability system focused on measuring individual student growth. The concept of value-added accountability is distinguished by comparing students' scores with their own past scores as well as other contributing factors such as, attendance averages, discipline records and the socio-economic makeup of a particular class (Act 54 Louisiana, 2011). This contrasts the preceding practice of analyzing test data to measure students against an absolute standard of achievement or to rank them against each other. For schools to implement a new value-added assessment model, teachers and educational leaders are required to use whole group, targeted group and individual student-level data to measure growth as well as to implement best practices of support and intervention for students.

Data-driven Decision Making

Research suggests that the effective use of data to support positive outcomes for both educators and students require the ability to build capacity for those educators to effectively access, understand and apply data (Campbell & Levin, 2009). Using data to determine appropriate instructional practices or appropriate interventions or supports requires teachers to engage in the process of systematically gathering and analyzing data to inform decisions (Marsh, Pane, & Hamilton, 2006). Often, this process can be guided by the cultural emphasis in which data use exists. In a nationwide study of secondary schools, teachers discerned data use as an arbitrary process for a decision that has already been made rather than as information to form a decision (Ingram et al. 2004). When considering improvements school-wide, the use of data to make informed decisions is prevalent. Educational leaders are now required to analyze, interpret and use data to make informed decisions in all areas of

education, ranging from professional development for staff members to assessing student learning (Park & Datnow, 2009). One study states that school faculties often use data, primarily test scores, to develop school improvement plans that are required by district, state or federal mandates and are often considered to be labor intensive as well as compliance documents (Marsh et al., 2006). Park and Datnow (2009) attest that data should be actively used to improve instruction in schools however individual schools often lack the capacity to implement what is suggested as best practices. Wohlstetter et al. (2008) identified education as a field in which the practitioners make their decisions based upon intuition, gut instincts or fads. This is corroborated when the implementation of an empirically-based program or practice fails. Advocates of data-driven decision-making practices argue that effective data use not only identifies successes and challenges a school faces, but also helps schools identify areas of improvement and helps them to evaluate whether programs and practices are effective (Mason, 2002). Research indicates that the use of a problem-solving method and on-going progress monitoring ensure that interventions are being implemented vigorously (Elliott, 2008). Research supports the use of multiple levels of student achievement data to guide decision making when determining policies, programs and practices that best meet the needs of all students. This includes practices such as the evaluation of progress toward state and district standards, monitoring student performance and judging the efficacy of local curriculum and instructional practices (Wohlstetter et al., 2008). Response to Intervention requires frequent progress monitoring to make decisions about changes in instruction and apply student response data to those decisions (Elliott, 2008). When teachers use student data through progress monitoring, students learn more, teacher decision-making improves and students become more aware of their own performance (Safer, 2005). There is an emerging

body of research that examines the importance of data-driven decision making in creating more effective schools. When consideration is given to educational reform over the last several decades, Bernhardt (2004) notes, “the use of data can make an enormous difference in school reform efforts by helping schools see how to improve school processes and student learning” (p. 3).

Professional Learning Communities

Walker (2004), states that perhaps there is no field in which there is a greater discrepancy between the availability of empirically developed, evidence-based practices and their adoption and effective use than in K-12 education. Bernhardt (2004) suggests that a lack of cultural emphasis can contribute to schools where data-driven decision making is deemed unimportant or where data collection is perceived as being a waste of time. As schools implement evidence-based practices to address school improvement needs and meet accountability standards, evidence and scientifically-based practices rarely yield the results that educational leaders hope for. There are many factors which may contribute to the lack of success of any process or program in schools. Teachers and principals need the opportunity to meet as professionals for effective interventions to be applied into practice. Research advocates that the reform of curriculum and instruction in education improves as teachers apply the results of their own inquiry, professionalizing teaching by giving them the capacity to reflect on and improve their practices as well as to suggest changes for the teaching field (Llorens, 1994). This type of professional practice within the business sector has been termed *learning organization* (Hord, 1997). According to Senge (1990), learning organizations are where people continually expand their capacity to create the results they truly desire, where new and expansive patterns of thinking are nurtured, where collective aspiration is set free,

and where people are continually learning to see the whole together. This type of learning organization could be applied to the key characteristic of collaboration required for service delivery decision making. Senge (1990) states:

> While all people have the capacity to learn, the structures in which they have to function are often not conducive to reflection and engagement. Furthermore, people may lack the tools and guiding ideas to make sense of the situations they face. Organizations that are continually expanding their capacity to create their future require a fundamental shift of mind among their members. (p. 6)

Senge (1990) developed a model for learning organizations composed of five disciplines to bring about change: (a) systems thinking, (b) personal mastery, (c) mental models, (d) building shared vision, and (e) team learning. These serve as foundational roots for the conceptualization and growth of professional learning communities and according to Hord (1997), the learning organization model developed by Senge, "emphasizes the importance of nurturing and celebrating the work of each individual staff person and of supporting the collective engagement of staff in such activities as shared vision development, problem identification, learning, and problem resolution" (p. 12). This learning organization theory provided the framework for the conceptualization and development of learning communities outside of the business sector and into school settings. The emergence of work in schools that included attributes of the learning organization became termed "professional learning community" and has developed over time.

The five dimensions of PLCs. The term professional learning community has been used so ubiquitously that it is in danger of losing all meaning (DuFour, 2004). DuFour contends that the PLC process is currently in vogue and that the term has been used to

"describe every imaginable combination of individuals with an interest in education- a grade level teaching team, a school committee, a high school department or an entire school district and so on" (p. 6). The term PLC has been widely adopted in educational circles and is used to describe various meetings of groups, such as grade-level teams and school departments. As educational leaders made structural arrangements to provide time for teachers to meet, managerial issues often become the focus of these meetings, ordering books, scheduling study trips away from school, and organizing teaching schedules (Hord, 2008). The emergence of professional learning communities in education has led to the development of five research-based dimensions that capture the intention of true PLCs and include: (a) shared beliefs, values and vision; (b) shared and supportive leadership; (c) supportive conditions, both structural and relational; (d) collective intentional learning and application; and (e) shared personal practice (Hord, 1997, 1998, 2008). Collectively, these dimensions encompass how a staff operates as a research-based professional learning community. Dufour and Fullan (2013) attest that true PLCs can play a central role in improving school performance, engaging students and improving efficacy and job satisfaction for educators. In order to gain a greater understanding of these dimensions, synthesized research related to each dimension was presented and Hord's five dimensions of professional learning communities served to describe what the literature is calling the professional learning community.

Shared beliefs, values, and vision. In the PLC environment, students are regarded as being academically capable and the staff envisions a learning environment that realizes and fosters each student's potential (Hord, 1997). Sharing this overarching belief and vision places significance upon the focus of learning rather than teaching. Dufour and Fullan (2013)

attest, the fundamental purpose of PLCs is to ensure that all students learn and this is dependent upon how effective educators are in maintaining a focus upon learning for all students. In the PLC process, it is highly encouraged that all staff share in the development of a shared vision. When norms and values are shared, this common purpose serves as a guide for decision-making about learning in the school by all the staff (Hord, 1997). As a PLC constructs a shared vision, the common values and beliefs focus staff members on what topics they discuss and how instructional resources, including time, will be distributed to meet the needs of student learning (Hord & Sommers, 2008). RTI includes efficient and needs-driven resource deployment systems to match the instructional resources available within schools to the needs of students receiving intervention (Batsche et al., 2005). The school principal plays a critical role in the development of a shared vision, tasked with involving others to create and sustain a shared vision that connects teaching and learning while developing a professional learning community (Hipp & Huffman, 2010). School principals are responsible for articulating the importance of a school's shared vision and values in a PLC. The principal must continuously communicate the vision to all stakeholders, fostering commitment to the vision by all (Hord & Sommers, 2008). When a shared vision is developed and the entire staff share in a common vision and purpose, teacher and principal efficacy have been found to increase (Hipp & Huffman, 2010; Olivier & Hipp, 2010a, 2010b).

Shared and supportive leadership. Shared and supportive leadership is designated as a cornerstone of the PLC process. Hord & Sommers (2008) offer a defining characteristic of PLCs when power, authority, and decision-making are shared and encouraged. The function behind shared leadership is so teachers become actively involved in the organization and the

shared focus upon learning (Hord, 2008). The committed leadership of teachers and principals establishes a school culture that supports student learning (Hipp & Huffman, 2010). In one study, Huffman and Jacobson (2003) found that school leaders who exhibited characteristics of collaborative leadership had greater success when developing professional learning communities. The school environment and overall school improvement call for adult learning and decision-making that are shared among the administration and staff within the PLC structure. When staff and administration share in a common vision and decisions are made collectively, leadership is promoted through the distribution of power and authority of shared decision-making. When students require intervention or additional supports for academic or behavioral needs, shared decision-making is identified as core component of the RTI service delivery model (Glover & Diperna, 2007). Hord (1997) states that schools engaged in the PLC process who were committed to shaping the school based upon the needs of students "were enhanced by a vision that included attention to staff who would share broadly in making decisions for the school and who would be supported by continuous staff development to ensure wise decision making" (p. 38).

Supportive conditions: structural and relational. Along with these key characteristics, many researchers recognize that there are structural and relational conditions necessary for these learning communities to be successful. Structural conditions in professional learning communities include time for staff members to meet and space for collaborative work to take place (Hord & Sommers, 2008). Hord (1997) describes time as both a barrier (when not available) and as a supportive factor (when available) to schools engaging in school improvement (p. 21). Schools implementing RTI engage in progress-monitoring of student data to drive service delivery of instruction and interventions for

students who need additional support. One researcher noted that a positive result of having frequent opportunities to plan is that staff members have opportunities to share their strengths as well as their needs (Robins & Antrim, 2013).

Hord (1997) describes supportive conditions as the "when and where and how" a staff engages in learning together, decision-making and problem-solving that characterize a professional learning community (p 20). The human qualities included in supportive conditions, often referred to as "social and human resources" include openness to improvement, trust and respect, cognitive and skill base, supportive leadership and socialization (Fullan, 2006). The relational condition of trust is described by Hord and Sommers (2008) as providing the basis for giving and accepting feedback in order to work toward improvement (p. 14). In a study by Bryk and Schneider (as cited in Hord & Sommers, 2008), trust building was found to have a significant impact upon staff learning and decisions about actions to take for school improvement.

Collective intentional learning and application. Hord (1997) stresses that acquiring and applying new knowledge is an intellectual task and a high priority in a professional learning community (p. 43). The collective work of educators evidenced in professional learning communities has been found to increase the capacity of all members of a PLC to help all students achieve academically (Hipp & Huffman, 2010). Collective learning in PLCs allows individuals or groups of individuals to bring in new ideas for discussion and examination with colleagues (Hord, 1997). Peterson and Brietzke (as cited in Hord, 1997), contend that time and structured opportunities for joint work build collegial and collaborative cultures. Collaborative cultures are ones that focus on building the capacity for continuous improvement and are intended to be a new way of working and learning (Fullan, 2006).

Research by Jacobson (2010) cautions schools engaged in the PLC process when analyzing student assessment data through collective learning. Jacobson contends that the goal is not only to share knowledge and expertise that bear on learning, but to develop and build staff expertise as well. Dufour and Eaker (1998) describe collaborative team learning as focusing upon organizational renewal and a willingness to work together in continuous improvement processes. New skills and strategies develop through inquiry in search of best practices when educators learn together (Dufour & Eaker, 1998; Hord, 1997). Hipp and Huffman (2010) describes educator learning through professional development as an ongoing activity in operating schools inclusive of curriculum development, student assessment and the development and evaluation of instructional strategies. Hord and Sommers (2008) describe the collective learning process as staff members asking questions about student data, discussing where the staff should place attention for instruction and applying their concerns to problem solving to create new conditions for learning for all students.

Shared personal practice. Hord (1997) describes mutual respect and trustworthiness of staff as the basis for individual and community improvement through the sharing of personal practices. Teachers need open communication and a sense of safety when working with colleagues to share information, conduct peer observations and feel trustful to have these types of dialogues in an environment that supports their efforts. Teachers visiting each other's classrooms to observe, take notes, and discuss their observations facilitates the work of changing professional practices among a professional learning community (Hord & Sommers, 2008). Hipp and Huffman (2010) describe these types of activities as transparent and occurring on a regular basis. The researchers describe the sharing of personal practices as highly valued and developed around a structured process to guide professional interactions.

Wood (2007) describes a loss of expertise and lost insight in school cultures that dismiss teacher knowledge and have no organizational structure for making it public. Teachers work together, engaging in critical dialogue to examine their own practices and student performance and to develop and implement more effective instructional practices (Jacobson, 2010). This approach appears to have a more grass-roots approach to problem-solving issues that are identified by the teachers as priority. Darling-Hammond and Richardson (2009), point to such collaborative practices as peer observations of practice, analysis of student work, and study groups as examples of PLC activities.

The Professional Teaching and Learning Cycle

The Professional Teaching and Learning Cycle (PTLC) described in literature is a process for creating or strengthening PLCs by focusing on critical aspects that contribute to student outcomes while promoting continuous job-embedded professional development (Cowan, 2010). Originally designed as a process for aligning curriculum, instruction and assessment with state standards, the Professional Teaching and Learning Cycle (PTLC) provides a process for creating or strengthening a community of professional learners (Cowan, 2010). The PTLC is described as a job-embedded professional development process that offers a structure for collaboration about teaching and learning. Continuous job-embedded professional development promotes school improvement through professional growth and collaboration among teachers (Southwest Educational Development Laboratory, 2008). The six-step process of the PTLC includes: (a) study, (b) select (c) plan, (d) implement, (e) analyze, and (f) adjust. The process includes using data to drive the decision-making process for selecting instructional interventions and supports for students. The use of data is essential to professional learning communities and becomes part of the school's

culture. Each teacher team participates in this process of identifying the current levels of student achievement, establishing a goal to improve the current level of student achievement, working together to achieve that goal, and providing periodic evidence of progress (DuFour, 2004). Practitioners have made improvements using data to drive their decisions, however we must further understand the obstacles or barriers necessary for successful use of data when selecting interventions and supports for students. In order for teachers to make actionable knowledge from student data, a problem-solving framework helps to design instructional strategies and provides data for frequent monitoring of student responses to interventions (Batsche et al., 2005).

Response to Intervention

The reauthorization of the Individuals with Disabilities Education Act Improvement Act (IDEAIA) in 2004 called for significant changes to eligibility for special education services for struggling students in the category of learning disabilities while simultaneously allowing school districts to spend up to 15% of their IDEA part B funds on early intervention in general education (Yell & Walker, 2010). The emphasis on early intervention allows educational agencies to develop and implement coordinated early intervention educational services for students requiring additional academic or behavioral support in order to be successful in the general educational environment (Batsche et al., 2005). This led to a recommendation by Congress that school districts implement Response to Intervention procedures to assist in identifying students with learning disabilities as well as to intervene early to pre-identify students in need of additional support and address concerns as they emerge. Well aligned with the reform efforts of No Child Left Behind reform efforts, RTI has the intention of guiding decision-making about school based service delivery; not only

serving to identify at-risk students or students with specific disabilities, but as a utility for determining responsiveness to instruction and guiding service delivery for students in need of additional support or interventions (Glover & DiPerna, 2007). As the federal government currently works to amend school reform laws, 39 states and the District of Columbia have been issued waivers releasing them from the provisions of NCLB in exchange for adoption of college and career-ready standards along with new teacher evaluation systems linked to student achievement on standardized tests such as the value-added assessment model (Motoko, 2013).

Government policymakers, as well as the public, have put educational agencies under intense scrutiny over academic and social issues in schools. With newly adopted college and career-ready standards and a new teacher evaluation system, educational leaders are searching for educational reform solutions that improve student learning. Although federal reform efforts include reauthorizing the Elementary and Secondary Education Act of 1965, NCLB remains the current U.S. federal education policy. School reform under No Child Left Behind has been criticized as being flawed when matching actual student needs with pre-prescribed service types. Critic skepticism surrounds schools lacking capacity for designing and providing services for students in need of improvement (Forte, 2010). The response from the federal government has remained to implement evidence-based practices to address both academic and behavioral needs of students through Response to Intervention (RTI).

When defining Response to Intervention, the research describes part of this process as providing high-quality instruction and interventions matched to student need (Batsche et al., 2005). Response to Intervention (RTI) is defined as the practice of (1) providing high-quality instruction/interventions matched to student need, (2) using learning rate over time, (3) and

level of performance to make important educational decisions through a well-integrated system for providing both instruction and intervention for students facing academic or behavioral frustration or failure in school. RTI is strongly guided by child outcome data to make accurate decisions about the early identification of students with academic or behavioral problems as well to monitor the effectiveness of general and remedial instruction or intervention (Batsche et al., 2005). This process of implementing high quality instruction and interventions based upon student need requires educators to collect and analyze data relevant to student progress and make important educational decisions based upon the needs of all students while continuously monitoring and making adjustments as needed. Batsche et al. (2005) maintain that the selection and implementation of scientifically based instruction/intervention increases but does not guarantee positive individual response to a given intervention and therefore understanding student learning rates is critical to making decisions about intensity and duration of interventions for students in RTI (p. 5).

Subsequently, PBIS is defined as a decision-making framework that guides selection, integration, and implementation of the best evidence-based academic and behavioral practices for improving important academic and behavior outcomes for all students (OSEP Center on Positive Behavioral Interventions and Supports, 2010). PBIS is a considered to be a systems-level change for schools. It goes beyond simple knowledge dissemination and requires what the PBIS implementation blueprint refers to as continuous regeneration, an iterative assessment of implementation fidelity and outcomes. This iterative process is intended to sustain implementation and adaptation of the PBIS process so that valued outcomes continue to be achieved effectively and economically (OSEP Center on Positive Behavioral Interventions and Supports, 2010). Continuous assessment of implementation

efforts requires schools to collect and analyze data related to both academic and behavioral practices in order for appropriate service delivery of interventions and supports for students. Intervention and support processes are designed to meet the academic and social needs of students when teachers and school leaders engage in iterative cycles of investigation. Analyzing multiple sources of data allows educators to determine the best supports and interventions to improve student achievement both socially and academically. RTI is used to evaluate the effectiveness of basic instruction in meeting the needs of all students by assigning students to specific evidence-based interventions designed to improve their rate of learning or behavior (Glover & Diperna, 2007). PBIS represents a parallel model where preventative instruction related to behavioral expectations is delivered to all students and a multi-tiered, data-based approach to service delivery is provided to all students (Averill & Rinaldi, 2011). Table 1 illustrates how PBIS and RTI are both designed to provide service delivery through a multi-tiered system of interventions coordinated to maximize resources. Throughout this literature review, both academic and behavioral interventions and supports were referred to as Response to Intervention or RTI as a means of guiding decisions about school-based service delivery.

Response to Intervention: Tier one. The RTI framework is designed to address the needs of all students, not only those identified as at-risk or in need of intervention. All students receive class level or school-wide core academic and social instruction allowing for differentiated instruction based upon student need (Glover & Diperna, 2007). To differentiate instruction for all students, the RTI model is designed as a three-tier model of service delivery, where this initial tier, Tier One, provides class level or school-wide instruction to all students and is referred to as primary prevention (Batsche et al., 2005). Operationalizing

school-wide prevention through tier one is designed to prevent the development of problem behaviors through teaching of core behavioral or social school-wide expectations and teaching academic grade-level expectations or standards to students (Sugai & Horner, 2006).

Table 1

Three-Tier Model of School Supports

	Academic Systems	**Behavioral Systems**
TIER 3	Intensive Individual Interventions	Intensive Individual Interventions
	Individual Students	Individual Students
	Assessment-based	Assessment-based
	High intensity	Intense, durable procedures
	Of longer duration	
TIER 2	Targeted Group Interventions	Targeted Group Interventions
	Some students (at-risk)	Some students (at-risk)
	High efficiency	High efficiency
	Rapid response	Rapid Response
TIER 1	Core Instructional Interventions	Core Instructional Interventions
	All students	All settings, all students
	Preventive, proactive	Preventive, proactive

Note From: "Response To Intervention: Policy Considerations and Implementation" by Batsche, G., Elliott, J., Graden, J.L., Grimes, J., Kovaleski, J.F., Prasse, D., Reschly, D.J., Schrag, J. and Tilly, W.D., 2005, National Association of State Directors of Special Education.

Academically, when schools implement an RTI system, a foundation of curriculum, instruction and school organization present high probability of bringing the majority of students to acceptable levels of proficiency (Batsche et al., 2005). Throughout the teaching

and learning process, RTI is designed to identify students at-risk and in need of additional supports or interventions using the tiered model of service delivery. An RTI system is designed to incorporate increased instructional intensity to students that are directly proportionate to the student's needs (Batsche et al., 2005). Glover and Diperna (2007) contend that the greatest potential benefit of an RTI framework is the utility for determining responsiveness to instruction and guiding service delivery for students with unmet needs (p. 527).

Response to Intervention: Tier two. Students experiencing academic or behavioral frustration or failure are considered at-risk and participate in either targeted or group-based supplementary instruction known as targeted or tier two interventions. These students require additional supports to achieve primary (tier one) expectations. Therefore, when students receive secondary interventions it can be characterized as requiring increased adult attention and monitoring to supplement instruction or implement targeted strategies used to achieve grade-level expectations. The need for progress monitoring of student data to make decisions about intensity and duration of interventions for student improvement also requires increased adult attention and monitoring (Sugai & Horner, 2006). Noted by Mellard and Johnson (as cited in Johnson, Carter, & Pool, 2013), Tier 2 interventions are designed to be short and targeted to address specific deficits in skill or ability of students, therefore service delivery is intended to be in small groups with sufficient duration and frequency to be effective. The researchers also recognize that effective interventions need to be coupled with a robust progress monitoring system to guide decision-making and determine whether students are responding to interventions.

The broadly implemented practice of decision-making when progress monitoring has been criticized and considered to be delayed partially due to the difficulty Local Educational Agencies and State Educational Agencies have had in developing appropriate progress monitoring tools and materials. Research has indicated that Curriculum-based Measurement (CBM) can be used to effectively gather student performance data to support decision-making for educators including a strong evidence base to support the use of CBM to progress monitor student performance in a variety of academic areas (Deno, 2003). Generally, schools make decisions about academic adjustments to instructional practices or interventions every 8 to 12 weeks based upon data collected through CBM related to student progress (Coyen et al., 2013). Progress monitoring of behavioral interventions at Tier 2 include the use of a Daily Behavior Report Card (DBRC) as a method for collecting student data and measuring student progress to effectively guide decision-making related to a behavioral intervention (Tillman, Chafouleas, & Briesch, 2007). DBRC's are promising assessment tools when a specific behavior is rated at least daily and the information collected on the report card is shared with someone other than the rater, who is generally the classroom teacher.

Response to Intervention: Tier three. Tertiary intervention (tier three) requires highly individualized instruction or supports for students who are unresponsive to primary and secondary interventions (Sugai & Horner, 2006). According to Reschly (2005), levels of support or intervention are distinguished by the level of intensity and the precision of measurement used during progress monitoring at each level. Students receiving tier three interventions are generally characterized as having more severe difficulties meeting expectations and for some students, life-long difficulties. Researchers contend that as these three-tiered models of academic and behavioral support are increasingly being adopted

across the nation; schools need effective processes for collecting and using data for decision-making at each level or tier (Pool, Carter, & Johnson, 2013). Systematically monitoring student progress and making decisions about instructional needs for students within the RTI process are critical when considering service delivery to ensure that those students in need are matched with appropriate services (Glover & Diperna, 2007). As behavioral interventions at the tertiary tier are individualized to students, the functional behavior assessment (FBA) is used to gather predictive data related to the behavior, implement logical and consistent interventions and as a tool for outcome data measurement during progress monitoring (Scott, Alter, Rosenberg, & Borgmeier, 2010). Academically, individual diagnostic assessments are conducted to monitor intensive instructional interventions to determine specific patterns of skills that a student has or does not have to guide decision-making for effective instruction to remediate an academic deficit and increase an individual student's rate of progress (Batsche et al., 2005).

Response to Intervention: Progress monitoring. Service delivery for RTI requires assessing student progress and decision making (Glover & Diperna, 2007). Response to Intervention requires frequent progress monitoring in order to make decisions about changes in instruction and apply student response data to those decisions (Elliott, 2008). The progress monitoring procedures that are prominent in RTI illustrate the importance of using data for decision making (Sandomierski, Kincaid, & Algozzine, 2007). Research suggest that schools should start with accountability data to make decisions related to whether they are meeting standards. If schools find themselves not meeting standards, then they should use data to change their practices and then monitor the effectiveness of those changes (Ingram, Louis, & Schroeder, 2004). Decision-making in Tier 1 also includes the use of universal screenings in

core academic areas to identify each student's level of proficiency and is generally conducted three times per school year (Batsche et al., 2005). The use of brief academic indicators such as the Dynamic Indicators of Basic Early Literacy Skills (DIBELS), as well as brief assessments approaches (Systematic Screening for Behavioral Disorders) for identifying children with or at risk for behavioral disorders, are examples of common screening systems with moderate to strong reliability when used to identify students in need of academic or behavioral intervention (Glover & Diperna, 2007). Using data to determine appropriate instructional practices or appropriate interventions requires teachers to engage in the process of systematically gathering and analyzing data to inform decisions (Marsh, Pane, & Hamilton, 2006). The use of universal screening assessments and progress monitoring of academic and behavioral indicators during Tier 2 and Tier 3 intervention involve problem-solving and a decision-making system to help design instructional interventions with a high probability of success. The intention is to provide information related to the frequent monitoring of intervention effectiveness and therefore the research indicates that RTI should be based on problem-solving models that use progress monitoring to gauge a student response to an intervention to determine the intensity of the continued intervention and increase the probability of success for the student (Batsche et al., 2005). A recommended structure to support teacher analysis of progress monitoring data is a data analysis team format where teachers meet in grade-level teams to analyze student data, set goals and plan for instructional changes based upon the data (Kovaleski & Glew, 2006). Continued collaboration when implementing instructional changes based upon these decisions and collectively fine-tuning strategies during implementation include group creation of

instructional materials, peer coaching of strategies and demonstration lessons to encourage each other to make systematic changes.

Chapter Summary

School reform efforts in the United States have transitioned from centralized power and authority to more autonomous school-based management and decision making (Murphy, Evertson, & Radnofsky, 1991). As educational leaders implement reform efforts, growing numbers of schools have implemented professional learning communities as means of bringing about improved student outcomes. With a shift in focus from teaching to learning, the PLC process engages school professional staff in a continuous cycle of inquiry, finding answers and acting upon their learning to improve student learning (Hipp & Huffman, 2010). The review of research on professional learning communities bared greatly upon the examination of Hord's five dimensions; shared beliefs, values and vision; shared and supportive leadership; supportive conditions, both structural and relational; collective intentional learning and application; and shared personal practice.

There was consensus throughout the literature review regarding the critical attributes of PLCs and the potential impact the process could bare upon school improvement and student learning. Research concurs that PLCs are being implemented to support teachers in collectively using student data to identify student needs and choose instructional strategies (Thessin & Starr, 2011). The research findings were primarily descriptive of the dimensions and attributes necessary for successful implementation and sustainability of professional learning communities. Research findings related to professional learning communities also included the Professional Teaching and Learning Cycle (PTLC) as a process for creating or strengthening a community of professional learners through the alignment of curriculum,

instruction and assessment (Cowan, 2010). In the review of literature there was little research on the strategic use of data within the PTLC when intervention is necessary for students in need of additional instructional strategies or supports. Rich description described the dimensions and attributes of professional learning communities included references to decision making and sharing of information within the PLC process in order to solve problems and focus on student learning. When the PLC process is used to address the needs of students who need additional supports and interventions, more extensive research could contribute to understanding the different types of data teachers should employ and how to use data within a professional learning community for purposes of measure student responses to interventions.

RTI is a framework for providing high-quality instruction and intervention based upon students' needs that includes the practice of progress monitoring and the use of data to make educational decisions related to instruction, intervention, grouping practices and duration of interventions (Reutebuch, 2008). This is where Response to Intervention is developed into a feasible and replicable process of problem-solving with the use of formative assessment data in schools. The process itself, functioning as PLCs, becomes embedded into the school and the school culture, and the paradigm of collaborative culture shifts from innovation to normal modus operandi. Are schools that are successful at implementing Response to Intervention through the process of developing and sustaining true professional learning communities while using data to implement and monitor effective interventions for students seeing the benefits to their efforts?

Bernhardt (2004), shares that many schools have entire cultures that resist using data at all, and there have been criticisms that states and schools have much more data than they

ever used or used wisely. This overabundance of data may make it difficult for teachers to analyze data and make informed decisions about their students when there is no systematic process for collecting, organizing, analyzing and interpreting large amounts of student information. Bernhardt also states that schools need to be able to evaluate the impact of such processes and if schools are not getting the results they want, they need to consider their processes, or how they are getting their results. If they want different results, they must change the processes that create the results (Bernhardt, 2004). When schools can clearly identify the method or process by which data is used to drive instructional decisions, practitioners are able to understand their own roles in moving a school forward in improvement efforts. Bernhardt also acknowledges that since teachers have the ultimate responsibility for implementing change at the classroom level, their assessment of school and classroom processes is crucial. She also identifies this is a difficult concept for teachers to grasp since they rarely get into their peers' classrooms for this type of collaboration (Bernhardt, 2004).

For schools to use data effectively, practitioners need a process to use data to inform their decision-making in regards to instructional practices and overall school improvement. This process of data-driven decision-making requires teachers to collaborate with their peers to effectively make strides to overall school improvement. Wohlstetter et al. (2008) found that creating a culture of data use was a critical component of an educational leader's efforts in having shared objectives. They also found that educational leaders need to solicit information from school-level educators regarding their needs, strengths and weaknesses to develop school improvement plans around this information while providing incentives for schools to use data in a way that is beneficial to the school system as a whole (Wohlstetter et

al., 2008). This type of leadership conveys the concept that educational leaders focus their work on mobilize and influencing all educators to achieve the school's shared goal, indicating that leadership is not solely an individual endeavor but a collective phenomenon (Park & Datnow, 2009).

Implications for Future Research

Recommendations for future research may include examining the way that school principals frame the use of data for and within professional learning communities. With what significance does the school principals framing of data impact how teachers value data when choosing interventions and supports for students in RTI? Additionally, understanding the use of both academic and behavioral data within the professional learning process to comprehensively address interventions and supports for all students in need. How does the professional learning community process bridge effective use of student data and service delivery of interventions and supports for students who may have deficits in both areas?

CHAPTER 3: METHODOLOGY AND PROCEDURE

Introduction

Chapter Three outlines the methodology associated with this research. The chapter describes the research plan which includes the research design, methods, samples and instruments that were used to collect the data, as well as the data collection methods. The researcher believed that the mixed-methods study was appropriate and yielded information related to the conceptual framework of this study. This chapter details the plan for the mixed method case study conducted on how data are used within the professional learning community process Response to Intervention (RTI). The research design was primarily qualitative, descriptive quantitative data was included to enhance the study. The researcher determined that this approach provided the opportunity to obtain more in-depth and insightful responses to the research questions (Johnson & Onwuegbuzie, 2004).

The overarching goal of this study was to clearly describe the three key constructs of an *Organizational Learning Culture* represented in *Figure 2* to develop best practices for RTI. This included examining data-driven decision making and the professional learning communities process as they relate to Response to Intervention to contribute to student learning. The intention was to increase school principals' and teachers' knowledge of the relationship between data-driven decision making, PLCs and RTI to inform district-level decision makers of needs associated with RTI.

The purpose of this study examined how data are used within the professional learning community process for Response to Intervention. The foundational literature guiding this research included the use of data-driven decision making, Hord's five dimensions of professional learning communities and the Response to Intervention process.

This research model characterized PLCs as the conduit within an Organizational Learning Culture, bridging data-driven decisions and RTI. Serving as the center of the organizational learning culture, the emphasis in PLCs was upon student learning and instructional improvement while including teacher and principal voices (Park, Daly, & Guerra, 2013). For faculty members to make decisions related to Response to Intervention, the researcher investigated how teachers first understanding the significance of *why* changes were needed for student learning or school improvement using data. Additionally, the professional learning community served as the conduit for *how* change occurs, as teachers engage in an iterative process of data-driven decision making and cycles of learning. Ultimately, to address *what* interventions and supports were used through Response to Intervention (RTI). Are they appropriate interventions, based upon data and the needs of the student? How does data-driven decision making influence the PLC process and RTI?

Carney and Stiefel (2008) claim that the problem-solving model of Response to Intervention relies upon the inductive approach, where solutions to instructional problems are determined by evaluating student responsiveness to interventions based upon data related to student performance. It was the interest of the researcher to investigate how data are used within the professional learning community process for Response to Intervention. As DuFour (2004) describes professional learning communities as a framework for transforming schools at all levels, including intervention for students, it was essential to the study to analyze how data-driven decision making within professional learning communities impacted interventions and supports for students in Response to Intervention.

Research Design

The research design chosen for this study was a concurrent nested mixed method, bounded case study.

Qualitative Research Design

Qualitative research involved an interpretive, naturalistic approach to studying subject matter, attempting to make sense of, or interpret phenomena in terms of the meaning people brought to them (Denzin & Lincoln, 1994). The qualitative researcher relied upon the participants of the study to offer in-depth responses to questions about how they have constructed or understood their own experience (Jackson, Drummond, & Camara, 2007). Draper (2004) describes qualitative research as aiming to "describe and explain social phenomena as they occur in their natural setting" (p. 643). Hara (1995) shares that educational research can be complex and that some issues are difficult to address in a quantitative statistical approach, particularly in expressing problems that include human psychology. There are five approaches to qualitative educational research: historical research, grounded theory, phenomenology, ethnography and case study (Johnson & Christensen, 2004).

Bounded Case Study. Case study research is defined by Creswell (2007) as "a qualitative approach in which the investigator explores a bounded system (case) or multiple bounded systems (cases) over time, through detailed in-depth data collection involving multiple sources of information" (p 73). Additional clarity is provided in Yin's definition of the case study research as "an empirical inquiry that investigates a contemporary phenomenon within its real-life context, especially when the boundaries between the phenomenon and context are not clearly evident" (2003, p 13). Case study was chosen as the

approach for this research study. According to Stake, (1997) case studies tell a story about a bounded system, the system being a set of interrelated elements that form an organized whole (Stake, 1997, as cited in Jaeger 1997).

Mixed Methods Methodology

This research study included both qualitative and quantitative measures in order to provide deeper insight into the study. Quantitative research called for the elimination of bias, where researchers remain emotionally unattached and uninvolved with the subjects being studied. Ultimately testing or empirically justifying their hypotheses (Johnson & Onwuegbuzie, 2004). Meanwhile, qualitative purists contended that there are multiple-constructed realities where time and context free generalizations were undesirable and impossible to capture. Johnson and Onwuegbuzie (2004) state that the constructivist or interpretivist paradigm support that research is value-bound making it impossible to fully differentiate between cause and effect (p. 14). The emergence of mixed methods research came about as many researchers determined that quantitative and qualitative research methodologies are compatible (Terrell, 2012). A mixed method research design can provide insight into both personal experiences and perceptions within the context of the study. According to Gall, Gall, and Borg (2007):

> a review of quantitative studies about a particular phenomenon combined with a review of qualitative studies about the same phenomenon can provide richer insights and raise more interesting questions for future research than if only one set of studies is considered. (p. 32)

Concurrent Nested Mixed Methods Design. This study was a concurrent nested mixed method design where quantitative data provided insight to the study through

descriptive statistical data, serving to supplement the predominately qualitative narratives from the interview data. The concurrent nested strategy depicting the relationship between qualitative and quantitative research methods is illustrated in *Figure 3*.

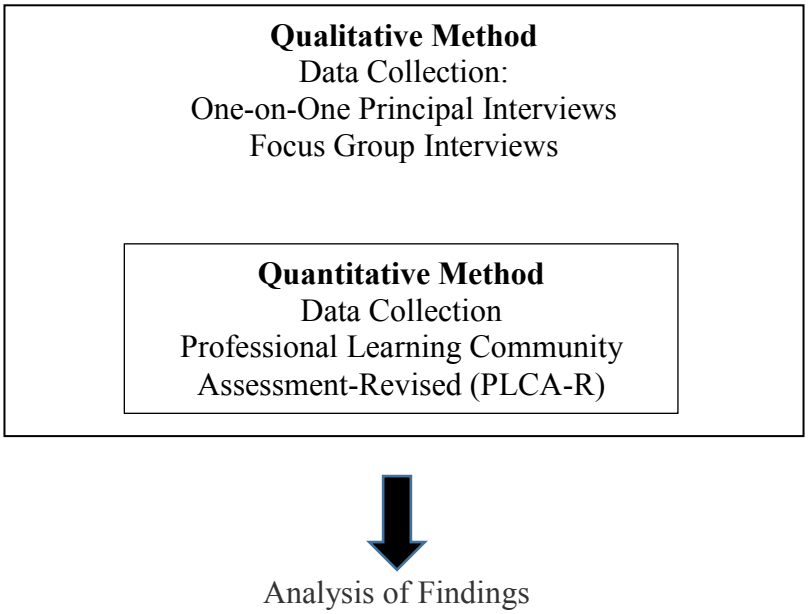


Figure 3. Concurrent Nested Mixed Methods Strategy (Adapted from Terrell, 2012)

The rationale for this mixed methods approach was for the quantitative data to enrich the description of the qualitative component of the study. The researcher collected qualitative and quantitative data concurrently and the quantitative data collected was embedded within the predominately qualitative study. This allowed the researcher a broader perspective as both types of data were mixed during the analysis phase of the study (Terrell, 2012).

The concurrent mixed methods design chosen for this study presented both strengths as well as limitations to the research. Terrell (2012) summarizes the strengths to include the ability to collect both types of data simultaneously, allowing for perspectives from each to be analyzed and providing advantages of both methodologies. Limitations include the need to transform data so that it may be integrated during analysis, requiring a resolution to address

discrepancies between the two data types. Consideration needs to be given that qualitative data collection is given priority as the primary data collection method and may provide unequal evidence when analyzing the findings.

Qualitative Research Questions

This study includes three qualitative research questions.

Question 1. What are faculty perceptions of data-driven decision making for Response to Intervention as measured by principal interviews and teacher focus group interviews?

Question 2. What are faculty perceptions relative to the benefits of collaboration within PLCs when analyzing student data as measured by principal interviews and teacher focus group interviews?

Question 3. How does data-driven decision making within the PLC process impact Response to Intervention (RTI) as measured by principal interviews and teacher focus group interviews?

Sampling. Gall, Gall, and Borg (2007) note that the goal of purposeful sampling is to select a case study that is likely to be "information rich" in respect to the purpose of the study**.** Purposeful samples are intentional or premeditated samples which best inform the researcher about the study (Creswell, 2007). Patton, (1990) describes the process of purposeful sampling as selecting individuals or cases that provide information needed to address a study. Intentional, purposeful sampling was used for this case study.

This study examined the efforts of a small rural school district that is currently rated as an "A" school district by the Louisiana Department of Education (Louisiana Department of Education School & District Report Cards, 2016). Since 1999, the state has issued School

Performance Scores for public schools, which are based on student achievement data. The state of Louisiana adopted letter grades A through F. The schools in the district include a lower elementary school, grades kindergarten through first, and an elementary school, grades two through fifth. Additionally, there is a middle school, grades six through eighth and a high school, grades nine through twelve. There are approximately 2,117 students within this rural school district located in Southeast Louisiana. There are 173 teachers in the school district in addition to principals and ancillary staff who provide instructional support to students.

Procedures for data collection. *Method* refers to the tools, techniques, or procedures used in research to generate data (Kaplan, 1964). Gall, Gall, and Borg (2007) note the use of multiple methods of data collection in case study research enhance the validity of the study. Often in qualitative research, interviewing is used in conjunction with other common methods such as focus groups, or participant observations (Jackson, Drummond & Camara, 2007). The researcher conducts interviews in either a one-on-one setting with participants or in a focus group which may include several participants (Draper, 2004). Focus groups are group interviews that typically involve 5-12 people and rely on the interaction within the group and the questions asked by a moderator to provide insight into a specific topic (Jackson, Drummond & Camara, 2007).

Interviews. Qualitative interviews consisted of open-ended questions that provided qualitative data about a participant's thoughts, beliefs, knowledge reasoning, motivations and feelings about a particular topic (Johnson & Christensen, 2004). For the purpose of this study, these perceptions were captured through one-on-one, semi-structured, open-ended interviews with each principal in the study. According to Patton (1990) an important factor in collecting perceptual data is that the perceptions are "meaningful, knowable, and able to be

made explicit" (p. 278). Four interviews were conducted at each school in the district. These interviews were conducted concurrently with teacher focus group interviews as research data. The principal interview protocol is available for review in Appendix F. There are four school principals within the educational agency, all participated in this study. Each principal interview was scheduled through the district superintendent's office. Each school principal interviewed received an informed consent and permission from principal letter (Appendix C) prior to the interview to sign. They received assurance of confidentiality and the ability to withdraw from the research interview at any time.

Principal interview protocol. The principal interview protocol contained seven semi-structured open ended questions designed to inquire about data-driven decision making in professional learning communities for RTI. These interview questions were adapted from survey questions related to DDDM from the PLCA-R. The interview questions are also adapted from seven items related to data-driven decision making from the PLCA-R that were integrated into the assessment specifically to address data-driven decision making. The developers sought to assess the importance of how data are collected, interpreted and used to focus improvement efforts (Olivier & Hipp, 2010, as cited in Hipp & Huffman, 2010). The questions below was used to pose open-ended questions where the participants could explain the reasons behind their perceptions or experiences.

Research Question 1. What are faculty perceptions of data-driven decision making for Response to Intervention as measured by principal interviews?

Interview Question 1: How do faculty members use multiple sources of data to make decisions about teaching and learning for students who are in RTI? (Shared and Supportive Leadership)

Interview Question 2: How are data organized and made available to provide easy access to staff members for RtI? (Supportive Conditions: Structures)

Research Question 2. What are faculty perceptions relative to the benefits of collaboration within PLCs when analyzing student data as measured by principal interviews?

Interview Question 3: What are the benefits when faculty members collaboratively analyze student work to inform RTI decisions? (Collective Learning and Application)

Interview Question 4: What are some examples to collaboratively analyze multiple sources of data to inform RTI? (Collective Learning and Application)

Interview Question 5: How do staff members support honest and respectful examination of data? (Supportive Conditions: Relationships)

Research Question 3. How does data-driven decision making within the PLC process impact Response to Intervention (RTI) as measured by principal interviews?

Interview Question 6: How are data used to prioritize actions to reach a shared vision for students in RTI? (Shared Values and Vision)

a. How are data used to intervene upon RTI students to reach that vision?

Interview Question 7: In general, how does the regular sharing of student work guide changes in instruction? (Shared Personal Practice)

a. How does the regular sharing of student work guide changes in instruction for students in RTI?

b. How does the faculty use data to drive decisions during progress monitoring to assess the effectiveness of RTI?

Focus groups. In qualitative research, there are a wide array of data collection techniques including interviews which may be conducted individually or on a group basis, such as focus groups (Draper, 2004). A focus group is a group discussion on a topic organized for research purposes (Gill et al., 2008). Qualitative research finds that the interactions between participants stimulates responses that would not be expressed if interviewed individually, such as feelings, perceptions and beliefs (Gall, Gall, & Borg, 2007). Gill et al. (2008) suggest that interaction is key to a successful focus group.

For this study, qualitative data was collected through open-ended questions presented through focus groups at each of the four schools in the school district. The focus group participants consisted of teachers at all grade levels who are involved with instruction and RTI. The focus group participants were posed open-ended questions related to data-driven decision making; collaboration within the PLC process; data-driven decision making within professional learning communities; and data-driven decision making for Response to Intervention. The Focus Group Protocol is available as Appendix G. The focus group data was recorded digitally and then transcribed so that information could be reported accurately.

Teacher Focus Group Protocol. Purposeful sampling was used to construct the focus groups at each of the four schools involved in the qualitative phase of this study. A minimum of one teacher from each grade level was included in each of the four focus groups. The criteria were established and shared with the principal of the school for teacher selection. It was at the principal's discretion to choose the teachers who meet the criteria and assign them to each of the focus groups. The open-ended questions used for the focus groups were adapted from seven items related to data-driven decision making from the PLCA-R that were integrated into the assessment specifically to address data-driven decision making. The

developers sought to assess the importance of how data are collected, interpreted and used to focus improvement efforts (Olivier & Hipp, 2010, as cited in Hipp & Huffman, 2010).

Research Question 1. What are faculty perceptions of data-driven decision making for Response to Intervention as measured by teacher focus group interviews?

Interview Question 1: How do you use data to make decisions about teaching and learning for students in RTI? (Shared and Supportive Leadership)

Interview Question 1a: Do you use multiple sources of data during this process? (Shared and Supportive Leadership)

Interview Question 2: How are data organized and made available for students who are struggling academically? (Supportive Conditions: Structures)

Research Question 2. What are faculty perceptions relative to the benefits of collaboration within PLCs when analyzing student data as measured by teacher focus group interviews?

Interview Question 3: What opportunities exist for you to collaboratively analyze student work to improve teaching and learning? (RQ2: Collective Learning and Application)

a. What are the benefits when faculty members collaboratively analyze student work to inform RTI decisions? (RQ2: Collective Learning and Application)

b. When staff members collaboratively analyze student work to improve teaching and learning, what do you see happening during this time? (RQ2: Collective Learning and Application)

Interview Question 4: How do you support honest and respectful examination of data when you look at it collaboratively? (RQ2: Supportive Conditions: Relationships)

Interview Question 5: What are some examples of how you collaboratively analyze multiple sources of data to assess the effectiveness of RTI? (RQ2: Collective Learning and Application)

Research Question 3. How does data-driven decision making within the PLC process impact Response to Intervention (RTI) as measured by teacher focus group interviews?

Interview Question 6: How are data used to prioritize actions to reach a shared vision for students in RTI? (RQ3: Shared Values and Vision)

a. How are data used to intervene upon RTI students to reach that vision? (RQ3: Shared Values and Vision)

Interview Question 7: How does the regular sharing of student work guide changes in instruction for RTI students? (RQ3: Shared Personal Practice)

a. How does the regular sharing of student work guide overall school improvement? (RQ3: Shared Personal Practice)

Data analysis. A code is a descriptive construct designed by the researcher to capture the primary essence of the data (Petria, 2015). During coding, segments of data are marked with symbols, descriptive words or category names when the researcher finds a meaningful segment of text (Johnson & Christensen, 2004). In this study, qualitative data collected from the one-on-one principal interviews as well as the teacher focus group interviews were categorized into emerging themes. These themes were established from by first coding the descriptive information compiled during data collection.

Principal interviews. Once individual interviews have been conducted and the digital recordings transcribed, the researcher analyzed the data for themes and codes. This process allowed the data from the principal interviews to be quantified for analysis. During the analysis of the interview data, the researcher used a deductive process to categorize common themes and patterns among responses from the four principals interviewed individually. Gall, Gall, and Borg define themes as "salient, characteristic features of a case" (p. 452). The researcher then analyzed the data across all questions, comparing responses from all four principals for common themes and patterns in responses to capture perceptions of data use within the PLC process for Response to Intervention.

Teacher focus group interviews. The focus group interviews were conducted at each of the four schools in the district. Each focus group consisted of six to eight participants, all receiving a letter of informed consent and permission for participation (Appendix F). All participants received assurance of confidentiality and the ability to withdraw from the research focus group interviews at any time during the study. The focus group interviews were conducted at each of the four schools in the district. The focus group interviews were digitally recorded and later transcribed. The researcher followed the interview protocol (Appendix G) during the focus group interviews.

Once each teacher focus group interview was conducted at all four schools and the digital recordings transcribed, the researcher analyzed the data for themes and codes. This process allowed the data from the teacher focus group interviews to be quantified for analysis. During the analysis of the interview data, the researcher used a deductive process to categorize common themes and patterns among responses from the four teacher focus groups interviews individually. The researcher analyzed the data across all questions, comparing

responses from all four focus group interviews for common themes and patterns in responses to capture perceptions of data use within the PLC process for Response to Intervention.

Quantitative Research Design

The quantitative component of this study examined the experiences and perceptions of faculty currently involved in the PLC process. The conceptual model of an organizational learning culture, identifies professional learning communities as the conduit within an Organizational Learning Culture, bridging data-driven decisions and RTI. The Professional Learning Community Assessment-Revised (PLCA-R) was used to determine these perceptions. The PLCA-R (Appendix H) assesses everyday classroom and school-level practices in relation to Hord's five PLC dimensions (Olivier, Hipp, & Huffman, 2010). Descriptive statistics was used to explore teacher perceptions of the five dimensions of professional learning communities using the PCLA-R. This study also examined the correlation between the PLC dimensions as well as seven survey items related to data-driven decision making from the PLCA-R that were integrated into the assessment specifically to address data-driven decision making. The developers sought to assess the importance of how data are collected, interpreted and used to focus improvement efforts (Olivier & Hipp, 2010, as cited in Hipp & Huffman, 2010).

Quantitative research is dependent upon the collection and analysis of numerical data to describe, explain, predict, or control phenomena of interest (Gay, Mills, &Airasian, 2012). It is dependent upon the collection of numerical data and focuses upon the deductive component of the scientific method with hypothesis testing (Johnson & Christensen, 2004). Quantitative descriptive statistical methods and a series of bivariate correlations was used to address the following research questions that guide the quantitative portion of this study.

Research Question 4 - Quantitative: What are faculty perceptions of Professional Learning Communities as measured by the PLCA-R?

Research Question 5 - Quantitative: What are faculty perceptions of specific PLCA-R survey items related to DDDM? (7 item composite score)

Research Question 6 (*Quantitative)*: Is there a correlation between PLCA-R dimensions?

Hypothesis. A statistically significant relationship does not exist between the dimensions of professional learning communities as measured by the PLCA-R?

Research Question 7 (Quantitative) Is there a correlation between specific PLCA-R survey items related to data and PLCA-R dimensions?

Hypothesis. A statistically significant relationship does not exist between the data scale and the dimensions of professional learning communities as measured by the PLCA-R.

Hypothesis: There is no statistically significant correlation between PLCs and the use of data to inform decision-making.

The purpose of the study examined how data are used within the professional learning community process for Response to Intervention. This quantitative research provided evidence to assist the researcher in exploring the conceptual model of an organizational learning culture, focusing upon the function of teachers and schools in the study within their professional learning communities. Additionally, the researcher focused upon specific assessment survey questions from the PLCA-R to take a more in-depth evaluation of the participants use of data within their PLCs.

This study included a descriptive quantitative research design. According to Gall, Gall, and Borg (2007), educators must first generate an accurate description of a phenomena as it exists or else they lack a firm basis for changing it. The researcher used the data captured from the PLCA-R assessment to carefully describe the function of professional learning communities within this educational agency and to give insight into how data are used within the professional learning communities.

Survey research design. Survey design was selected for the quantitative portion of this study to assist with data collection on multiple variables from the sample population in the study. Survey research included collecting data from a sample that will be representative of a population when analyzing the findings (Gall, Gall, & Borg, 2007). One advantage of using surveys in research is the ability to generalize the results to the population that the sample was obtained from (Babbie, 1990). A disadvantage of survey questionnaires is that they cannot probe deeply into participants' beliefs, inner experiences or attitudes (Gall, Gall, & Borg, 2007).

Quantitative sampling. For this survey research, nonrandom convenience sampling was used to suit the purpose of the study. All teachers and school principals meet the criteria to participate in the PLCA-R which measured how participants' express perceptions related to professional learning communities. The researcher conducted the study within a local education agency in a rural parish in south-eastern Louisiana. The school district is comprised of a lower elementary school (PreK-1st Grade), an elementary school (2nd-5th grades), a middle school (6th-8th grades) and a high school (9th-12th grades). Participants in the quantitative portion of this study included all 173 teachers within the school district along

with all school principals, assistant principals, counselors, and any additional staff directly associated with curriculum, instruction and assessment of students.

Data collection. Prior to collecting research data, approval was obtained from the University of Louisiana at Lafayette, the University of Louisiana at Lafayette Institutional Review Board, the superintendent of the school district was involved in the study, school principals and teacher respondents, respectively. The researcher shared findings from the study with the school district superintendent and his central office staff. The quantitative data was collected using the Professional Learning Community Assessment-Revised (PLCA-R) survey. In this mixed-method design of the research plan, the quantitative method served as a supplement to the qualitative method. The researcher supported the findings from the qualitative component of the study with the results from this survey. The survey was administered during the time of the interviews and analyzed after the qualitative portion was conducted.

The quantitative data collected in this study were district-wide administration of the Professional Learning Community Assessment-Revised (Olivier, Hipp, & Huffman, 2010). It was administered in April of 2016 at all four schools in the local education agency. All teachers, school principals and any additional staff directly associated with curriculum, instruction or assessment of students participated in the survey. The information collected from the Professional Learning Community Assessment-Revised served as the final data source in the quantitative method of this study.

Participation throughout the school district was voluntary and all surveys were completed using an electronic online version of the PLCA-R from The Southwest Educational Developmental Laboratory (SEDL). The researcher believed this allowed survey

participants to complete the assessment survey honestly, and to express their individual perceptions related to professional learning community attributes at their respective schools. The electronic online administration of the survey allowed all participants to respond privately and anonymously, reducing the risk of fear of retaliation from school or district administrators. This method of administration also eliminated the potential for administrators to influence a respondent.

Instrumentation. The Professional Learning Community Assessment-Revised served as the instrument for data collection in the quantitative method of this study. The original assessment, the Professional Learning Community Assessment (PLCA) was created to assess everyday classroom and school-level practice of Hord's five dimensions of professional learning communities (Olivier, Hipp, & Huffman, 2003). Hord and Hirsh (2008) asserted that:

staff learning precedes student learning, and its focus derives from the study of both student and staff data that reveal specific needs. Thus, the staff engages in intentional and collegial learning aligned with needs and goals determined by data (p. 29).

The revised version of the assessment in 2010, Professional Learning Community Assessment-Revised (PLCA-R) integrated specific items addressing data as the developers of the assessment determined the importance of assessing how data are collected, interpreted and used to focus improvement efforts (Olivier & Hipp, 2010, as cited in Hipp & Huffman, 2010). The researcher chose the PLCA-R as part of this research study to examine how participants' express perceptions related to professional learning communities with an emphasis upon the survey items added in the revised assessment that address the use of data.

The PLCA-R is a 52-item survey that assesses the perceptions of individuals based upon five dimensions of a professional learning community. The questionnaire contained several statements about practices that occur in schools, each were categorized into the dimensions of (1) Shared and Supportive Leadership, (2) Shared Values and Vision, (3) Collective Learning and Application, (4) Shared Personal Practice, (5) Supportive Conditions: Relationships-Structures. The assessment used a four point likert scale for participants to select a scale point that best reflects their personal agreement with each statement. The scale ranges from 1 equals Strongly Disagree, 2 equals Disagree, 3 equals Agree, and 4 equals Strongly Agree.

The 52 statements were categorized into the five dimensions of professional learning communities and tested for internal validity. This included feedback from an expert panel of educators, where each statement was analyzed and feedback was provided, the panel rated each statements importance as high, medium, or low. The statements were validated and field testing provided evidence of construct validity (Olivier, 2003, as cited in Huffman & Hipp, 2003). Individual perceptions were collected through 247 completed surveys. The final segment verified construct validity and internal consistency included a factor analysis. The results of the factor analysis resulted in the following Cronback Alpha reliability coefficients for factored subscales for each of the five dimensions: Shared and Supportive Leadership (.94); Shared Values and Vision (.92); Collective Learning and Application (.91); Shared Personal Practice (.87); Supportive Conditions-Relationships (.82); Supportive Conditions-Structures (.88); One-factor Solution (.97) (Olivier & Hipp, 2010, as cited in Hipp & Huffman, 2010).

Procedures for data analysis. Data for this quantitative segment of the study was from the administration of the PLCA-R. All faculty members of the school district completed survey using an electronic online version of the PLCA-R form, The Southwest Educational Developmental Laboratory (SEDL). This platform allowed for easy data collection and analysis.

Descriptive statistics. Descriptive statistics describe, summarize or make sense of a data set when addressing research questions (Johnson & Christensen, 2004). These statistics allow the researcher to measure variability of mean scores or other measures of central tendency (Gall, Gall, & Borg, 2007). In the quantitative segment of this study, the researcher used descriptive statistics to examine the data in various ways. Initially, the data was used to evaluate the number of responses for each school participating in the PLCA-R. Frequency data allowed the researcher to summarize each of the 52 survey items, and allowed for the identification of any errors or mistakes that may have occurred during data collection. Descriptive statistics also allowed the researcher to compare responses by each school, by dimension allowing for more in-depth analysis by grade bands within the district, Kindergarten through first grade responses, second through fifth grade responses, sixth through eighth grade responses and high school responses. This allowed the researcher to analyze the findings and examine professional learning community practices within each school and grade level. Descriptive statistics allowed for the researcher to provide and study the mean and standard deviation of the surveys collected by item and dimension (sub-scale). Descriptive statistics also included data on levels of central tendency, dispersion and symmetry. Skewness revealed concentrations of data at both high and low ends of a subscale while kurtosis described any concentrations of frequency distribution. Finally, the researcher

analyzed an additional subscale created for an in-depth review of specific PLCA-R survey items related to data. This allowed the researcher to compare a data subscale to the dimensions and analyze those findings as part of this study. The researcher compared this new subscale to share findings related to data-driven decision making and professional learning communities.

Correlational analysis. Correlational statistics are often used to describe the relationship between two or more variables in a study (Gall, Gall, & Borg, 2007). In this study the researcher analyzed the data from the PLCA-R to examine the relationship among each dimension of Hord's five dimensions; shared and supportive leadership; shared beliefs, values and vision; collective intentional learning and application; shared personal practice and supportive conditions, both structural and relational; Additionally, the researcher created an additional subscale to examine the data for a correlation between specific PLCA-R survey items related to data and the existing PLC dimensions. Correlational procedures were used to study the relationship of these dimensions as two continuous independent variables.

Study Procedures

Qualitative data collection was collected through interviews with school principals and focus groups with teachers at each school in the district. Interviews were conducted with individual principals at each of the district's four schools. Focus groups were assembled at each of the four schools, consisting of eight participants in each focus group. Confidentiality was maintained during the analysis of qualitative responses.

Quantitative data collection was conducted through quantitative analysis of responses from the Professional Learning Community Assessment-Revised (PLCA-R). Data was collected from all schools within the school district. Participants included all school teachers,

school principals, assistant principals, counselors, and any additional staff directly associated with curriculum, instruction and assessment of students. Data was collected during the month of May, 2016. Participation throughout the school district was voluntary and all surveys were completed using an electronic online platform.

Procedures: Ethical Considerations and Data Collection Methods

Following IRB approval, the researcher received permission from the Superintendent of the school district to proceed with the research study. The researcher submitted a request to the Superintendent requesting to conduct the research project (Appendix A). This gave the Superintendent an initial overview of the research plan. The superintendent consented to the research study and received an informed consent and permission letter (Appendix B). The intent of this letter was to make the superintendent aware of the research study, to address confidentiality issues, explain how the researcher was as least invasive as possible, disturbing the educational process, as little as possible and finally explaining how participants had the ability to withdraw from the study at any time. The informed consent and permission letter were signed by the superintendent, the researcher proceeded with the study and observed the following procedures for data collection:

- Each school principal interviewed received an informed consent and permission from principal letter (Appendix C) prior to the interview to sign. They received assurance of confidentiality and the ability to withdraw from the research interview at any time.
- Each focus group consisted of six to eight participants, all receiving a letter of informed consent and permission for participation (Appendix F). All participants received assurance of confidentiality and the ability to

withdraw from the research focus group interviews at any time during the study.

Summary of Research Methodology

Mixed methods researchers believe that this type of research can produce a study that is superior to one produced by quantitative or qualitative design alone (Johnson & Christensen, 2004).

In this study, the researcher combined narrative and numerical data collected concurrently to better examine how data are used within the professional learning community process for Response to Intervention. The study explored the personal experiences and perceptions of the participants, teachers and school principals.

The researcher determined that this mixed method research design was an appropriate method for addressing the proposed research questions and hypothesis for this study. According to Creswell, 2014, "When an investigator combines both quantitative data along with personal experiences (qualitative data), there is a better understanding of the research problem than either form of data alone (p. 2)."

Table 2

Research Questions, Methodology Measures, and Data Analysis

Research Question	**Methodology**	**Measures**	**Analysis**
RQ1: What are faculty perceptions of data-driven decision making for Response to Intervention as measured by principal interviews and teacher focus group interviews?	Qualitative	Interviews Focus Group	Thematic Coding
RQ2: What are faculty perceptions relative to the benefits of collaboration within PLCs when analyzing student data as measured by principal interviews and teacher focus group interviews??	Qualitative	Interviews Focus Groups	Thematic Coding
RQ3: How does data-driven decision making within the PLC process impact Response to Intervention (RTI)?	Qualitative	Interviews Focus Groups	Thematic Coding
RQ4: What are faculty perceptions of Professional Learning Communities as measured by the PLCA-R?	Quantitative	PLCA-R	Descriptive Statistics Correlations
RQ5: What are faculty perceptions of specific PLCA-R survey items related to DDDM? (7 item composite score)	Quantitative	PLCA-R	Descriptive Statistics
RQ6: Is there a correlation between PLCA-R dimensions? Hypothesis. A statistically significant relationship does not exist between the dimensions of professional learning communities as measured by the PLCA-R.	Quantitative	PLCA-R	Correlation
RQ7: Is there a correlation between specific PLCA-R survey items related to data and PLCA-R dimensions? Hypothesis**:** A statistically significant relationship does not exist between the data scale and the dimensions of professional learning communities as measured by the PLCA-R.	Quantitative	PLCA-R	Correlation

In the qualitative component of this study, the researcher focused upon two sources of data to understand the personal perceptions of individuals involved in professional learning communities. Focus groups at each school as well as interviews with the principals from all four schools served to better understand the data-driven decision making in professional learning communities for RTI. The researcher sought to understand how these processes are aligned through the interviews and focus groups. Additionally, information from the interviews and focus groups assisted the researcher in understanding perceptions of data-driven decision making in professional learning communities for RTI.

In addition to the qualitative data, the study analyzed quantitative data collected through the administration of the Professional Learning Community Assessment-Revised (PLCA-R). Descriptive statistics allowed for the researcher to provide and study the mean and standard deviation of the surveys collected by item and dimension (sub-scale). Descriptive statistics also included data on levels of central tendency, dispersion and symmetry. Skewness revealed concentrations of data at both high and low ends of a subscale while kurtosis described any concentrations of frequency distribution. Finally, the researcher analyzed an additional subscale created for an in-depth review of specific PLCA-R survey items related to data. This allowed the researcher to compare a data subscale to the dimensions and analyze those findings as part of this study. The researcher compared this new subscale to share findings related to data-driven decision making and professional learning communities. In this study the researcher analyzed the data from the PLCA-R to examine the relationship among each dimension of Hord's five dimensions; shared and supportive leadership; shared beliefs, values and vision; collective intentional learning and application; shared personal practice and supportive conditions, both structural and

relational; Additionally, the researcher created an additional subscale to examine the data for a correlation between specific PLCA-R survey items related to data and the existing PLC dimensions. Correlational procedures were used to study the relationship of these dimensions as two continuous independent variables. The study also examined descriptive statistics and variance related to the PLCA-R quantitative data.

The researcher examined how data are used within the professional learning community process for RTI. This mixed method research design examined data use, professional learning communities and intervention through the collection and analysis of experience and perception data. The research is to contribute to the bodies of research in these areas and to determine how an organizational learning culture contributes to meaningful use of data in professional learning communities to intervene and help students improve.

The mixed-method research design chosen for this study, allowed the researcher to establish a primary source of qualitative data, collected through interviews and focus groups. Additionally, a secondary source of data was collected quantitatively to support the research in this study. Both data sets, qualitative and quantitative, assisted the researcher in answering the proposed research questions and hypothesis. The qualitative component of this study provided data based upon the personal perceptions of experiences of individuals and the quantitative data collected was used to support or reject any of the qualitative data findings.

The qualitative aspect of this study included interview data collected from two sources. First, principal interview data was collected at all four schools within the district using the interview protocol identified in this methodology. Additional interview data was collected from focus groups organized at each of the four schools in the district. These focus

groups were organized based upon criteria established by the district and eight teachers were chosen at each of the four schools chosen by the district superintendent.

In addition to the qualitative component of this study, the researcher used results from the PLCA-R collected from the faculty within the school district. Descriptive statistics expressed general tendencies in the data, including mean and standard deviation for items and dimensions. The researcher also analyzed the PLCA-R data to identify correlations between PLC dimensions as well as between the data subscale and the dimensions of professional learning communities. This allowed the researcher to investigate data-driven decision making in professional learning communities for RTI and look for a correlation between the data construct and each dimension of professional learning communities, as measured by the Professional Learning Community Assessment Revised.

The researcher examined how data are used within the professional learning community process for Response to Intervention (RTI).

Chapter Summary

This chapter provided an in-depth description of the research design proposed for this study. The research questions along with a rationale for each are included in the qualitative and quantitative sections respectively. Also, included in this chapter are sampling design, data collection measures and procedures, as well as data collection procedures for both the qualitative and quantitative segments of this study. The chapter concludes with ethical considerations and a summary of the research methodology.

CHAPTER 4: DATA ANALYSIS

Chapter Four presents the analysis of the qualitative and quantitative data associated with this concurrent nested mixed method, bounded case study. The research design of this study was primarily qualitative. In-depth and insightful responses were collected from individual and focus group interviews. The quantitative data are comprised of the SPSS results from the researcher's data base. The information collected by the researcher was gathered using the Professional Learning Community Assessment-Revised PLCA-R (Olivier, Hipp & Huffman, 2010). Data collection by the researcher was conducted during the spring semester of the 2015-2016 school year. Quantitative data provided insight to the study through descriptive statistical analysis, serving to supplement the predominately qualitative narratives from the interview and focus group data.

Introduction

The way teachers use data within the PLC process impacts how interventions and supports are systematically applied to students based upon their level of need (Simonsen, Sugai, & Negron, 2008). A study examining the use of data within professional learning communities for RTI will serve educational leaders and teaching practitioners in the field. Additionally, the significance of this study is to assist local and state educational agencies with addressing new achievement standards that require tremendous amounts of data collection, analysis and application to meet proficiency. Finally, the research is intended to add to the literature base regarding the three crucial constructs of this study which include understanding (1) Data-driven Decision Making (DDDM), (2) Professional Learning Communities (PLCs), and (3) Response to Intervention (RTI). According to Marsh, Pane, and Hamilton (2006), data-driven decisions may become misinformation or lead to invalid

inferences without high quality data and technical assistance. Professional Learning Communities allow teachers to work together, engaging in continuous dialogue to examine student performance to development and implementation of more effective instruction (Darling-Hammond & Richardson, 2009). The examination of student performance data allows teachers to determine which students are in need of intervention or additional support through RTI. The core principle of Response to Intervention is to offer a range of interventions that are systematically applied to students based upon their demonstrated level of need (Simonsen, Sugai, & Negron, 2008). The purpose of this study, as stated in previous chapters, is to examine how data are used within the professional learning community process for Response to Intervention. These three key constructs are the focus of this study and contribute to the development of the research questions guiding the study. Data collection for this research was collected both qualitatively and quantitatively.

Qualitative Data Analysis

Qualitative data were collected through the responses of individual and focus group interviews. The conceptual model presented in Chapter 1, an *Organizational Learning Culture* guided the development of overarching research questions specifically for the qualitative component of this research related to data-driven decision making, professional learning communities and RTI.

> Research Question 1. (Data-Driven Decision Making) What are faculty perceptions of data-driven decision making for Response to Intervention as measured by principal interviews and teacher focus group interviews?

Research Question 2. (Professional Learning Communities) What are faculty perceptions relative to the benefits of collaboration within PLCs when analyzing student data as measured by principal interviews and teacher focus group interviews?

Research Question 3. (Response to Intervention) How does data-driven decision making within the PLC process impact Response to Intervention (RTI) as measured by principal interviews and teacher focus group interviews?

Principal Interviews

This bounded case study is predominately qualitative, with the identified research questions guiding this segment of the study. Data for this section of the study were gathered from individual principal interviews with each of the district's four school administrators. Each school administrator signed an informed consent letter (see Appendix E), and were interviewed using the interview protocol described in Chapter Three. Each interview was recorded and archived by the researcher. When administrative responses to the protocol questions required clarification or in-depth explanation, the researcher asked questions not in the protocol. These questions were supplements to the interview to yield a more detailed understanding of the respondent's experience. Each interview began with a common opening question to gather information from each administrator regarding general perception of Response to Intervention within their respective schools. Each principal was asked to *Share with me what RTI looks like at your school and how it works.* The interview protocol then guided the researcher's data collection with questions related to the three research questions. Each interview then closed with an opportunity for the respondents to add comments thought to be of significance related to data-driven decision making, PLCs or Response to Intervention.

Following the principal interviews, each digital recording was transcribed and returned to the participant for review. The transcribed interviews were then coded and analyzed for thematic development. Thematic analysis was chosen for the study as it is a widely used analytic method in qualitative analysis of interview data (Braun & Clarke, 2006). The steps in the analysis of the principal interview data included (1) reading through the transcripts of the interviews (2) coding and classifying the text (3) identifying emerging themes (4) correlating themes to the study's research questions (5) and formulating a narrative. During coding, segments of data were marked with symbols, descriptive words or category names, where the researcher found meaningful segments of text (Johnson & Christensen, 2004). The researcher chose thematic coding as the method for analysis in this study in order to produce an insightful analysis focused on the research questions related to the conceptual model of an *Organizational Learning Culture.*

The researcher's principal interview protocol was designed to address the three constructs of the conceptual model identified for this study:

- RQ1: Data-Driven Decision Making
    - Interview Question 1-2
- RQ2: Professional Learning Communities (PLCs)
    - Interview Question 3-5
- RQ3: Response to Intervention (RTI)
    - Interview Questions 6-7

When the interview data was analyzed, themes emerged from the data. Table 3 summarizes the themes that emerged, aligned to the research questions and conceptual model. When

themes were established, each interview recording was reviewed and themes were verified as part of the analysis.

Table 3

Principal Interview Themes

Research Question & Category	***Themes***
Research Question 1**. (Data-Driven Decision Making)** What are faculty perceptions of data-driven decision making for Response to Intervention as measured by principal interviews?	Use of multiple levels of summative and formative assessment data to inform decision-making for RTI Methods for sharing data through instructional support personnel in PLCs exist
Research Question 2. **(Professional Learning Communities)** What are faculty perceptions relative to the benefits of collaboration within PLCs when analyzing student data as measured by principal interviews?	Opportunities to engage in rich discussion related to student work exist Value in sharing ideas and strategies to determine what should come next in the learning for students exists There are strong relationships in PLCs where an openness to improvement exists
Research Question 3. **(Response to Intervention)** How does data-driven decision making within the PLC process impact Response to Intervention (RTI) as measured by principal interviews?	Teachers engage in an iterative data process that drives instructional decisions for RTI Teachers review student work to identify weaknesses and determine intervention Progress monitoring challenges exist in RTI

Demographics. The schools in the district include a lower elementary school, grades kindergarten through first, and an elementary school, grades second through fifth. Additionally, there is a middle school, grades sixth through eighth and a high school, ninth through twelve. The school principals were included in this study as the instructional leaders of each school. The four participants in the principal interviews include three school principals and one school assistant principal. At the time of the study the high school principal transitioned from principal to a central office supervisor so the assistant principal was interviewed as the instructional leader of the school. Although in her first year as an assistant principal, the administrator interviewed previously served in a leadership role as the literacy integration specialist the previous three years. All four participants are certified in administration and their instructional leadership varies from less than one year to ten years in administration. All instructional leaders are involved in the processes of data-driven decision making, professional learning communities and RTI within their schools. The lower elementary school principal is a female administrator with ten years of experience in administration. The responses from this interview are identified and referenced as school one (S1). The second through fifth grade elementary principal is a female administrator with seven years in administration. The responses from this interview are identified and referenced as school two (S2). The middle school principal is a female administrator with nine years of experience in administration. The responses from this interview are identified and referenced as school three (S3). The high school administrator is a female administrator in her first year as an assistant principal and fourth year in an administrative role. The responses from this interview are identified and referenced as school four (S4).

Results pertinent to research questions. Each research question is associated with a specific construct of the conceptual model of an *Organizational Learning Culture:*

- RQ1: Data-Driven Decision Making
- RQ2: Professional Learning Communities (PLCs)
- RQ3: Response to Intervention (RTI)

Each interview question in the principal interview protocol is associated with a specific research question, a construct of the conceptual framework and a dimension of Professional Learning Communities as identified in Chapter 3. While the researcher attempted to isolate meaning for each research question during analysis, significant crossover did occur between research questions.

Opening question. Each interview began with a common opening question to gather general information from each administrator related to perceptions of Response to Intervention within their perspective schools. The researcher began each interview asking principals to *Share with me what RTI looks like at your school and how it works.* This was intended to garner broad themes related to RTI before asking specific questions related to the research questions identified for this study. According to Glover and DiPerna, RTI has the intention of guiding decision-making about school based service delivery; not only serving to identify at-risk students or students with specific disabilities, but as a utility for determining responsiveness to instruction and guiding service delivery for students in need of additional support or interventions (2007). Posing this question at the start of each principal interview allowed the respondents to answer openly about the RTI process in their respective schools, allowing the researcher to capture perceptions related to RTI as a utility for determining responsiveness to instruction and how it guides service delivery at each of the four schools.

The findings from this opening question have been analyzed for common themes, coded and are interpreted for meaning related to this study in the following section.

Qualitative analysis of opening question. RTI is strongly guided by outcome data to make accurate decisions about the early identification of students with academic or behavioral problems as well to monitor the effectiveness of general and remedial instruction or intervention (Batsche et al., 2005). Interviews began with an open question where school administrators were asked to *share what RTI looks like at your school and how it works.* Commonalities among all principals interviewed include outcome data being used to make decisions about the effectiveness of both general instruction and intervention. Each instructional leader described the RTI process as teachers looking at student work and student assessment data to both plan for instruction as well as to intervene when students struggle. The lower elementary school (S1) principal shared how faculty members use data to form intervention groups while the elementary principal (S2) described this part of the RTI process as a method for determining either enrichment or intervention for all students based upon a specific need or deficit. The RTI model is designed as a three-tier model of service delivery, where this initial tier, Tier One, provides class level or school-wide instruction to all students and is referred to as primary prevention (Batsche et al., 2005). Principal two (S2) describes what she referred to as P*rime Time* as one level of intervention here:

> We have what we call *Prime Time* which is 30 minutes every single day and every kid goes to it, high, medium or low functioning kids. If a kid is struggling in fluency they go to fluency, if a kid is struggling in comprehension they go to comprehension. So, everybody gets their Tier 1 and everyone gets Tier 3 if they need it.

Her description of *Prime Time* describes how the data are used to determine intervention and enrichment however the principal's perception of the process included a need to improve upon providing Tier 2 interventions. She described *Prime Time* as Tier 3 intervention however Tier 2 interventions are designed to be short and targeted to address specific deficits in skill or ability of students, where service delivery is intended to be in small groups with sufficient duration and frequency to be effective. Tier 3 intervention is described as requiring highly individualized instruction or support for students who are unresponsive to primary (Tier 1) and secondary (Tier 2) interventions (Sugai & Horner, 2006). The need for progress monitoring of student data to make decisions about intensity and duration of interventions (determining tiers of support needed) for student improvement requires increased adult attention and monitoring (Sugai & Horner, 2006).

Principals at the middle (S3) and high school (S4) also described RTI as including a process for reviewing student data to make decisions about instruction and intervention. The middle school principal (S3) described how teachers look at student work to determine a program for students needing intervention. During the interview there was no reference to different levels of support. The high school principal (S4) described school-wide use of a learning management system to collect and analyze student data. Like school two, the high school teachers used this information to assign students to a B*oost* period:

> We use it and it pretty much does the data for us on any kind of multiple choice test. We go through it and it immediately tells us how many students missed that question, what answers they chose, how many students chose that answer so we can identify pretty quickly with those types of assessments where the problems are. In our PLCs,

> we go through it question by question to see what the problems are and who needs the help.

The high school principal continued to describe the learning management system as a means for fast and frequent analysis of student data to determine who needs the B*oost* period. Students who are struggling with a concept, lack a skill or miss too much content can be recommended by their teacher for *Boost*. It is offered one hour per week and teachers work with students in small groups or individually based upon data from quizzes, informal assessment and unit assessment data collected and analyzed through the learning management system. Mellard and Johnson (as cited in Johnson, Carter, & Pool, 2013) state that Tier 2 interventions are designed to be short and targeted to address specific deficits in skill or ability of students, therefore service delivery is intended to be in small groups with sufficient duration and frequency to be effective. The *Boost* period described by the principal meets definition of small group or individualized intervention however the frequency and duration of *Boost* as well as the precision of measurement used to progress monitor during intervention were not addressed.

One commonality among the elementary and high school principal interviews is a lack of distinction between Tier 2 and Tier 3 intervention. According to Reschly (2005), levels of support or intervention are distinguished by the level of intensity and the precision of measurement used during progress monitoring at each level. Academically, individual diagnostic assessments should be used to monitor instructional interventions to determine specific patterns of skills that a student has or does not have to guide decision-making for effective instruction to remediate an academic deficit and increase an individual student's rate of progress (Batsche et al., 2005).

Research Question 1. What are faculty perceptions of data-driven decision making for Response to Intervention as measured by principal interviews?

Research question 1 seeks to identify school principal perceptions of data-driven decision making related to Response to Intervention. Research suggests that the effective use of data to support positive outcomes for both educators and students requires the ability to build capacity for those educators to effectively access, understand and apply data (Campbell & Levin, 2009). Reliance on administrators for decision-making hinders the ability of teachers to assume roles which foster shared leadership (Leech & Fulton, 2008). The questions posed in the principal interview protocol to address research question one were aligned to survey items from the PLCA-R. The following questions were included in the principal interview protocol and focus upon the respective PLC dimensions:

> Interview Question 1: How do Staff members use multiple sources of data to make decisions about teaching and learning for students who are performing below expectations? (Shared and Supportive Leadership)
>
> Interview Question 2: How are data organized and made available to provide easy access to staff members for students who are struggling academically? (Supportive Conditions: Structures)

Qualitative analysis of Research Question 1. A commonly expressed element among principals was that multiple sources of data are made available to teachers for instruction and intervention. Research supports the use of multiple levels of student achievement data to guide decision making when determining policies, programs and practices that best meet the needs of all students. This includes practices such as the evaluation of progress toward state and district standards, monitoring student performance

and judging the efficacy of local curriculum and instructional practices (Wohlstetter et al., 2008). A common thought shared by all principals interviewed describes the use of multiple sources of student data for decision-making. All administrators, grades second through twelfth, identified lexile levels as a data source reviewed by teachers at the beginning and throughout the school year for screening, progress monitoring and guiding instruction for all students throughout the year. Monitoring student lexile levels allows teachers to measure a student's reading ability level as well as determine frustration levels with text complexity. The high school principal (S4) noted:

> At the beginning of the year we provide all teachers with a spread sheet with all their student data from standardized tests from sixth grade up. They are all given their lexile levels, their reading levels. They use the lexile level to resort back, for example if a student is not doing well in science, they refer to the lexile level and determine if it is a reading problem or a content problem or is it both?

The principal also noted that these data records are very important and are referred to by teachers throughout the school year and often "affirm your observations and instincts." (S4)

Additionally, all four principals indicated that summative data from the annual state assessment LEAP, are used to plan and make instructional decisions each school year. Students in grades 3 through 8 take LEAP assessments in English Language Arts, mathematics, science, and social studies. These assessments are aligned to the Louisiana Student Standards (Louisiana Department of Education, 2017). Through the interviews conducted, additional sources of data at all schools included weekly or unit assessments for both reading and math for progress monitoring. Response to Intervention requires frequent progress monitoring in order to make decisions about changes in instruction and apply

student response data to those decisions (Elliott, 2008). All administrators interviewed indicated that professional learning communities are used to share multiple sources of data with teachers and to make instructional decisions for all students.

The principals at the lower elementary (S1) and elementary (S2) describe the use of The Dynamic Indicators of Basic Early Literacy Skills (DIBELS), a set of measures to assess the acquisition of early literacy skills. These measures are designed for kindergarten through sixth grade and are used in grades kindergarten through fifth grade in this school district. The elementary principal (S2) shared how the reading interventionist shares DIBELS data to assist teachers with monitoring student progress. The lower elementary principal (S1) echoed this, sharing how the reading interventionist assist in preparing reports for teachers to review during professional learning communities:

> I have them look at the tests when we meet in PLCs, then we look at the strategies and if one teacher exceeds, has more students making high gains, then we share what that teacher did, what strategy they used to move those kids forward.

Systematically monitoring student progress and making decisions about instructional needs for students within the RTI process are critical when considering service delivery to ensure that those students in need are matched with appropriate services (Glover & Diperna, 2007). Summative standardized test, lexile levels and weekly or unit assessments are sources of data used at all schools in the district. The consensus among all principals interviewed identifies that teachers review data during PLCs and on their own to make decisions about both instruction and intervention.

To address this research question, principals were also asked how data are organized and made available to provide easy access to staff members. There was consensus among all

four principals interviewed that as instructional leadership, the school principals along with reading interventionist (S1), instructional coach (S2) literacy interventionist (S3) and literacy specialist (S4) organize student data for teachers and share this information in PLCs. The principal at the elementary (S2) school shared:

> Jodi is awesome and if you need an official title she is our instructional coach. She is great at pulling data like Ten Marks and STAR. So, she presents that in PLCs and in school-wide faculty meetings or staff development days.

Research suggests that the effective use of data to support positive outcomes for both educators and students requires the ability to build capacity for those educators to effectively access, understand and apply data (Campbell & Levin, 2009). Consistent among all four schools, principals indicate that professional learning communities serve for teachers to access both summative or historical data and formative data assessed through weekly, unit or benchmark testing.

Research Question 2. What are faculty perceptions relative to the benefits of collaboration within PLCs when analyzing student data as measured by principal interviews?

Research Question 2 seeks to identify principal perceptions of PLCs and collaboration when teachers analyze student data for instruction and intervention. Dufour and Fullan (2013) attest that true PLCs can play a central role in improving school performance, engaging students and improving efficacy and job satisfaction for educators. The following questions were included in the principal interview protocol and focused upon the respective PLC dimensions:

Interview Question 3: When staff members collaboratively analyze student work to improve teaching and learning, what do you see happening during professional learning communities? (Collective Learning and Application)

Interview Question 4: What are some examples of faculty collaboratively analyzing multiple sources of data to inform RtI? (Collective Learning and Application)

Interview Question 5: How do staff members support honest and respectful examination of data? (Supportive Conditions: Relationships)

These questions were intended to help the researcher understand the role of collaboration, particularly in professional learning communities, when analyzing data to improve teaching and learning and to inform RTI decisions.

Qualitative analysis of Research Question 2. To address this research question, principals were asked to describe what happens during PLCs when staff members collaboratively analyze student work to improve teaching and learning. One shared experience mentioned by all principal participants describes how PLCs benefit the teachers in addition to the students. Principals described how the instructional capacity of teachers has increased through PLCs. The middle school principal (S3) shared how collaboration in PLCs helps the teachers through rich discussion with their peers about instruction. She said:

> For example, teachers get a chance to compare how students performed but 'what did you do differently?' So, I think it also helps not only identifying what students did not learn but how can we adjust instruction.

The collective work of educators evidenced in professional learning communities has been found to increase the capacity of all members of a PLC to help all students achieve academically (Hipp & Huffman, 2010). The principal of the lower elementary (S1) noted that

another benefit of PLC collaboration is how seasoned teachers share best practices with new teachers and teachers who are new to the district from other districts or other states. She also noted that this is sometimes reciprocated as some teachers in the school have never taught in another school or district:

> I have one teacher who worked in Texas, and some of our teachers have never been off of this little island, so they are able to share best practices and do what we can to help our kids increase their level of proficiency.

Hord and Sommers (2008) describe the collective learning process as staff members asking questions about student data, discussing where the staff should place attention for instruction and applying their concerns to problem solving to create new conditions for learning for all students. When asked about examples of faculty collaboratively analyzing student data for Response to Intervention three of the four principals identified a common question when teachers are looking at student data:

- S1: "what are our next steps based upon the data?"
- S2: "Ok we have done all these things for this kid and he is still struggling, what is our next step?"
- S3: "If a student is struggling, how can we make sure they succeed? What can we do?"

These responses support that teachers are having rich discussion about student data, inquiring about next steps for struggling students and determining where they should focus interventions or supports to problem solve. The principal at school two (S2) added, "hopefully we will get an answer there, and we may not, but we don't give up. We have so many different people with so many different skill sets that someone usually has an idea."

The conclusion drawn by the researcher is that the data identifies the need, sometimes the strategy however the application of an intervention or the precision of measurement used during progress monitoring were not addressed.

The intention of interview question five in the principal interview protocol was to gather interview data related to the relational aspect of professional learning communities. Fullan (2006) describes these as *social and human resources* which include openness to improvement, trust and respect, cognitive and skill base, supportive leadership and socialization. Openness to improvement was a prominent theme among all four principals interviewed. The elementary principal (S2) commented that "as a whole, they are very open and cooperative and always willing to help one another." She added that the only detriment she could identify is that if one of the teachers saw something another teacher needed to improve they would not bring it up unless that person asks for feedback, "they are that nice."

When asked how a culture of honesty and respect developed at the school, the principal from the lower elementary (S1) shared that "it is just a mutual respect they have formed with each other that allows them to be open and honest about their data." She contributed this openness to her teachers working as a professional family always focused on their purpose, trying to do what is best for their students. When these types of norms and values are shared, this common purpose serves as a guide for decision-making about learning in the school by all the staff (Hord, 1997).

Research Question 3. How does data-driven decision making within the PLC process impact Response to Intervention (RTI) as measured by principal interviews?

For teachers to make actionable knowledge from student data, a problem-solving framework helps to design instructional strategies. It also provides data for frequent

monitoring of student responses to interventions (Batsche et al., 2005). The interventions and supports chosen for students during PLCs have important implications on student learning. In the PLC process, it is highly encouraged that all staff share in the development of a shared vision. When teachers share in a common vision for supporting struggling students, this common purpose serves as a guide for decision-making about learning in the school by all staff (Hord, 1997). This question seeks to examine how data-driven decision making within the PLC process impacts the selection and implementation of interventions and supports in RTI.

Qualitative analysis of Research Question 3. To answer this question, the researcher asked the principal to describe how data are used to prioritize actions for struggling students. The intent of RTI is to guide decision-making about school based service delivery; not only serving to identify at-risk students or students with specific disabilities, but as a utility for determining responsiveness to instruction and guiding service delivery for students in need of additional support or interventions (Glover & DiPerna, 2007). Understanding how *data i*nfluences an action, (*RTI*) the researcher seeks to collect information about the process (*PLCs)* that connect the three constructs of this study. Consensus among all four administrators stressed the importance of data being at the center of decision-making for struggling students. The principal from the lower elementary school (S1) shared that data guides annual goal setting, known as student learning targets for all students. These targets are referenced throughout the school year and data is constantly reviewed, week to week, to see "where we should be moving."

The Professional Teaching and Learning Cycle (PTLC) referenced in the literature review is described as a job-embedded professional development process that offers a

structure for collaboration about teaching and learning through continuous job-embedded professional development while promoting school improvement through professional growth and collaboration among teachers (Southwest Educational Development Laboratory, 2008). The administrators interviewed in this study all described a similar process where teachers engage in cycles of learning based upon both summative and formative student assessment data. The lower elementary principal stated, "We are constantly looking at the data, determining projected growth targets of where they should be after effective strategies and try to move these kids where they need to be." This process is consistent with the PTLC as teachers collaboratively look at data and make decisions related to instruction, developing their professional practices they make decisions to improve student learning.

The elementary principal (S2) shared how data guides the focus of the school's intervention process known as *Prime Time*. She described how data determine both school-wide interventions as well as individualized approaches through the school's Student Intervention Team (SIT). The SIT team's responsibility is to prioritize interventions for students who are struggling, both academically and behaviorally. The principal commented that because they are a small school within a small school district, that flexibility exists to easily change interventions and supports as the data informs them of changing needs. Advocates of data-driven decision-making practices argue that effective data use not only identifies successes and challenges a school faces, but also helps schools identify areas of improvement and helps them to evaluate whether programs and practices are effective (Mason, 2002).

At the middle and high school levels (S3 & S4), both administrators identified scheduling as a predominant factor that is influenced by data when supporting struggling

students. The middle school administrator stressed "it starts with scheduling, we try to put kids into classes they need." She described how students who are not meeting academic success are scheduled so that interventions can be tailored to their individual needs, assigning academic programs for remediation and assigning students to *R.O.A.R*. (Raising Our Achievement Ranges), where students are assigned to thirty minutes of remediation or enrichment once per week based upon their level of performance. Teachers work on specific skills or lesson remediation during this time in English Language Arts or Mathematics.

The high school principal commented that "data without a doubt, particularly for students who are in RTI, rules our schedule. We want to create a schedule that helps them." The summative data spreadsheets all teachers receive at the beginning of the school year, identify students in need of intervention and their schedules are tailored so their needs can be addressed. School schedules for general education students who have a history of academic struggle include opportunities for credit recovery which also impacts scheduling. The principal described how students are offered a one semester course in Algebra and Geometry. When students are not successful, they are offered the opportunity to repeat the course in the second semester of the same school year to remain on track for graduation. Students who struggle academically, behaviorally or who have poor attendance are also assigned a teacher mentor. The principal stated that scheduling mentors and having guidance counselors assigned to check in on RTI students is critical to progress monitoring outside of the classroom.

When principal interview participants were asked how data are used to intervene upon struggling students and monitor their progress, the researcher noted a distinction between responses from the elementary schools (S1, S2) from the middle and high schools

(S3, S4). The elementary school administrators both identified a process for using multiple sources of data to monitor students in RTI. The principal at the lower elementary (S1) referenced a series of data points throughout the school year to assist with progress monitoring. The assessment data included historical summative data, diagnostic data as well as formative and benchmarking assessment information. The elementary principal (S2) referred to the process in place rather than the specific data points used. This included the use of the school's SIT team, making decisions for these students within PLCs, at grade level meetings and finally in School Building Level Committee (SBLC) when the other collaborative intervention meetings are not successful. Using data to determine appropriate instructional practices or appropriate interventions or supports requires teachers to engage in the process of systematically gathering and analyzing data to inform decisions (Marsh, Pane, & Hamilton, 2006). Both elementary principals articulated this process, either through the description of the process or when describing the data used during the process. This iterative process of data-driven decision making within PLCs may isolate true PLCs into simplified data meetings, however a professional learning community can more accurately be described as a process (Jessie, 2007). When asked about how RTI student work is shared and progress monitored, both the middle and high school principals (S3, S4) identified challenges that exist related to monitoring the progress of interventions. Research indicates that the use of a problem-solving method and on-going progress monitoring ensure that interventions are being implemented vigorously (Elliott, 2008). The middle school principal responded to this interview question referring to the assignment of students to *R.O.A.R.* (Raising Our Achievement Ranges), where students are assigned to thirty minutes of remediation or enrichment once per week based upon their level of performance. Teachers work on specific

skills or lesson remediation during this time in English Language Arts or Mathematics. The principal's perception described how the proper assignment of students to the appropriate *R.O.A.R.* group as evidence of teachers using data to progress monitor RTI students. When the researcher probed with a supplemental question, *how do you know when it is time for a student to exit a R.O.A.R. group?* the respondent identified an area of growth related to monitoring progress of students in intervention. "One thing we are going to improve upon is that we have to be sure that we assess them and once they learn that skill, to move them on to the next group." This is supported by previous comments, where the principal described how students who are not meeting academic success are scheduled so that interventions can be tailored to their individual needs, assigning academic programs for remediation. The researcher did note that there was no reference to small group or individualized intervention nor any types of measurements used during progress monitoring. The need for progress monitoring of student data to make decisions about intensity and duration of interventions for student improvement also requires increased adult attention and monitoring (Sugai & Horner, 2006). When asked to expound, the principal commented there was a need to revisit protocols the school had used in the past. "It is a work in progress, we need to have more levels, like this is what we do when this happens, this is what we do when this happens etc. More like a ladder." The research supports that schools need effective processes for collecting and using data for decision-making at each level or tier (Pool, Carter, & Johnson, 2013).

The high school principal response related to RTI and progress monitoring supported this claim. Referencing the *Boost* program, where students who are struggling with a concept, lack a skill or miss too much content are offered one hour per week of intervention. This is

when teachers work with students in small groups or individually based upon data from quizzes, informal assessments and unit assessments:

> We do not have a clear way of assessing the success of *Boost* on student skills and concepts. We do all of this and we think we are getting better, we are seeing it in the classroom but there is no direct correlation necessarily. This is something we are aware of however it is better than nothing and based on anecdotal information students and teachers think it works.

RTI should be based on problem-solving models that use progress monitoring to gauge a student response to an intervention to determine the intensity of the continued intervention and increase the probability of success for the student (Batsche et al., 2005). If schools find themselves not meeting standards, then they should use data to change their practices and then monitor the effectiveness of those changes (Ingram, Louis, & Schroeder, 2004).

Teacher Focus Group Interviews

Data for this segment of the study were gathered from focus group interviews at each of the district's four schools. The researcher conducted focus group interviews with teachers from all grade levels at each school, as well as different content areas. Each teacher that participated in the focus groups signed an informed consent letter (see Appendix D), and were interviewed per the focus group interview protocol described in Chapter 3. Each focus group interview was recorded and archived by the researcher. When participant responses to the protocol questions required clarification or in-depth explanation, the researcher asked additional questions not in the protocol. These questions were supplements to the interview to yield a more detailed understanding of the respondent's experience. The researcher began each interview directly with the questions established in the focus group interview protocol.

The researcher chose to begin each interview *without* an open-ended question that asks broadly about RTI as done in the principal interviews. Due to the size of each focus group the researcher chose this strategy to keep each focus group centralized on specific topics in an orderly manner. The interview protocol began with questions related to the first research question and continued systematically as the focus group protocol intended. Each interview then closed with an opportunity for the respondents to add anything the participant thought to be of significance related to data-driven decision making, PLCs or Response to Intervention.

Following the focus group interviews, each digital recording was transcribed and returned to the participant for their review. The transcribed interviews were then coded and analyzed for thematic development. This method of analysis was chosen for the study as it is a widely used analytic method in qualitative analysis of interview data (Braun & Clarke, 2006). The steps in the analysis of the focus group interview data included (1) reading through the transcripts of the interviews (2) coding and classifying the text (3) identifying emerging themes (4) correlating themes to the studies research questions (5) and formulating a narrative. During coding, segments of data were marked with symbols, descriptive words or category names, where the researcher found meaningful segments of text (Johnson & Christensen, 2004). The researcher chose thematic coding as the method for analysis in this study in order to produce an insightful analysis focused on the research questions related to the conceptual model of an *Organizational Learning Culture.*

Thematic coding led to the identification of themes related to the constructs identified in the conceptual model of the research study:

- RQ1: Data-Driven Decision Making
    - Interview Questions 1-2

- RQ2: Professional Learning Communities (PLCs)
    - Interview Questions 3-5
- RQ3: Response to Intervention (RTI)
    - Interview Questions 6-7

The researcher's focus group interview protocol was designed to address each of these components. When the interview data were analyzed themes emerged from the data. Table 4 summarizes the themes that emerged aligned to the research questions. When themes were established, each interview recording was reviewed and themes were verified as part of the analysis.

Demographics. The schools in the district include a lower elementary school (S1), grades kindergarten through first, and an elementary school (S2), grades second through fifth. Additionally, there is a middle school (S3), grades sixth through eighth and a high school (S4), ninth through twelve. All participants in each school focus group interview are certified teachers in their grade level and content area. Table 5 identifies the number of teachers who participated in the focus groups by school. A minimum of two participants represented each grade level. All the respondents who participated are involved in the processes of data-driven decision making, PLCs and RTI processes within their schools. The lower elementary school focus group responses are identified as Focus Group One (FG1). The second through fifth grade elementary focus group are identified as Focus Group Two (FG2). The middle school focus group interview responses are identified in this study as Focus Group Three (FG3) while the high school focus group interview responses are identified as Focus Group Four (FG4). Individual responses from any focus group are coded

by their respective schools (i.e. FG1) as well as with alpha symbols to designate the respondent (i.e. FG1a).

Table 4

Teacher Focus Group Interview Themes

Research Questions	**Themes**
Research Question 1. (Data-Driven Decision Making) What are faculty perceptions of data-driven decision making for Response to Intervention as measured by focus group interviews?	Data identifies gaps in learning for students
	Grouping practices are determined from data analysis
	Progress monitoring exists at varying levels
Research Question 2. (Professional Learning Communities) What are faculty perceptions relative to the benefits of collaboration within PLCs when analyzing student data as measured by principal interviews?	Provides opportunities to share ideas and strategies
	Strong relationships exist in PLCs can be attributed to administrative support and structures or protocols
Research Question 3. (Response to Intervention) How does data-driven decision making within the PLC process impact Response to Intervention (RTI) as measured by principal interviews?	Reviewing student work to identify weaknesses and determine intervention
	Requires teachers to engage in an iterative data process to individualize instruction
	Grouping practices are determined by data in PLCs

Table 5

*Focus Group Participants

School	Number	Percent
School One (S1)	N=8	24%
School Two (S2)	N= 9	27%
School Three (S3)	N= 6	18%
School Four (S4)	N= 10	30%

*n=33

Results pertinent to research questions. Each research question is associated with a specific construct of the conceptual model of an *Organizational Learning Culture:*

- RQ1: Data-Driven Decision Making
- RQ2: Professional Learning Communities (PLCs)
- RQ3: Response to Intervention (RTI) RQ3

Each interview question in the focus group interview protocol is associated with a specific research question and dimension of Professional Learning Communities as identified in Chapter 3. While the researcher attempted to isolate meaning for each research question during analysis, significant crossover did occur between research questions.

Research Question 1. What are faculty perceptions of data-driven decision making for Response to Intervention as measured by teacher focus group interviews?

Research question 1 seeks to identify teacher perceptions of data-driven decision making related to Response to Intervention. Glover and DiPerna contend that RTI has the intention of guiding decision-making about school based service delivery; not only serving to identify at-risk students or students with specific disabilities, but as a utility for determining responsiveness to instruction and guiding service delivery for students in need of additional support or interventions (2007). Interview conversations with each focus group have been analyzed and will be shared to contribute to the study's purpose. The researcher collected data from the focus group interviews to better understand their perceptions of how data drives instructional decisions for RTI. Interviews were conducted with teachers from each of the four schools in the district to contribute to the study. Conversations with each focus group have been analyzed and will be shared to contribute to the study's purpose. The questions posed in the teacher focus group interview protocol to address research question one were

aligned to survey items from the PLCA-R. The following questions were included in the teacher focus group interview protocol and focused upon the respective PLC dimensions:

> Interview Question 1: How do you use data to make decisions about teaching and learning for students in RTI? (Shared and Supportive Leadership)
>
> Interview Question 1a: Do you use multiple sources of data during this process? (Shared and Supportive Leadership)
>
> Interview Question 2: How are data organized and made available for students who are struggling academically? (Supportive Conditions: Structures)

Qualitative analysis of Research Question 1. A prominent theme among focus group participant's lived experience describes the role data plays in identifying gaps in learning. When asked how data are used to make decisions about teaching and learning for students in RTI, one teacher responded (FG3):

> At the beginning of the year we had data meetings, we looked at our RTI students, we pulled them out as opposed to looking at the grade level whole and looked at where their deficits were on their standardized test from last year and used that as a focus, like this group is particularly low in this area. That was our starting point.

Research suggests that schools should start with accountability data to make decisions related to whether they are meeting standards. If schools find themselves not meeting standards, then they should use data to change their practices and then monitor the effectiveness of those changes (Ingram, Louis, & Schroeder, 2004). RTI is used to evaluate the effectiveness of instruction in meeting the needs of all students by assigning students to specific evidence-based interventions designed to improve their rate of learning or behavior (Glover &

Diperna, 2007). Service delivery for RTI includes assessing students to make decision about their progress (Glover & Diperna, 2007).

The progress monitoring procedures that are prominent in RTI illustrate the importance of using data for decision making (Sandomierski, Kincaid, & Algozzine, 2007). In the lower elementary (S1) and elementary (S2) schools progress monitoring plays a significant role in the RTI process. Both focus groups described the use of The Dynamic Indicators of Basic Early Literacy Skills (DIBELS), a set of measures to assess the acquisition of early literacy skills. These measures are designed for kindergarten through sixth grade and are used in grades kindergarten through third in this school district. DIBELS assessments are used to benchmark students three times per year, fall, winter and spring. This data plays a prominent role in monitoring the progress of all kindergarten through third grade students, including those in RTI. One focus group participant (FG1) describes:

> Our process is based upon DIBELS scores for our Kindergarten and First grade students, if they were in Tier 2 intervention the prior year, they will continue with intervention into the next grade level. Once they are assessed with DIBELS, we make a decision. Even students that benchmark out, we continuously keep an eye on them.

Using data to determine appropriate instructional practices or appropriate interventions requires teachers to engage in the process of systematically gathering and analyzing data to inform decisions (Marsh, Pane, & Hamilton, 2006). Progress monitoring during Tier 2 and Tier 3 intervention involve problem-solving and a decision-making system to help design instructional interventions with a high probability of success. The intention is to provide information related to the frequent monitoring of intervention effectiveness. The research indicates that RTI should be based on problem-solving models that use progress monitoring

to gauge a student response to an intervention. This allows teachers to determine the intensity of the continued intervention and stands to increase the probability of success for the student (Batsche et al., 2005). A recommended structure to support teacher analysis of progress monitoring data is a data analysis team format where teachers meet in grade-level teams to analyze student data, set goals and plan for instructional changes based upon the data (Kovaleski & Glew, 2006). Response to Intervention requires frequent progress monitoring to make decisions about changes in instruction and apply student response data to those decisions (Elliott, 2008).

When asked how data are used to make decisions about teaching and learning for RTI, focus group responses frequently referenced how data are used to identify gaps in learning that need to be addressed. During the high school focus group interview (FG4), participants described how data are collected through a learning management system and how that information is used to calculate response rates and conduct item analysis to identify gaps in learning. One responded added, "We go over data in our PLCs on a weekly basis, basically telling performance, what strands that we are weak on and whether to re-test them, review them things like that." This suggests that there is a reliance upon data to help teachers identify where students need additional support and intervention based upon a skill deficit or lack of progression towards mastering a standard.

Response to Intervention (RTI) is defined as the practice of (1) providing high-quality instruction/interventions matched to student need, (2) using learning rate over time, (3) and level of performance to make important educational decisions through a well-integrated system for providing both instruction and intervention for students facing academic or behavioral frustration or failure in school. PLCs are being implemented to support teachers in

collectively using student data to identify student needs and choose instructional strategies (Thessin & Starr, 2011). The literature reviewed for this study includes research related to The Professional Teaching and Learning Cycle (PTLC), a process for creating or strengthening PLCs by focusing on critical aspects that contribute to student outcomes while promoting continuous job-embedded professional development (Cowan, 2010). The process includes using data to drive the decision-making process for selecting instructional interventions and supports for students. The use of data are essential to professional learning communities and becomes part of the school's culture. As one focus group participant (FG1) shared:

> We have data talks in our PLCs where we bring our data in from unit tests, we study which questions were missed, why they missed it and the standard they were to master. Then we come up with a plan to improve.

The process described by teachers in the focus groups aligns with information collected from principal interviews. The administrators interviewed in this study all described a similar process where teachers engage in cycles of learning based upon both summative and formative student assessment data to identify gaps in learning.

When asked how data are used to make decisions about teaching and learning for RTI, focus group responses shared another common theme among the four schools. All interview participants referenced how data helps teachers to develop and maintain groups during instruction. Some key focus group quotes are listed here:

- "It helps me do groups, it helps me group my children;" (FG1)

- "We also use it to divide into groups, like doing small groups in reading, even though we kind of know where the kids lie, the data gives us more information;" (FG2)
- When referring to reviewing test data "it is a quick way to observe, ok well this child is not understanding this based on what I am seeing on this test so I will group them that way whenever we do our next classwork exercise;" (FG3)
- "The data tells us who to recommend for *Boost,* it is a tutoring session where we have two or three students grouped, subject specific." (FG4)

Another theme that emerged from the focus groups is the extensive amount of data sources available to teachers for RTI. When asked if multiple sources of data are used during the RTI process, focus group participants reported that multiple levels of summative and formative assessment data exist to inform their decision-making. Analyzing multiple sources of data allows educators to determine the best supports and interventions to improve student achievement both socially and academically. Table 6 graphically presents the number of assessment data sources mentioned during each school focus group interview.

Accountability demands are forcing school leaders and teachers to explore multiple sources of data and engage in more sophisticated data analysis (Lou, 2008). As evidenced in table 6, there are significantly more assessment data sources in the lower elementary (S1) and the elementary (S2) compared to the middle (S3) and high (S4) schools. When focus group participants at the lower elementary school (S1) responded to this interview question the researcher asked a supplemental question, "How are these assessments paced out throughout the school year?" Some key focus group (FG1) responses are referenced here:

- "DIBELS is done three times per year;"
- "MAP is done three times a year;"
- "Kindergarten does DSC in the beginning of the year;"
- "We do DSC at the beginning, DRA middle and end;"
- "Unit tests every three weeks and nine weeks assessments four times a year;"
- "Benchmark testing beginning and end of year."

Table 6

Multiple Sources of Assessment Data by School

School One (S1)	**School Two (S2)**	**School Three (S3)**	**School Four (S4)**
DIBELS	DIBELS	STAR (lexile)	STAR (lexile)
DRA	STAR (lexile)	Writing Samples	Teacher Made Test
DSC	READ 180	Pre/Post Tests	Standardized Test
Unit Tests	iSteep	Weekly	
Curriculum	10 Marks	Comprehension	
Benchmark	Fast Math	Quizzes	
NWEA (math)	Sprints	Standardized Test	
MAP (ELA & Math)	Standardized Test		
TS Gold (Pre-K)			
Social/Emotional			
Assessments			
Physical Assessments			

The researcher noted the responses from this focus group as they listed the timeline of assessments in the Pre-Kindergarten through first grade school (S1), one respondent commenting, “Our poor babies,” referencing the frequency of assessment required at each grade level in the school.

To address this research question, focus groups were also asked how data are organized and made available, providing easy access to staff members. Consensus among all four focus group responses stressed that the instructional leaders including instructional support personnel; the reading interventionist (S1), instructional coach (S2) literacy interventionist (S3) and literacy specialist (S4) organize student data for teachers and share this information in PLCs. Participants responded to this interview questions:

- “The reading interventionist will run data to show which children benchmarked;” (FG1)
- “The interventionist gives us the DIBELS chart that breaks down everything;” (FG2)
- “The administration will give us historical data, their past test scores, lexile, whatever we need they give to use;” (FG3)
- “We have things like PLAN, EXPLORE, LEAP scores from previous years, it is made available to us before students show up.” (FG4)

Additional access to data includes the use of data binders or historical records at each of the schools. A lower elementary focus group (FG1) shared, “each teacher has a data binder and then we have a data binder for our students that are targeted in RTI.” Other focus groups referenced spreadsheets or historical data that is shared with them at the beginning of each school year. This historical information is shared with teachers at the beginning of the school

year but many focus group responses referenced how data are accessed throughout the year when progress monitoring:

- "…Pretty much all the other data is coming directly from us, because we run it through Edusoft;" (FG1)
- "For RTI in Pre-K we have our data organized by folders, we do a lot of in house, some have a red or green folder;" (FG1)
- "For 10 Marks or STAR you can go in and print out the data and it is kind of like you have to get in there and start digging and talk to your co-teachers;" (FG2)
- "We have access to their books, so we can actually see exactly what mistakes they are making. A teacher has to be motivated to go in there, grab the books and look at them;" (FG2)
- "We also test them ourselves through STAR, so we test the kids and then the data is available for us;" (FG3)
- "We pull the data from schoology and that makes it really easy for us to pull our own data." (FG4)

Effective use of data to support positive outcomes for both educators and students requires the ability to build capacity for those educators to effectively access, understand and apply data (Campbell & Levin, 2009). The consensus among focus groups is that there is a combination of historical data shared from the instructional leadership at each school along with formative data points that teachers explore on their own and discuss during PLCs.

Research Question 2. What are faculty perceptions relative to the benefits of collaboration within PLCs when analyzing student data as measured by teacher focus group interviews?

Research question 2 seeks to identify faculty perceptions of PLCs, particularly related to collaboration when analyzing student data. Interview conversations with each focus group have been analyzed and will be shared to contribute to the studies purpose. The researcher collected data from the focus group interviews to better understand their perceptions of the benefits of collaboration when analyzing data. Interviews were conducted with teachers from each of the four schools in the district to contribute to the study. Conversations with each focus group have been analyzed and will be shared to contribute to the studies purpose. The questions posed in the teacher focus group interview protocol to address research question two were aligned to survey items from the PLCA-R. The following questions were included in the teacher focus group interview protocol and focused upon the respective PLC dimensions:

> Interview Question 3: What opportunities exist for you to collaboratively analyze student work to improve teaching and learning? (Collective Learning and Application)
>
> Interview Question 3a: When staff members collaboratively analyze student work to improve teaching and learning, what do you see happening during this time? (Collective Learning and Application)
>
> Interview Question 4: How do you support honest and respectful examination of data when you look at it collaboratively? (Supportive Conditions: Relationships)

Interview Question 5: What are some examples of how you collaboratively analyze multiple sources of data to assess the effectiveness of RtI? (Collective Learning and Application)

Qualitative analysis of Research Question 2. For this section of the study, the researcher collected data related to faculty perceptions of collaboration within PLCs when analyzing data. When asked to describe opportunities that exist to collaboratively analyze student work to improve teaching and learning, all four focus groups stressed the role of Professional Learning Communities. The collective work of educators evidenced in professional learning communities has been found to increase the capacity of all members of a PLC to help all students achieve academically (Hipp & Huffman, 2010). Focus group participants described PLCs as an opportunity to collaboratively look at student work and there were several references to having *data talks* during weekly PLCS. One focus group (FG1) described this collaborative time as:

> An opportunity to have data talks, where we bring our data in and we talk about it. Things like the most missed questions, and why we think they missed it. The standards that they are working to master and which ones they are progressing towards or mastering. And how we can improve on the ones they didn't do well on.

Hord and Sommers (2008) describe this collective learning process within PLCs as staff members asking questions about student data, discussing where the staff should place attention for instruction and applying their concerns to problem solving to create new conditions for learning for all students.

Focus group participants in all schools also described their PLC time as an opportunity to receive professional development based upon needs identified from

collaboratively analyzing student work. Hipp and Huffman (2010) describes educator learning through professional development as an ongoing activity in schools inclusive of curriculum development, student assessment and the development and evaluation of instructional strategies. The elementary focus group (FG1) describes, "we look at student work and how kids did on specific questions and sometimes an administrator will come in and give us information to help with our instruction. It is kind of like a workshop or like professional development." The PTLC reviewed in the literature is described as a job-embedded professional development process that offers a structure for collaboration about teaching and learning through continuous job-embedded professional development while promoting school improvement through professional growth and collaboration among teachers (Southwest Educational Development Laboratory, 2008). The descriptions of PLC work related to data within each of the schools is aligned to this cycle of inquiry and problem-solving. Additional focus group evidence supporting PLCs as opportunities for job-embedded professional development that promote teaching and learning include:

- "We have learning walks, where a group of teachers will go into a teacher's class and watch strategies that she is using in the classroom and we bring that information back to PLCs and collaborate about what we saw and what we can use;" (FG1)
- "In PLCs, we look at student work, not just the DIBELS stuff and we discuss ideas on different strategies, things we can use in the classroom;" (FG2)
- "PLCs usually start with our facilitator, our instructional coach, giving information, sharing data and then maybe doing a short PD;" (FG2)

Research supports that the goal is not only to share knowledge and expertise that bear on learning, but to develop and build staff expertise as well (Jacobson, 2010). Dufour and Eaker (1998) describe collaborative team learning as focusing upon organizational renewal and a willingness to work together in continuous improvement processes.

Two of the focus groups (S1 and S3) stressed the importance of informal collaboration that exists on their campuses. The lower elementary focus group (S1) shared that often student work is discussed informally in the hallways of the school between classes. One teacher shared "we are constantly collaborating informally, we have a go-to person for Math or Writing and we just ask 'What are you doing to make your kids get this'." The middle school (S3) shared: "In addition to PLCs, we also just pull each other out in the hallway. The collaboration is just on-going and very fluid."

To gain more detailed information related to this research question, focus group participants were asked, "When staff members collaboratively analyze student work to improve teaching and learning, what do you see happening during this time?" This interview protocol question was designed for the researched to gain an in-depth perspective of what teachers perceive to be the focus of their professional learning communities. Each focus groups interview collectively stressed the importance of data sharing as evidence of their collaborative process. This included reviewing student work samples as a major component of their time together. As one respondent shared (FG1), "We bring in student work, it doesn't always have to be a unit test, or data, we can bring in a high, medium and low sample of student work, analyze it and talk through it." Responses from the other focus groups shared similar perspectives:

- "We look at student work, not just the DIBELS stuff, but maybe we gave a unit test, so we are looking at how the kids did on specific questions or a writing sample;" (FG2)
- "In PLCs sometimes we will bring something in and we might say 'wait we need everybody's opinion on this, can you help with this, maybe a piece of writing, how would you have scored this?';" (FG3)
- "We have our laptops open, looking per class, at who is grasping concepts, what we did, what we didn't do as far as the data is concerned. And line item analysis per question, and discuss which questions we want to put on the next test." (FG4)

This time of collective learning in PLCs allows individuals or groups of individuals to bring in new ideas for discussion and examination with colleagues (Hord, 1997). Collaborative analysis of student writing emerged as a theme among many in the focus groups. Many participants cited discussion of writing expectations as evidence of the collaborative dialogue taking place during PLCs. Participants referenced new state standards and new summative standardized assessments as reason for a focus upon writing. The middle school focus group (FG3) shared:

> We spent over a month of PLC time developing a writing rubric, analyzing student writing samples, rating them, comparing our scores on the rubric. We spent an extensive amount of time at the beginning of the year trying to align our rubric expectations.

Hord and Hirsh (2008) asserted that staff learning precedes student learning, and its focus derives from the study of both student and staff data that reveal specific needs. Thus, the staff

engages in intentional and collegial learning aligned with needs and goals determined by data. The high school (FG4) shared:

> We just started implementing a standardized rubric for writing. It is a way to standardize our mind-set and philosophy on how we teach writing. It has been good and has given us a common language, so hopefully when a student goes ninth through twelfth grade and we say 'I want you to work on sentence fluency', they know what we are talking about.

Hord (1997) stresses that acquiring and applying new knowledge is an intellectual task and a high priority in a professional learning community. As teachers have discussions about writing expectations they are learning while discussing expectations for student writing. This collaborative process allows teachers to share ideas and discuss strategies with their peers.

During the focus group interviews, teachers made several references to having opportunities to share ideas and teaching strategies during PLCs. As one participant (FG1) shared, "If I am having trouble with this child and I have been trying this over and over, I can come to Mrs. L and say 'hey can you show me what you use?' We bounce ideas off of each other." A middle school (FG) participant shared, "We teach across the hall from each other, so she may do something first hour and go 'this worked so great, let me tell you what I did.' So there is a lot of sharing." Hord (1997) describes this mutual respect and trustworthiness of staff as the basis for individual and community improvement through the sharing of personal practices.

Teachers need open communication and a sense of safety when working with colleagues to share information, conduct peer observations and feel trustful to have these types of dialogues in an environment that supports their efforts. Teachers visiting each

other's classrooms to observe, take notes, and discuss their observations facilitates the work of changing professional practices among a professional learning community (Hord & Sommers, 2008). The relational condition of trust is described as providing the basis for giving and accepting feedback in order to work toward improvement (Hord & Sommers, 2008). To gain a deeper understanding of the relational conditions within PLCS the researcher asked focus group participants, *how do you support honest and respectful examination of data when you look at it collaboratively?*

The common themes among the four focus groups surrounded three very important concepts; Having structures in place that support honest and respectful examination of data; Administrative support that honors the time they spend together in PLCs and participates in the process; Having expectations for students that keeps the PLCs focused on what is best for the student. As one participant explained (FG2), "When looking at the data, we have to be honest with each other but in a caring way."

Focus groups attribute this to what many participants referred to as a *culture* in their schools that allows for honest and respectful examination of data. When describing this culture, there were frequent references to the structures that are in place in the school, allowing for what one participant (FG3) called a "safe" environment. The structures mentioned during most of the focus group interviews described having norms established for when they meet in PLCs. One teacher commented (FG3):

> When we first started PLCs it was very scripted, they made us follow a model. When we were presenting student work it was very structured where we had a time to ask questions, a time to contribute. Now, I think we have become accustomed, we are like 'hey I have this kid who is having trouble with…tell me what you think'

Other participants shared similar thoughts about having structures in place. The lower elementary school (FG1) shared, "we also start each meeting with norms, we created norms, and we review them at the beginning of each meeting. Be on time, be respectful…" The common thought shared among the focus groups attributed these norms and structures to a safe culture in their schools for teachers to examine data together to make decisions about what is best for students. Boyd attributes norms that support ongoing learning as a means of developing a meaningful and stable culture in schools (as cited in Hipp & Huffman, 2003).

Supportive leadership became an evident theme in the focus group interviews for the middle and high schools. Teachers felt that the presence of an administrator in PLCS contributes to honest and respectful examination of data. Although teachers were involved in the discussions and decision making about instructional practice, both groups shared how their school leaders served as facilitators during their PLC time, contributing to the conversation as needed. One teacher (FG3) shared:

> Having seen different environments that were working to develop the PLC type situation, everyone was use to working on their own, they weren't use to sharing, they were very scared to share in front of their peer for judgement reasons. Whereas here, we meet in this room, we show up and just lay it all out there. The fact that there is an administrator present and are part of the conversation.

Shared and supportive leadership are evident in schools when administrators share power, authority and decision making (Hord, 1997). Many teachers attribute the supportive presence of their administrators as a key contributor to the positive relationships within their PLCs. The high school teachers echoed that administrative presence plays a role in honest and respectful examination of the data. As one teacher shared (FG4), "We usually have an

administrator in there, to help with flow, guidance and communication." Tschannen-Moran asserts that it is the responsibility of the person in most power to build and sustain these types of trusting relationships (as cited in Hipp & Huffman, 2003).

School leaders are tasked with involving others in creating a shared vision for a school organization that join teaching and learning with the development of PLCs (Hipp & Huffman, 2003). When the focus groups shared about honest and respectful examination of data, the final theme that emerged among the teachers relates to having high expectations for their students. Having a shared vision among stakeholders inspires the participants to work towards a future goal (Hipp & Huffman, 2003). As one teacher explained (FG1), "we don't criticize each other cause all of us want the kids to succeed. We are all trying to reach a common goal." The common thought shared by teachers is that it always comes back to the students and what is best to meet their instructional needs. Another teacher shared (FG4), "whenever you have such high standards, you can't try to meet those standards by yourself. There is no competition here. We are responsible for the success of English II, it's not my kids versus hers…"

As the researcher analyzed the data collected from the focus interviews, a conclusion was drawn regarding focus interview protocol 5: *What are some examples of how you collaboratively analyze multiple sources of data to assess the effectiveness of RtI?* For the purpose of sharing findings related to RTI, the information collected from the focus groups related to this question will be shared with the findings from research question 3 in the next section that address RTI. The researcher determined that information related to progress monitoring of RTI is better used to answer research question 3.

Research Question 3. How does data-driven decision making within the PLC process impact Response to Intervention (RTI) as measured by teacher focus group interviews?

Research question 3 seeks to identify how teachers perceive the RTI process in their schools. In particular, how the use of data in PLC influences decisions for students in need of intervention or additional support. The questions included in the focus group protocol were intentional in that they were designed to support information related to data, PLCs and RTI. Although previous interview questions addressed these topics the researcher attempted to provide additional evidence to support the study. Interview conversations with each focus group have been analyzed and will be shared to contribute to the studies purpose. Interviews were conducted with teachers from each of the four schools in the district to contribute to the study. Conversations with each focus group have been analyzed and will be shared to contribute to the studies purpose. The questions posed in the teacher focus group interview protocol to address research question three were aligned to survey items from the PLCA-R. The following questions were included in the teacher focus group interview protocol and focused upon the respective PLC dimensions:

Interview Question 6: How are data used to prioritize actions to reach a shared vision for students in RTI? (Shared Values and Vision)

Interview Question 6a: How are data used to intervene upon RTI students to reach that vision? (Shared Values and Vision)

Interview Question 7: How does the regular sharing of student work guide changes in instruction for RTI students? (Shared Personal Practice)

Interview Question 7a: How does the regular sharing of student work guide overall school improvement? (Shared Personal Practice)

Interview Question 5: What are some examples of how you collaboratively analyze multiple sources of data to assess the effectiveness of RtI? (Collective Learning and Application)

Qualitative analysis of Research Question 3. For this section of the study, the researcher collected data on faculty perceptions related to decision-making for RTI. Specifically, the role data plays in PLCs related to a shared vision for RTI students. Response to Intervention can be defined as providing high quality instruction and interventions matched to student needs (Batsche et al., 2005). In order for teachers to match intervention to student need they must have a shared vision for what intervention is. Often collective vision building is a challenge for learning communities (Hipp & Huffman, 2003). In order for RTI to be successful, teachers must share in a vision for its purpose and the process for service delivery within their classrooms and schools. The first focus group interview question to address this research asks teachers to describe how their actions are prioritized based upon data to meet the expectations of RTI. The consensus among teachers is that data informs what students need intervention and how the intervention is delivered. Their actions are dependent upon the information gathered and analyzed from assessment data to determine needs. As one teacher described (FG3), "we look at the data and look at each child individually, 'what does this child need the most?'" This suggests that actions are dependent upon identifying needs first. The high school focus group (FG4) shared how grade level meetings occur monthly and are a time when students are identified as low performing and grade levels discuss potential interventions. Although not in PLCs, these meetings provide an

opportunity for teachers to meet by grade level rather than by content or subject area, allowing teachers to discuss students in need of intervention and their performance in all subject areas. As one teacher describes:

> If I am calling a parent to say this student is struggling and failing English, I am also going to mention they have issues in biology. It is kind of shared, I would probably say that is one of our strengths at this school, that we target that population.

When asked how data are used to intervene upon RTI students, both elementary school focus groups also described how students are grouped for interventions as a prioritized action that results from the data. The lower elementary (FG1) shared how the data not only informs how to group students but when moving a student to another group is necessary based upon progress monitoring. One teacher shared, "This year we had a first-grade student working with the first-grade interventionist but they actually needed to be working with the kindergarten interventionist because they weren't ready." The elementary school (FG2) supported that data is used to prioritize interventions based upon need. They described how gap skills are identified and students receive intervention based upon that need.

The final interview question, was designed to capture teacher perceptions related to student response to an intervention and how that impacts changes to instruction or intervention. The RTI framework can be defined as the practice of (1) providing high-quality instruction/interventions matched to student need, (2) using learning rate over time, (3) and level of performance to make important educational decisions. According to Reschly (2005), levels of support or intervention are distinguished by the level of intensity and the precision of measurement used during progress monitoring at each level. During the focus group interviews the researcher noted a distinction between responses from the elementary schools

(S1, S2) and the middle and high schools (S3, S4). The elementary school responses centered around the use of formative assessment data to monitor student progress. One focus group participant (FG1) describes:

> Our process is based upon DIBELS scores for our Kindergarten and First grade students, if they were in Tier 2 intervention the prior year, they will continue with intervention into the next grade level. Once they are assessed with DIBELS, we make a decision. Even students that benchmark out, we continuously keep an eye on them.

This suggests that data there is a systematic process in place that allows teachers opportunities to reflect on formative assessment data and alter instruction or interventions. Systematically monitoring student progress and making decisions about instructional needs for students within the RTI process are critical when considering service delivery to ensure that those students in need are matched with appropriate services (Glover & Diperna, 2007).

On the contrary, middle and high school focus groups had different perceptions related to how students respond to an intervention and how that impacts changes to instruction or intervention. The middle school focus group described how the R.O.A.R. intervention is progress monitored by the teacher working with the students receiving the intervention. As one teacher shared (FG3), "With R.O.A.R. we are not necessarily with our own students, 'if they are having trouble with double digit multiplication, do they still have that trouble?' we would have to talk to that teacher." The high school focus group shared similar thoughts about the *Boost* intervention as one teacher shared:

> We are not very good at that at this school. Not the teachers individually but we have always said since we started boost, we think it is good but there are multiple issues

> with it. But we do not have any data to say yes, it is working or no it is not, and that is a school-wide thing.

The elementary focus groups also stressed the role of PLCs when monitoring progress but also made references to additional teams in the schools that look at data to progress monitor students outside of PLCs. The lower elementary (FG1) referenced:

> Even if a student benchmarks out but they are really struggling, we put them on what we call our RTI meeting, we bring them in and we can make a group, team decision to move that student in based on their grades in the classroom and teacher input.

The elementary school (FG2) also referenced the Student Intervention Team or *SIT* that meets weekly as a level of intervention before a student is referred to the School Building Level Committee (SBLC) for a formal evaluation. A recommended structure to support teacher analysis of progress monitoring data is a data analysis team format where teachers meet in grade-level teams to analyze student data, set goals and plan for instructional changes based upon the data (Kovaleski & Glew, 2006).

Quantitative Data Analysis

Qualitative data were collected through the administration of the PLCA-R. This segment of the research study is focused on understanding the three key constructs of the study by focusing upon professional learning communities identified in the conceptual model presented in Chapter 1, an Organizational Learning Culture. The conceptual model of an organizational learning culture, identified professional learning communities as the conduit within an Organizational Learning Culture, bridging data-driven decisions and RTI, therefore, the Professional Learning Community Assessment-Revised (PLCA-R) was used to determine these perceptions. This guided the development of research questions specifically

for the quantitative component of this research relate to professional learning communities. This facet of study examined the experiences of the participants who teach in schools within the district and are involved in the PLC structure established by the district. This instrument was used to assess the perceptions of participants within the school district. The PLCA-R is based on Hord's five dimensions of a professional learning community (Huffman & Hipp, 2003). The following research questions guided the quantitative portion of this study:

Research Question 4. What are faculty perceptions of Professional Learning Communities as measured by the PLCA-R?

Research Question 5. What are faculty perceptions of specific PLCA-R survey items related to DDDM? (7 item composite score)

Research Question 6. Is there a correlation between PLCA-R dimensions?

Research Question 7. Is there a correlation between specific PLCA-R survey items related to data and PLCA-R dimensions?

Demographics. The district's PLCA-R results included the four schools that make up the educational agency. The sample population included all teachers inclusive of school principals and any additional staff directly associated with curriculum, instruction or assessment of students. The participants were invited to participate in the survey on a voluntary basis. The return rate for the survey was satisfactory with the goals of the district superintendent as well as for the purpose of this study.

A total of 141 eligible participants (based on this study) volunteered in the district-wide data collection process. School 1 had a return rate of 100% with 37 of the 37 teachers returning the PLCA-R survey. School 2 had a return rate of 85% with 45 of the 53 teachers returning the survey. School 3 had a return rate of 57% with 24 of the 42 teachers returning

the survey while School 4 had a return rate of 64% with 35 of the 55 teachers returning the survey. The rate of return for the district totaled a 75% response rate. The survey was administered electronically through the Southwest Educational Development Laboratory, an affiliate of American Institutes for Research. The researcher provided all school principals a hyperlink to the online survey and principals were asked to share this link with their faculties.

Results pertinent to research questions. The quantitative segment of this study will provide evidence to assist the researcher in exploring the conceptual model of an organizational learning culture, focusing upon the function of teachers and schools in the study within their professional learning communities. Additionally, the researcher will focus upon specific assessment survey questions from the PLCA-R to take a more in-depth evaluation of the participants use of data within their PLCs. Research questions four is focused upon general perceptions of the PLC process while research question five is focused upon perceptions related to specific survey items related to data.

***Descriptive statistics*.** The raw data collected from the surveys were input into an excel spreadsheet which were input into the SPSS statistical program for analysis. The SPSS program ran descriptive statistics and this analysis was used to calculate the mean and the standard deviation of each question in the survey. This additional subscale will also allow the researcher to analyze for correlations between the data survey items that created the new subscale and the other dimensions of professional learning communities later in the study. There are 52 survey statements assessed with the PLCA-R and each were rated by the participants of this study based upon their perceptions. The mean scores are based on results from the four point likert scale. The participants recorded their perceptions of each survey item responding to statements about practices that occur in schools using a forced Likert

scale. A response of one, signifies that a participant strongly disagrees (SD) with the statement, a participant who rates two signifies that the respondent disagrees (D) with the statement. Those responses rated with three agree (A) with the statement while the highest response of four, signifies that the participant strongly agrees (SA) with the statement.

Research Question 4. What are faculty perceptions of Professional Learning Communities as measured by the PLCA-R?

Quantitative analysis of Research Question 4. The following sections and tables present the findings from the administration of the PLCA-R. The PLCA-R is a questionnaire based upon Hord's five dimensions of a professional learning community (Huffman & Hipp, 2003). Respondents included school teachers, school principals, assistant principals, counselors, and any additional staff directly associated with curriculum, instruction and assessment of students. Participants were invited to participate in the study on a voluntary basis. A total of 141 eligible faculty volunteered in completing the online survey. The data collected from the surveys were transferred from a raw excel data file into SPSS, a statistical program, for analysis. The SPSS program was used to run an analysis of the descriptive statistics for each PLC dimension and includes detailed measures of central tendency and variation; mean scores, standard deviation, skew and kurtosis for each of the PLC dimensions assessed by the PLCA-R. This information is provided to enhance the research findings from the principal interviews and teacher focus groups described in the qualitative segment of the study.

Table 7 provides information that describes the status of professional learning community practices for the school district as measure by the PLCA-R. The table includes mean scores, standard deviations, skewness and kurtosis for each of the five PLC dimensions

assessed by the survey. There are five dimensions of professional learning communities assessed by the survey, table 7 reports six sets of scores. There are two components of supportive conditions, structure and relationships, so they are reported separately.

Table 7

*PLC Dimension Subscales: Descriptive Statistics

	School District			
	M	*SD*	*Skewness*	*Kurtosis*
Shared and Supportive Leadership	3.19	.567	-.928	1.98
Shared Values and Vision	3.21	.544	-.705	2.407
Collective Learning and Application	3.29	.509	-1.044	4.203
Shared Personal Practice	3.18	.580	-.744	1.854
Supportive Conditions				
Relationships	3.34	.590	-1.162	2.620
Structure	3.17	.557	-.750	2.008

*n=141

The mean scores are based on results from the four point Likert scale. The participants recorded their perceptions of each survey item responding to statements about practices that occur in schools using a forced Likert scale. A response of one, signifies that a participant strongly disagrees (SD) with the statement, a participant who rates two signifies that the respondent disagrees (D) with the statement. Those responses rated with three agree (A) with the statement while the highest response of four, signifies that the participant strongly agrees (SA) with the statement.

Per the data analyzed, the mean scores for each dimension appear to be somewhat consistent. Composite mean scores for the district range from 3.17 to 3.34. Participant

responses rated supportive conditions-relationships as the strongest dimension with a score of M=3.34, SD=.590. The dimension of supportive conditions-structures has the lowest mean score (M=3.17, SD=.557) of all professional learning community dimensions. Both supportive conditions are necessary to build effective learning communities (Hipp & Huffman, 2010). The data reflects a discrepancy among perceptions among these two structural dimensions and qualitative data

collected through principal and focus group interviews support the conclusive data from the PLCA-R. As a result, this issue will be discussed later in this chapter.

Distributional characteristics, skewness and kurtosis, show that most PLC dimension subscales fall within the normal range of +/-2. Collective learning and application has a kurtosis score of 4.203 indicating that many of the scores for this dimension are located near the mean score for that dimension. This indicates that the respondents have common perceptions about the individual survey items within that dimension. Collective learning and application has a mean score of M=3.29, the second largest mean score of all dimensions. The researcher concluded that not only were responses common, survey items were also rated favorably related to collective learning and application.

To draw more in-depth conclusions about each PLC dimension and support findings from the qualitative segment of this study, the research includes descriptive statistics for each school in Table 8. This serves to draw better insight into faculty perceptions of each dimension by individual schools where perceptions may vary. Mean scores and standard deviations are reported for each dimension for all four schools in the district. School 1 composite mean scores range from 3.10 to 3.25. Based on survey responses, supportive conditions-relationships is the strongest PLC dimension with a score of M=3.25, SD=.684. The lowest

rated dimension at School 1 is shared and supportive leadership with a score of M=3.10, SD=.688. All PLC dimension scores for School 1 have favorable results and have relatively close mean scores. The descriptive scores indicate that there is moderate agreement that the dimensions of PLCs are being practiced in the school.

Table 8

School-level Descriptive Statistics

	School One		School Two		School Three		School Four	
	M/SD		M/SD		M/SD		M/SD	
Shared and Supportive Leadership	3.10	.688	3.45	.411	2.93	.482	3.14	.542
Shared Values and Vision	3.13	.672	3.36	.437	3.00	.383	3.26	.570
Collective Learning and Application	3.21	.672	3.36	.422	3.16	.356	3.36	.491
Shared Personal Practice	3.12	.706	3.36	.426	2.92	.486	3.21	.606
Supportive Conditions: Relationships	3.25	.684	3.41	.505	3.32	.649	3.35	.554
Supportive Conditions: Structures	3.15	.703	3.23	.427	3.05	.548	3.18	.547

*n=141

According to the table, School 2 has higher composite mean scores for each dimension, ranging from 3.23 to 3.45. Participant scores rate shared and supportive leadership as the strongest dimension with a score of M=3.45, SD=.411. The lowest rated

dimension at School 2 is supportive conditions-structures with a score M=3.23, SD=.427. All PLC dimension scores for School 2 have favorable results with the highest ratings for each dimension among the schools in the district. School 2 is the elementary school, principal interview data and focus group interview data collected during the qualitative phase of this study support the conclusions ascertained from the PLCA-R.

School 3 has composite mean scores ranging from 2.92 to 3.32. Supportive conditions: relationships rated the highest with a mean score of M=3.32, SD=.649. Although this dimension had the highest mean score, it also has the highest standard deviation of any dimension for School 3. Considering the mean scores of the other dimensions, this dimension rated moderately higher than the second highest rated dimension, collective learning and application (M=3.16, SD=.356). The lowest rated dimension is shared personal practice (M=2.92, SD=.486). The researcher notes that shared and supportive leadership also had a low composite mean score, M=2.93, SD=.482. Mean scores as a measure of central tendency indicate that School 3 has the most variance among mean scores for each dimension. This will be explored in more detail later in the chapter and findings.

The composite mean scores for School 4 presented in the table range from 3.14 to 3.36. Participant scores rate collective learning and application as the strongest PLC dimension with a mean score of M=3.36, SD=.491. The mean score for supportive conditions-relationships rated M=3.35, SD=.554 indicating that survey respondents have similar thoughts related to items within each of these dimensions. This will be further explored in the research. The lowest rated dimension at School 4 is shared and supportive leadership with a mean score of M=3.14, SD=.542. All PLC dimension scores for School 4 have favorable results and all mean scores rate higher than 3.00. The descriptive statistical

scores indicate that there is agreement that the dimensions of PLCs are being practiced in the school. Evidence from this analysis is consistent with interview data as evidence of a learning environment that fosters the attributes of this type of learning community. In the PLC environment, students are regarded as being academically capable and the staff envisions a learning environment that realizes and fosters each student's potential (Hord, 1997).

Frequency data. PLCA-R frequency data allowed the researcher to summarize each of the 52 survey items, and allowed for the identification of any errors or mistakes that may have occurred during data collection. The information in the following tables also allows for in-depth analysis of each dimension. Survey items for each dimension give insight into perceptions of individual survey questions that contribute to the composite mean scores of each dimension. This allows the researcher to attribute dimension strengths and weaknesses for the school district. Mean scores and standard deviations are also presented in each table to support any conclusions drawn from the data. The participants recorded their perceptions of each survey item responding to statements about practices that occur in schools using a forced Likert scale. A response of one, signifies that a participant strongly disagrees (SD) with the statement, a participant who rates two signifies that the respondent disagrees (D) with the statement. Those responses rated with three agree (A) with the statement while the highest response of four, signifies that the participant strongly agrees (SA) with the statement.

*Frequency data: Shared and supportive leadership***.** Table 9 presents the results of frequency data for shared and supportive leadership for the district. The composite mean score of M=3.19 was among the lowest scores of the dimensions. The survey questions

related to shared and supportive leadership included 11 survey items. Survey item 6 had a mean score of M=3.36, SD=.679, the highest score for a survey item within this dimension. This survey item asked participants to rate the following, *The principal shares responsibility and rewards for innovative actions*. 92.9% of participants rated this survey item as either agreeing with the statement or strongly agreeing with the statement. Survey item 10 asked respondents to rate whether stakeholders assume shared responsibility and accountability for student learning without evidence of imposed power and authority. This survey item had the lowest mean score within this dimension, M=2.96, SD=.680 however only 20.5% of respondents rated this survey item as disagree or strongly disagree. 60.3% of respondents agreed that stakeholders assume shared responsibility and accountability for student learning without imposed power and authority. The researcher notes that of the 11 survey items in this dimension, survey item 10 also had the largest number of responses (18.4%) that disagree or strongly disagree with the statement. The contrast between survey item 6 and 10 indicate that although perception is that innovation is rewarded, 20.5% of the faculty within the district may perceive the responsibility and accountability for student learning as authoritative or imposed by the school leader. The intent of shared leadership is to foster a multitude of interactions and relationships to build capacity for change, promoting increased student learning (Hipp & Huffman, 2010).

*Frequency data: Shared values and vision***.** Table 10 presents the results of frequency data for shared values and vision for the district. The composite mean score for this dimension is M = 3.21, SD = .544.

Table 9

Frequency: Shared and Supportive Leadership

*M=3.19, SD=.567

Dimension Statements	SD (1)	D (2)	A (3)	SA (4)	Mean	*SD*
1. Staff members are consistently involved in discussing and making decisions about most school issues.	(4) 2.8%	(16) 11.3%	(75) 53.2%	(46) 32.6%	3.16	.730
2. The principal incorporates advice from staff members to make decisions.	(4) 2.8%	(12) 8.5%	(67) 47.5%	(58) 41.1%	3.27	.736
3. Staff members have accessibility to key information.	(3) 2.1%	(18) 12.8%	(83) 58.9%	(37) 26.2%	3.09	.686
4. The principal is proactive and addresses areas where support is needed.	(3) 2.1%	(10) 7.1%	(67) 47.5%	(61) 43.3%	3.32	.700
5. Opportunities are provided for staff members to initiate change.	(3) 2.1%	(20) 14.2%	(83) 58.9%	(35) 24.8%	3.06	.689
6. The principal shares responsibility and rewards for innovative actions.	(3) 2.1%	(7) 5.0%	(67) 47.5%	(64) 45.4%	3.36	.679
7. The principal participates democratically with staff sharing power and authority.	(3) 2.1%	(21) 14.9%	(73) 51.8%	(44) 31.2	3.12	.732
8. Leadership is promoted and nurtured among staff members.	(2) 1.4%	(13) 9.2%	(72) 51.1%	(54) 38.3	3.26	.683
9. Decision-making takes place through committees and communication across grade and subject areas.	(2) 1.4%	(21) 14.9%	(67) 47.5%	(51) 36.2%	3.18	.733
Dimension Statements	SD (1)	D (2)	A (3)	SA (4)	Mean	*SD*
10. Stakeholders assume shared responsibility and accountability for student learning without evidence of imposed power and authority.	(3) 2.1%	(26) 18.4%	(85) 60.3%	(27) 19.1%	2.96	.680
11. Staff members use multiple sources of data to make decisions about teaching and learning.	(4) 2.8%	(4) 2.8%	(74) 52.5%	(59) 41.8	3.33	.673

*n=141

Table 10

Frequency: Shared Values and Vision

*M=3.21, SD=.544

Dimension Statements	SD (1)	D (2)	A (3)	SA (4)	Mean	*SD*
12. A collaborative process exists for developing a shared sense of values among staff.	(4) 2.8%	(11) 7.8%	(79) 56.0%	(47) 33.3%	3.20	.699
13. Shared values support norms of behavior that guide decisions about teaching and learning.	(3) 2.1%	(7) 5.0%	(84) 59.6%	(47) 33.3%	3.24	.643
14. Staff members share visions for school improvement that have an undeviating focus on student learning.	(2) 1.4%	(10) 7.1%	(74) 52.5%	(55) 39.0%	3.29	.661
15. Decisions are made in alignment with the school's values and vision.	(2) 1.4%	(6) 4.3%	(77) 54.6%	(56) 39.7%	3.33	.627
16. A collaborative process exists for developing a shared vision among staff.	(2) 1.4%	(11) 7.8%	(81) 57.4%	(47) 33.3%	3.23	.648
17. School goals focus on student learning beyond test scores and grades.	(7) 5.0%	(20) 14.2%	(68) 48.2%	(46) 32.6%	3.09	.815
18. Policies and programs are aligned to the school's vision.	(3) 2.1%	(3) 2.1%	(89) 63.1%	(46) 32.6%	3.26	.605
19. Stakeholders are actively involved in creating high expectations that serve to increase student achievement.	(5) 3.5%	(20) 14.2%	(86) 61.0%	(30) 21.3%	3.00	.707
20. Data are used to prioritize actions to reach a shared vision.	(2) 1.4%	(4) 2.8%	(87) 61.7%	(48) 34.0%	3.28	.590

*n=141

*Frequency data: Collective learning and application***.** Table 11 presents the results of frequency data for collective learning and application for the district. The composite mean score for this dimension is M=3.29. The survey questions related to collective learning and

application included 10 survey items. Survey item 23 had a mean score of M=3.37, SD=.614, the highest mean score for a survey item within this dimension. This survey item asked participants to rate the following, *Staff members plan and work together to search for solutions to address diverse student needs*. 95.8% of participants rated this survey item as either agreeing with the statement or strongly agreeing with the statement. 42.6% of respondents strongly agree with the survey statement, supporting evidence collected in the interviews that PLC foundations are well established within the district's schools. Survey item 27 asked respondents to rate whether *school staff members and stakeholders learn together and apply new knowledge to solve problems.* This survey item had the lowest mean score within this dimension, M=2.99, SD=.732. and the highest standard deviation of the 10 survey items within this dimension for the school district. 21.2% of respondents either disagreed or strongly disagreed with this statement. This is contrary to survey item 23 where there was strong consensus that staff members plan and work together to search for solutions to address diverse student needs. Data collected from interviews suggest that although there are high levels of collective learning such as sharing ideas and strategies, the application from learning to teaching may not be as evident when measuring the effectiveness of interventions and supports to solve problems. This will be discussed further in the study's findings.

Table 11

Frequency: Collective Learning and Application

*M=3.29, D=.509

Dimension Statements	SD (1)	D (2)	A (3)	SA (4)	Mean	*SD*
21. Staff members work together to seek knowledge, skills and strategies and apply this new learning to their work.	(2) 1.4%	(2) 1.4%	(80) 56.7%	(57) 40.4%	3.36	.589
22. Collegial relationships exist among staff members that reflect commitment to school improvement efforts.	(2) 1.4%	(4) 2.8%	(76) 53.9%	(59) 41.8%	3.36	.613
23. Staff members plan and work together to search for solutions to address diverse student needs.	(2) 1.4%	(4) 2.8%	(75) 53.2%	(60) 42.6%	3.37	.614
24. A variety of opportunities and structures exist for collective learning through open dialogue.	(2) 1.4%	(11) 7.8%	(80) 56.7%	(48) 34.0%	3.23	.651
25. Staff members engage in dialogue that reflects a respect for diverse ideas that lead to continued inquiry.	(2) 1.4%	(5) 3.5%	(88) 62.4%	(46) 32.6%	3.26	.593
26. Professional development focuses on teaching and learning.	(2) 1.4%	(9) 6.4%	(84) 59.6%	(46) 32.6%	3.23	.628
27. School staff members and stakeholders learn together and apply new knowledge to solve problems.	(4) 2.8%	(26) 18.4%	(78) 55.3%	(33) 23.4%	2.99	.732
28. School staff members are committed to programs that enhance learning.	(2) 1.4%	(2) 1.4%	(81) 57.4%	(56) 39.7%	3.35	.587
29. Staff members collaboratively analyze multiple sources of data to assess the effectiveness of instructional practices.	(2) 1.4%	(6) 4.3%	(72) 51.1%	(61) 43.3%	3.36	.636
30. Staff members collaboratively analyze student work to improve teaching and learning.	(2) 1.4%	(5) 3.5%	(76) 53.9%	(58) 41.1%	3.35	.621

*n=141

As Hipp and Huffman (2003) describe, “As teachers apply what they have learned, reflect on the process, and in turn, discuss the results of their practice, doors open to

continuous learning through shared personal practice." Applying new knowledge to solve problems requires teachers to not only search for solutions but to apply the learning to solve the problem, reflect on the implementation of an intervention and discuss the results of that practice. This collective learning and application is foundational to effective PLCs.

*Frequency data: Shared personal practice***.** Table 12 presents the results of frequency data for shared personal practice for the district. The composite mean score for this dimension is M=3.18. The survey questions related to shared personal practice included 7 survey items. Survey item 23 had a mean score of M=3.43, SD=.625, the highest mean score for a survey item within this dimension. This survey item asked participants to rate the following, *Staff members informally share ideas and suggestions for improving student learning.* 95.7% of participants rated this survey item as either agreeing with the statement or strongly agreeing with the statement. 48.9% of respondents strongly agree with the survey statement, supporting evidence collected in the interviews that informal sharing of ideas and suggestions for improvement exists within the district's schools. During focus group interviews, two of the districts four schools stressed the importance of informal collaboration and sharing *in the hallways*. Survey item 32 asked respondents to rate whether *staff members provide feedback to peers related to instructional practices.* This survey item had the lowest mean score within this dimension, M=3.09, SD=.712. Research on PLCs reveals that shared personal practice is essential to becoming a PLC however it is the least evident attribute in most schools (Hipp & Weber, as cited in Hipp & Huffman, 2003). Although this survey item has the smallest mean, this dimension is moderately strong overall and this survey item is considerable strong.

Table 12

Frequency: Shared Personal Practice

*M=3.18, SD=.580

Dimension Statements	SD (1)	D (2)	A (3)	SA (4)	Mean	*SD*
31. Opportunities exist for staff members to observe peers and offer encouragement.	(4) 2.8%	(21) 14.9%	(71) 50.4%	(45) 31.9%	3.11	.757
32. Staff members provide feedback to peers related to instructional practices.	(4) 2.8%	(18) 12.8%	(81) 57.4%	(38) 27.0%	3.09	.712
33. Staff members informally share ideas and suggestions for improving student learning.	(2) 1.4%	(4) 2.8%	(66) 46.8%	(69) 48.9%	3.43	.625
34. Staff members collaboratively review student work to share and improve instructional practices.	(2) 1.4%	(12) 8.5%	(79) 56.0%	(48) 34.0%	3.23	.659
35. Opportunities exist for coaching and mentoring.	(3) 2.1%	(23) 16.3%	(71) 50.4%	(44) 31.2%	3.11	.744
36. Individuals and teams have the opportunity to apply learning and share the results of their practices.	(3) 2.1%	(11) 7.8%	(82) 58.2%	(45) 31.9%	3.20	.668
37. Staff members regularly share student work to guide overall school improvement.	(4) 2.8%	(17) 12.1	(77) 54.6%	(43) 30.5%	3.13	.726

*n=141

*Frequency data: Supportive conditions-relationships***.** Table 13 presents the results of frequency data for supportive conditions-relationships for the district. The composite mean score for this dimension is M=3.34. Based on the participant responses, supportive conditions-relationships is the strongest dimension in the school district. The survey questions related to supportive conditions-relationships included 5 survey items.

Table 13

Frequency: Supportive Conditions-Relationships

*M=3.34, SD=.590

Dimension Statements	SD (1)	D (2)	A (3)	SA (4)	Mean	Std. Dev.
38. Caring relationships exist among staff and students that are built on trust and respect.	(4) 2.8%		(54) 38.3%	(83) 58.9%	3.53	.650
39. A culture of trust and respect exists for taking risks.	(4) 2.8%	(11) 7.8%	(65) 46.1%	(61) 43.3%	3.30	.734
40. Outstanding achievement is recognized and celebrated regularly in our school.	(3) 2.1%	(6) 4.3%	(60) 42.6%	(72) 51.1%	3.43	.679
41. School staff and stakeholders exhibit a sustained and unified effort to embed change into the culture of the school.	(4) 2.8%	(15) 10.6%	(78) 55.3%	(44) 31.2%	3.15	.717
42. Relationships among staff members support honest and respectful examination of data to enhance teaching and learning.	(4) 2.8%	(6) 4.3%	(76) 53.9%	(55) 39.0%	3.29	.682

*n=141

Survey item 38 had a mean score of M=3.53, SD=.650, the highest mean score for a survey item within this dimension. This survey item asked participants to rate the following, caring relationships exist among staff and students that are built on trust and respect. 97.2% of participants rated this survey item as either agreeing with the statement or strongly agreeing with the statement. 58.9% of respondents strongly agree with the survey statement. Survey item 27 asked respondents to rate whether school staff and stakeholders exhibit a sustained and unified effort to embed change into the culture of the school. This survey item had the lowest mean score within this dimension, M=3.15, SD=.717. As the strongest PLC

dimension, all survey item mean scores ranged from 3.15 to 3.53. Principal and focus group interview data are supported by these findings.

*Frequency data: Supportive conditions-structures***.** Table 14 presents the results of frequency data for supportive conditions-structures for the district. The composite mean score for this dimension is M=3.17. The survey questions related to supportive conditions-structures included 10 survey items. Survey item 49 had a mean score of M=3.35, SD=.611, the highest mean score for a survey item within this dimension. This survey item asked participants to rate the following, *the proximity of grade level and department personnel allows for ease in collaborating with colleagues.* 95.7% of participants rated this survey item as either agreeing with the statement or strongly agreeing with the statement. Focus group interview data are supported by this with frequent references to proximity of colleagues for informal collaboration. 54.6% of respondents agree with the survey statement. Survey item 45 asked respondents to rate whether f*iscal resources are available for professional development.* 20.6% of respondents either strongly disagreed or disagreed with this statement. This survey item had the lowest mean score within this dimension, M=3.03, SD=.801however had one of the largest standard deviations.

Table 14

Frequency: Supportive Conditions-Structures

*M=3.17, SD=.557

Dimension Statements	SD (1)	D (2)	A (3)	SA (4)	Mean	*SD*
43. Time is provided to facilitate collaborative work.	(2) 1.4%	(11) 7.8%	(79) 56.0%	(49) 34.8%	3.24	.654
44. The school schedule promotes collective learning and shared practice.	(2) 1.4%	(10) 7.1%	(82) 58.2%	(47) 33.3%	3.23	.640
45. Fiscal resources are available for professional development.	(7) 5.0%	(22) 15.6%	(72) 51.1%	(40) 28.4%	3.03	.801
46. Appropriate technology and instructional materials are available to staff.	(7) 5.0%	(12) 8.5%	(76) 53.9%	(46) 32.6%	3.14	.771
47. Resource people provide expertise and support for continuous learning.	(4) 2.8%	(14) 9.9%	(88) 62.4%	(35) 24.8%	3.09	.675
48. The school facility is clean, attractive and inviting.	(7) 5.0%	(7) 5.0%	(80) 56.7%	(47) 33.3%	3.18	.743
49. The proximity of grade level and department personnel allows for ease in collaborating with colleagues.	(2) 1.4%	(4) 2.8%	(77) 54.6%	(58) 41.1%	3.35	.611
50. Communication systems promote a flow of information among staff members.	(5) 3.5%	(13) 9.2%	(82) 58.2%	(41) 29.1%	3.13	.716
51. Communication systems promote a flow of information across the entire school community including: central office personnel, parents, and community members.	(9) 6.4%	(14) 9.9%	(77) 54.6%	(41) 29.1%	3.06	.804
52. Data are organized and made available to provide easy access to staff members.	(3) 2.1%	(13) 9.2%	(78) 55.3%	(47) 33.3%	3.20	.689

*n=141

Research Question 5. What are faculty perceptions of specific PLCA-R survey items related to DDDM? (7 item composite score)

Quantitative analysis of Research Question 5. The following sections and tables present the findings from a constructed subscale created for this study based upon specific survey items from the PLCA-R. This information is provided to enhance the research findings from the qualitative segment of the study, principal interviews and teacher focus groups as well as to make comparisons among the PLCA-R dimension data explored for research question 4.

Table 15 provides information that describes the status of professional learning community practices for the school district as measure by the PLCA-R. The table includes mean scores, standard deviations, skewness and kurtosis for each of the five PLC dimensions assessed by the survey. There are five dimensions of professional learning communities assessed by the survey, table 16 reports seven sets of scores. This includes the five dimensions, including two components of supportive conditions, structure and relationships, reported separately. The seventh set of scores are from a newly created variable for the purposes of this study. The developers of the original assessment, the Professional Learning Community Assessment (PLCA) determined that the collection, interpretation and use of data were missing from this original instrument (Hipp & Huffman, 2003). The Professional Learning Community Assessment-Revised integrated specific items related to date into the assessment. The researcher isolated the seven survey items related to data creating a new subscale. The purpose of creating this new variable is to explore faculty perceptions of professional learning communities related to these specific data survey questions.

Table 15

Data Subscale Descriptive Statistics

*School District

	M	*SD*	*Skewness*	*Kurtosis*
Shared and Supportive Leadership	3.18	.581	-.898	1.752
Shared Values and Vision	3.20	.551	-.689	2.217
Collective Learning and Application	3.27	.517	-.909	3.676
Shared Personal Practice	3.19	.580	-.746	1.819
Supportive Conditions				
Relationships	3.35	.595	-1.170	2.464
Structure	3.16	.558	-.754	2.023
Data	**3.28**	**.531**	**-1.076**	**3.358**

*n=141

The composite mean score for the data construct (M=3.28, SD= .531) suggests there are common perceptions about the survey items related to data. Supportive conditions-relationships remains the strongest PLC dimension with a minimal mean score increase from M= 3.34, SD= .590 to M=3.35, SD= .595. The *data dimension* score is relatively strong and has a kurtosis score of 3.358 indicating that many of the scores for this dimension are located near the mean score for that dimension. Supportive conditions-relationships remained the strongest dimension with a minimal increase from M=3.34, SD=.590 to M=3.35, SD=.595. The dimension of supportive conditions-structures remains the lowest mean score of all professional learning community dimensions with a minimal decrease from M=3.17, SD=.557 to M=3.16, SD=.558. Other distributional characteristics, skewness and kurtosis, remain consistent from before the data survey items were extracted with most PLC

dimension subscales remaining within the normal range of +/-2. The researcher notes that the kurtosis score for collective learning and application changed from 4.203 to 3.676 indicating that without the two survey items related to data this dimension has a wider distribution of scores from the mean composite score of M=3.27. This suggests that there is a wider variation of thoughts and perceptions related to collective learning and application when the data questions are extracted.

To draw more in-depth conclusions about the data dimension constructed for this segment of the study, the researcher shares descriptive statistics for each school in table 16. This includes a subscale mean score and standard deviation for the data dimension constructed from the seven survey items. This serves to draw better insight into faculty perceptions of the data dimension by individual schools where perceptions may vary. School 2 has a composite mean score for the data dimension of M=3.37, SD=454, the strongest data score among the four schools. All the other dimension mean scores for this school reduced when the data items were extracted and analyzed in isolation. The shared and supportive leadership dimension had the largest change in mean scores reducing from M=3.45, SD=.411 to M=3.08, SD=.697. This suggests that the participants from School 2 not only perceive data as an important part of professional learning communities but as a critical component of shared and supportive leadership. School 3 has a composite mean score for the *data dimension* of M=3.08, SD=.429, the lowest mean score among the four schools. Three of the dimension mean scores for this school increased slightly when the data survey items were extracted and analyzed in isolation. Shared values and vision, supportive conditions-relationships and supportive conditions- structures had minimal increases in mean scores of

.01. This suggests that some teachers do not feel comfortable with data use within these PLC dimensions.

Table 16

*School-level Descriptive Statistics with Data Subscale

	School One		School Two		School Three		School Four	
	M/SD		M/SD		M/SD		M/SD	
Shared and Supportive Leadership	3.08	.697	3.08	.697	2.92	.518	3.11	.554
Shared Values and Vision	3.11	.675	3.11	.675	3.01	.414	3.25	.581
Collective Learning and Application	3.18	.672	3.18	.672	3.15	.372	3.34	.505
Shared Personal Practice	3.12	.707	3.12	.707	2.92	.477	3.23	.611
Supportive Conditions: Relationships	3.26	.683	3.26	.683	3.33	.662	3.36	.573
Supportive Conditions: Structures	3.14	.701	3.14	.701	3.06	.559	3.18	.548
Data	**3.25**	**.674**	**3.37**	**.454**	**3.08**	**.429**	**3.31**	**.499**

*n=141

Frequency data: Data dimension subscale. *PLCA-R frequency data allowed the* researcher to summarize each of the 7 survey items related to data and allowed for the identification of any errors or mistakes that may have occurred during data collection. Survey items for the *data dimension* give insight into perceptions of individual survey questions that

contribute to the composite mean scores of the dimension. This allows the researcher to attribute dimension strengths and weaknesses for the school district. Mean scores and standard deviations are also presented in each survey item to support any conclusions drawn from the data. Table 17 presents the results of frequency data for the *data dimension* for the district. The composite mean score for this dimension is M=3.28. The survey questions related to data included 7 survey items. Survey item 29 had a mean score of M=3.36, SD=.636, the highest mean score for a survey item within this dimension. This survey item asked participants to rate the following, staff members collaboratively analyze multiple sources of data to assess the effectiveness of instructional practices. 94.4% of participants rated this survey item as either agreeing with the statement or strongly agreeing with the statement. Principal interview and focus group interview data are supported by this data with frequent references to data being at the center of their professional learning communities. Survey item 37 asked respondents to rate whether staff members regularly share student work to guide overall school improvement. 14.9% of respondents either strongly disagreed or disagreed with this statement. This survey item had the lowest mean score within this dimension, M=3.13, SD=.726 however had one of the largest standard deviations.

Research Question 6. Is there a correlation between PLCA-R dimensions?

Quantitative analysis of Research Question 6. Correlation analysis were used to study research questions six with the intentions of measuring the relationship between Professional Learning Community dimensions; Shared and Supportive Leadership, Shared Values and Vision, Collective Learning and Application, Shared Personal Practice, Supportive Conditions: Relationships and Supportive Conditions: Structures. Correlational

statistics are often used to describe the relationship between two or more variables in a study (Gall, Gall, & Borg, 2007).

Table 17

Data Subscale-*District-wide

Dimension Statements	SD (1)	D (2)	A (3)	SA (4)	Mean	*SD*
11. Staff members use multiple sources of data to make decisions about teaching and learning.	(4) 2.8%	(4) 2.8%	(74) 52.5%	(59) 41.8	3.33	.673
20. Data are used to prioritize actions to reach a shared vision.	(2) 1.4%	(4) 2.8%	(87) 61.7%	(48) 34.0%	3.28	.590
29. Staff members collaboratively analyze multiple sources of data to assess the effectiveness of instructional practices.	(2) 1.4%	(6) 4.3%	(72) 51.1%	(61) 43.3%	3.36	.636
30. Staff members collaboratively analyze student work to improve teaching and learning.	(2) 1.4%	(5) 3.5%	(76) 53.9%	(58) 41.1%	3.35	.621
37. Staff members regularly share student work to guide overall school improvement.	(4) 2.8%	(17) 12.1	(77) 54.6%	(43) 30.5%	3.13	.726
42. Relationships among staff members support honest and respectful examination of data to enhance teaching and learning.	(4) 2.8%	(6) 4.3%	(76) 53.9%	(55) 39.0%	3.29	.682
52. Data are organized and made available to provide easy access to staff members.	(3) 2.1%	(13) 9.2%	(78) 55.3%	(47) 33.3%	3.20	.689

*n=141

Table 18 presents Pearson product moment between subscales of the PLCA-R as the unit of analysis. The results in table 18 indicate all 15 (100%) of the correlations were statistically significant ($p<.01$). The strongest correlation ($r=.799$) are between the variables of shared and supportive leadership and shared values and vision. This finding suggests that leaders play a significant role in the implementation and sustainability of professional learning communities when a vision for learning is centered around common values established by the school's leader. This finding supports Hipp and Huffman's (2003) position that the central task of a leader is to involve others in creating a shared vision for the organization. When teachers have goals established and decision-making is shared strong PLCs are developed.

Hypothesis 1. A statistically significant relationship does not exist between the dimensions of professional learning communities as measured by the PLCA-R?

Results of the bivariate correlations indicate that a strong, statistically significant and positive relationship exists between PLC dimensions, rejecting the null hypothesis. All correlations between subscales were statistically significant ($p<.001$), and were substantial in magnitude.

Research Question 7. Is there a correlation between specific PLCA-R survey items related to data and PLCA-R dimensions?

Quantitative analysis of Research Question 7. Correlation analysis were used to study research questions seven with the intentions of measuring the relationship between Professional Learning Community dimensions; Shared and Supportive Leadership, Shared Values and Vision, Collective Learning and Application, Shared Personal Practice, Supportive Conditions: Relationships and Supportive Conditions: Structures.

Table 18

*Correlation: PLCA-R Scales of Shared and Supportive Leadership (SSL), Shared Values and Vison (SVV), Collective Learning and Application (CLA), Shared Personal Practice (SPP), Supportive Conditions: Relationships (SCR), Supportive Conditions: Structures (SCS) and Data Scale (DS).

Subscale	SSL	SVV	CLA	SPP	SCR	SCS
Shared and Supportive Leadership (11)[a]	1	.799	.726	.699	.695	.746
Shared Values and Vison (9)[a]		1	.797	.723	.713	.777
Collective Learning and Application (10)[a]			1	.771	.715	.734
Shared Personal Practice (7)[a]				1	.711	.776
Supportive Conditions: Relationships (5)[a]					1	.764
Supportive Conditions: Structures (10)[a]						1

[a] Number of items in the scale
Note. All Pearson correlations are significant with p<.01
*n=141

Correlational statistics are often used to describe the relationship between two or more variables in a study (Gall, Gall, & Borg, 2007). Table 19 presents Pearson product moment between subscales of the PLCA-R as the unit of analysis. The results in table 19 indicate all 21 (100%) of the correlations were statistically significant (p<.01). The strongest correlation (r=.835) was between the new *data dimension* subscale and shared values and vision. This finding suggests that high expectations and data use are both highly valued. It also suggests that the schools vision for student learning and teacher learning are dependent upon the use of data during decision-making. Consequently, the data dimension subscale showed strong and positive correlations with two other PLCA-R subscales, Collective learning and application (R=.822) and shared personal practice (R=.816). The researcher

notes that when the survey items related to data were isolated for this part of the study, the findings suggest that shared values and vision established by the school leader based upon data have a significant influence over the direction and vision of how PLCs operate. Establishing these values or norms for PLCs with a common purpose or goal based upon data can impact how PLCs operate when data is plays a significant role in the PLC process. This is supported by the strength of the correlations of Collective learning and application and shared personal practice. These dimensions both require teachers to engage in PLCs by looking at student work to engage in the process of inquiry and learning. This encourages teachers to share their personal practices, particularly when seeking intervention strategies to improve student outcomes.

Hypothesis 2. A statistically significant relationship does not exist between the data scale and the dimensions of professional learning communities as measured by the PLCA-R.

Results of the bivariate correlations indicate that a strong, statistically significant and positive relationship exists between the data scale and each of the PLC dimensions, rejecting the null hypothesis. All correlations between subscales were statistically significant ($p<.001$), and were substantial in magnitude.

Table 19
*Correlation: PLCA-R Scales of Shared and Supportive Leadership (SSL), Shared Values and Vison (SVV), Collective Learning and Application (CLA), Shared Personal Practice (SPP), Supportive Conditions: Relationships (SCR), Supportive Conditions: Structures (SCS) and Data Scale (DS).

Subscale	SSL	SVV	CLA	SPP	SCR	SCS	DS
Shared and Supportive Leadership (10)[a]	1	.778	.699	.676	.679	.740	.719
Shared Values and Vison (8)[a]		1	.777	.698	.700	.770	.835
Collective Learning and Application (8)[a]			1	.746	.704	.729	.822
Shared Personal Practice (6)[a]				1	.696	.765	.816
Supportive Conditions: Relationships (4)[a]					1	.746	.748
Supportive Conditions: Structures (9)[a]						1	.750
Data Scale (7)[a]							1

Note. All Pearson correlations are significant with p<.01
*141

Chapter Summary

This chapter presented the results from this study. Both qualitative and quantitative data were collected for this mixed methods design. The qualitative data were comprised of data collected from principal interviews and teacher focus group interviews. The quantitative segment of this study included data collected using the Professional Learning Community Assessment-Revised (PLCA-R). It is believed that this concurrent nested mixed method approach allowed for valid conclusions to be drawn about how data are used within the professional learning community process for Response to Intervention.

CHAPTER 5: DISCUSSION

Introduction

This chapter presents an overview of the research study. Chapter 5 presents the findings from the qualitative and quantitative research questions created for this concurrent nested mixed methods study that seeks to answer the overarching question: *To what extent do teachers use data-driven decision making in Professional Learning Communities for Response to Intervention?* A summary of the major findings and conclusions are presented. This chapter concludes with practical and theoretical implications from the findings.

Overview of the Study

A growing number of schools are implementing PLCs to address school improvement, staff engage with data to identify student needs and determine instructional interventions. This is a starting point for engaging in the iterative process of learning for the teach in order to increase student learning (Hord & Sommers, 2008). The iterative process of data-driven decision making within PLCs may isolate true PLCs into simplified data meetings, while a professional learning community can more accurately be described as a process (Jessie, 2007).

This mixed methods case study addressed how data is used within the professional learning community process for Response to Intervention (RTI). The research study comprehensively investigates the personal experiences of faculty members related to three key constructs described in the conceptual model of an Organizational Learning Culture illustrated in *Figure 2*.

- Data-driven Decision Making
- Professional Learning Communities (PLCs)

- Response to Intervention (RTI)

Although the qualitative phase of this study was the primary focus of the investigation, the researcher quantitatively explored the dimensions of PLCs to supplement the qualitative findings. According to Creswell, 2014, "When an investigator combines both quantitative data along with personal experiences (qualitative data), there is a better understanding of the research problem than either form of data alone (p. 2)." All schools within the educational agency participated in the research study, and are currently implementing the professional learning community process while using data to drive instructional decisions for Response to Intervention.

To develop rich descriptions of Data-driven decision making, PLCs, and Response to Intervention, one-on-one face to face interviews were conducted with each school principal in the district. Additionally, focus group interviews with teachers at each school provided rich descriptions related to the three key constructs. Perceptions of Professional Learning Communities were also collected through a quantitative survey method to describe the district's engagement in PLCs.

Review of major constructs. This study is founded upon three major theoretical constructs.

Schlechty's (1993) research related to school improvement defines improvement as "focusing on doing the same thing better with the intent of changing and enhancing the performance of individuals within existing systems" (p. 46). As educational leaders address school improvement, challenges exist when balancing educational mandates with student learning. The quest to educate while simultaneously satisfying federal and state policy has left educators with new standards to implement and assess; new evaluation systems to

measure teacher effectiveness; meanwhile leaving schools overwhelmed with data. Data generated in schools has the intent of informing educators by guiding decision making for student learning; however, teachers and school leaders are pressured with local, state and federal mandates so the intent of data use is often lost. The process of systematically gathering and analyzing data to inform instruction for students can be overshadowed with the various programs and policies that continue to surmount one another.

Figure 1 (Chapter 1) depicts a typical approach in many school districts, referred to as an accountability culture. This is where the focus of the school is upon student test scores, where data are used mainly to identify problems and monitor compliance, all while teacher and principal voices are precluded (Park, Daly, & Guerra, 2013). In this type of accountability culture, the emphasis is placed upon *what* has to be accomplished and data are used to avoid sanctions and complete mandated reports or plans. According to Firestone (2009), principals become enforcers of central office policy, often finding themselves caught between central office and their own school staffs. As *Figure 1* suggests, this outside-in approach emphasized the dissemination of professional mandates to school staff for any new initiative, or *what* needs to be accomplished, such as RTI, new state standards, new teacher evaluation systems, etc. The various tasks that are added to teacher responsibilities are considered *what* things that need to be accomplished in schools. In typical school settings, these tasks are framed by the school leader as priorities for school improvement and student learning. Educational reform efforts, such as Response to Intervention, are considered one of the many *what* tasks for teachers and schools to implement. Although the intention of RTI is to monitor the response a student has to an intervention, it is often perceived by teachers as

another *what*; something that needs to be accomplished in order to monitor compliance rather than to improve student learning and outcomes.

Firestone (2009) contends that teachers have access to professional development in an accountability culture, but it is generally limited to one-shot workshops and the emphasis is always heavily placed upon increasing scores. *Figure 1* represents the outside-in approach to school reform present in an accountability culture where emphasis is placed upon schools as to *what* needs to be accomplished, and sometimes teachers receive professional development as to *how* to accomplish a given task or initiative. The conceptual model contends that very rarely do schools address *why* to embark on a specific initiative or task to improve student learning. In an accountability culture where a greater emphasis placed upon test scores and compliance with mandates. *Figure 1* graphically represents an outside-in approach to RTI where the emphasis is stressed upon *what* RTI is rather than upon *how* professional educators can work collectively and purposefully to create and sustain a culture of learning for all students and adults as Hipp and Huffman described Professional Learning Communities (2010). This model also described how even less significance is placed upon *why* data should inform the selection of interventions and supports to improve outcomes for struggling students in Response to Intervention. In this model, the data used is primarily to identify students who are poor performers and to monitor absolute scores in an accountability system based upon adequate yearly progress.

According to Sinek's *golden circle* (TED Talk, 2009), great leaders inspire action by beginning with the adverse approach, beginning with *why.* In the conceptual model shown in *Figure 2*, PLCs served as the conduit within an *Organizational Learning Culture*, bridging data-driven decisions and RTI. This allowed for emphasis to be placed upon student learning

and instructional improvement while including teacher and principal voices (Park, Daly, & Guerra, 2013).

The *Organizational Learning Culture model* depicted in *Figure 2* (Chapter 1) describes how teachers must first understand student data to inform decision-making. The process of data-driven decision making allows teachers to first understand *why* changes to instruction may be necessary. Once teachers understood the significance of *why* change is needed for student or school improvement, the professional learning community determined *how* to act or engage in collective and purposeful learning for both student and teacher. According to Taylor (1986), processing of information is a vital aspect of human behavior and is a critical input to the decision process (Taylor, 1986). In this model, professional learning communities served as the process in which teachers engaged in an iterative process based upon student data (*why*), through continuous cycles of learning within PLCs (*how*) in order to make critical decisions to address the needs of students, RTI *(what*). Contrary to the accountability culture model in *Figure 1*, the organizational learning culture is based on continuous learning for students and teachers. This is where progress was monitored and instructional practices are adjusted based on student need rather than solely to meet accountability demands.

The conceptual model of an Organizational Learning Culture in *Figure 2* depicted the three key constructs that were the focus of this study:

- Data-driven decision making
- Professional Learning Communities (PLCs)
- Response to Intervention (RTI)

The overarching goal of this study was to clearly describe the three key constructs described in the conceptual model of an Organizational Learning Culture illustrated in *Figure 2*. This research was focused upon:

- Data-driven Decision Making
- Professional Learning Communities (PLCs)
- Response to Intervention (RTI)

The three key constructs in this study contributed to the development of research questions for the study.

Research Questions and Hypotheses

Seven research questions and two hypotheses address the methodology of this study. The initial three research questions are addressed through qualitative data collection from the principal interviews and teacher focus group interviews. Research questions four and five are addressed quantitatively through descriptive statistics data collected from the PLCA-R while research questions six and seven are specifically addressed through correlational analysis. The hypothesis for research question six predicts no statistically significant relationship exists between the dimensions of professional learning communities. The hypothesis for research question seven predicts no statistically significant relationship exist between the data construct and the dimensions of professional learning communities. The mixed method research study was guided by the following research questions.

Methodology

Mixed methods were used to answer the research questions and test the hypotheses in this study. Qualitative data were collected through principal interviews at each of the four schools in the district as well as through teacher focus group interviews at each school. The

data were analyzed for themes based upon the major constructs of the study that contributed to the findings reported.

Quantitative data were collected through the administration of the PLCA-R. Data analyses include descriptive statistics for each PLC dimension for the district and for each school. Frequency data is also included for an in-depth analysis of individual survey items. Bivariate correlational statistics are included to explore relationships among PLC dimensions and the data subscale created for this study. The following section outlines the research questions and hypotheses as well as the major findings of this study and conclusions and implications of the study.

Research questions and the research hypotheses

Research Question 1(Qualitative). What are faculty perceptions of data-driven decision making for Response to Intervention as measured by principal interviews and teacher focus group interviews?

Research Question 2 (Qualitative). What are faculty perceptions relative to the benefits of collaboration within PLCs when analyzing student data as measured by principal interviews and teacher focus group interviews?

Research Question 3 (Qualitative). How does data-driven decision making within the PLC process impact Response to Intervention (RTI)?

Research Question 4 (Quantitative) What are faculty perceptions of Professional Learning Communities as measured by the PLCA-R?

Research Question 5 (Quantitative). What are faculty perceptions of specific PLCA-R survey items related to DDDM? (7 item composite score)

Research Question 6 (Quantitative). Is there a correlation between PLCA-R dimensions?

Hypothesis 1. A statistically significant relationship does not exist between the dimensions of professional learning communities as measured by the PLCA-R?

Research Question 7 (Quantitative). Is there a correlation between specific PLCA-R survey items related to data and PLCA-R dimensions?

Hypothesis 2. A statistically significant relationship does not exist between the data construct and the dimensions of professional learning communities as measured by the PLCA-R.

Major Findings and Conclusions

Four major findings resulted from the qualitative and quantitative data analysis reported in Chapter 4. The purpose of the study developed from the major constructs identified and allowed the researcher to draw conclusions based upon the data collected from principal interviews, teacher focus group interviews and responses to the PLCA-R. All major findings are useful and informative for present and future use in education. The next sections of this chapter present the findings and conclusions of this study. The overarching goal of this research is to study how data are used in professional learning communities for Response to Intervention.

Major finding number one. School principals as well as teachers report that data drives decision for grouping students for interventions.

Conclusion. RTI is a framework for providing high-quality instruction and intervention based upon students' needs that includes the practice of progress monitoring and

the use of data to make educational decisions related to instruction, intervention, grouping practices and duration of interventions (Reutebuch, 2008). Teachers describe the importance of analyzing student assessment data to determine gaps in learning and assign students to interventions based upon a need or deficit. The study concluded that although grouping looks different among the four schools in the study, the schools do share in the common practice of analyzing data within their PLC processes to match students to available RTI resources, commonly grouping for intervention.

Information gathered from the principal and focus group interviews show a majority of teachers and principals perceived grouping as a key intervention for students. Principals shared how teachers analyze student work to assign students to intervention groups:

- S1: *Intervention Groups*
- S2: *Prime Time*
- S3: *R.O.A.R.*
- S4: *Boost*

The frequency and duration of these groups vary from school to school as well as the level of intervention within each group. When the teacher focus group participants were asked how they use data to make decisions about teaching and learning, they all referred to grouping students as intervention.

The RTI framework is designed to address the needs of all students, not only those identified as at-risk or in need of intervention. All students receive class level or school-wide core academic and social instruction allowing for differentiated instruction based upon student need (Glover & Diperna, 2007). The researcher noted that when students attended

their group enrichment or intervention, the level of intensity of the intervention as well as the measurement used to monitor intervention progress varies from school to school.

Quantitative data support that the different levels of PLC implementation at each school contribute to the varying degrees of grouping implementation of RTI practices. District-wide analysis of PLCA-R data ranked supportive conditions-structures the lowest with a mean score of M=3.17, SD=.557. Structural conditions in professional learning communities include time for staff members to meet and space for collaborative work to take place (Hord & Sommers, 2008). Hord (1997) describes time as both a barrier (when not available) and as a supportive factor (when available) to schools engaging in school improvement. Schools implementing RTI engage in progress-monitoring of student data to drive service delivery of instruction and interventions for students who need additional support. One researched noted that a positive result of having frequent opportunities to plan is that staff members have opportunities to share their strengths as well as their needs (Robins & Antrim, 2013).

Major finding number two. School principals and teachers consider relationships a supportive condition of PLCs that allows teachers to make instructional and intervention decisions based upon data.

***Conclusion*.** Data collected for this research suggest there are strong relationships in PLCs where an openness to improvement exists. Many teachers attribute the supportive presence of their administrators as a key contributor to the positive relationships within their PLCs. Teachers felt that the presence of an administrator in PLCS contributes to honest and respectful examination of data. Although teachers were involved in the discussions and decision making about instructional practice, focus groups shared how their school leaders

served as facilitators during their PLC time, contributing to the conversation as needed. Focus groups attribute this to what many participants referred to as a culture in their schools that allows for honest and respectful examination of data. When describing this culture, there were also frequent references to the structures that are in place in the school, allowing for what one participant (FG3) called a "safe" environment. The structures mentioned during most of the focus group interviews described having norms established for when they meet in PLCs. Boyd describes factors that create meaningful and stable cultures to include norms that support ongoing learning and improvement (as cited in Hipp & Huffman, 2003).

Quantitative data collected for this study support these findings. Based on survey responses from the PLCA-R, supportive conditions-relationships is the strongest PLC dimension with a score of M=3.34, SD=.590. When analyzing frequency data for this dimension, the researcher notes that the highest mean score for survey item 38. This question asks respondents to rate whether *caring relationships exist among staff and students that are built on trust and respect.* 97.3% of participants agreed or strongly agreed with this statement with a mean score of M=3.53, SD=.650

Major finding number three. Assessment practices for gauging a student's response to an intervention vary by school grade levels.

***Conclusion*.** The data collected has shown evidence that although all schools review historical data annually, formatively assessing a student's response to an intervention vary from school to school. Both elementary schools show evidence of formatively assessing students to progress monitor throughout the school year. Response to Intervention requires frequent progress monitoring to make decisions about changes in instruction and apply student response data to those decisions (Elliott, 2008). All administrators interviewed

indicated that professional learning communities are used to share data with teachers and to make instructional decisions for all students, however systematic monitoring of student progress and making decisions about instruction are less frequent and consistent in the middle and high schools. Formative assessments aligned to standards are critical in determining service delivery for students in RTI to ensure that those students in need are matched with appropriate services (Glover & Diperna, 2007). The need for progress monitoring of student data to make decisions about intensity and duration of interventions (tiers) for student improvement also requires increased adult attention and monitoring (Sugai & Horner, 2006).

Quantitative data collected for this study support these findings. Based on survey responses from the PLCA-R, supportive conditions-structures is the weakest PLC dimension with a score of M=3.17, SD=.557. When analyzing frequency data for this dimension, the researcher notes that survey item 51 ranked second lowest. The question asks respondents to rate whether *communication systems promote a flow of information across the entire school community including: central office personnel, parents, and community members.* The mean score for this survey item, M=3.06, SD= .804, is relatively strong however the standard deviation has the widest variance among the dimension survey items. Communication structures may contribute to how formative assessments are implemented at each school.

Major finding number four. Perceptions of teachers and school leaders indicate that the use of data in PLCs plays a significant role in the RTI process.

Conclusion. Research indicates that RTI should be based on problem-solving models that use progress monitoring to gauge a student response to an intervention to determine the intensity of the continued intervention and increase the probability of success for the student

(Batsche et al., 2005). This study shows that teachers consistently review data and implement PLCs with moderate to high levels of fidelity. This is supported by the quantitative data from the PLCA-R. Teachers have developed an effective process for identifying students needing RTI and their specific deficits. For service delivery of RTI to be successful, teachers must ensure that students in need are matched with appropriate services (Glover & Diperna, 2007). Grouping practices and duration of intervention should not be limited to a one-size fits all approach. For teachers to match intervention to student need they must have a shared vision for what intervention is, its purpose and the process for service delivery within their classrooms and schools. Systematically monitoring student progress and making decisions about instructional needs for students within the RTI process are critical when considering service delivery. When teachers use student data through progress monitoring, students learn more, teacher decision-making improves and students become more aware of their own performance (Safer, 2005).

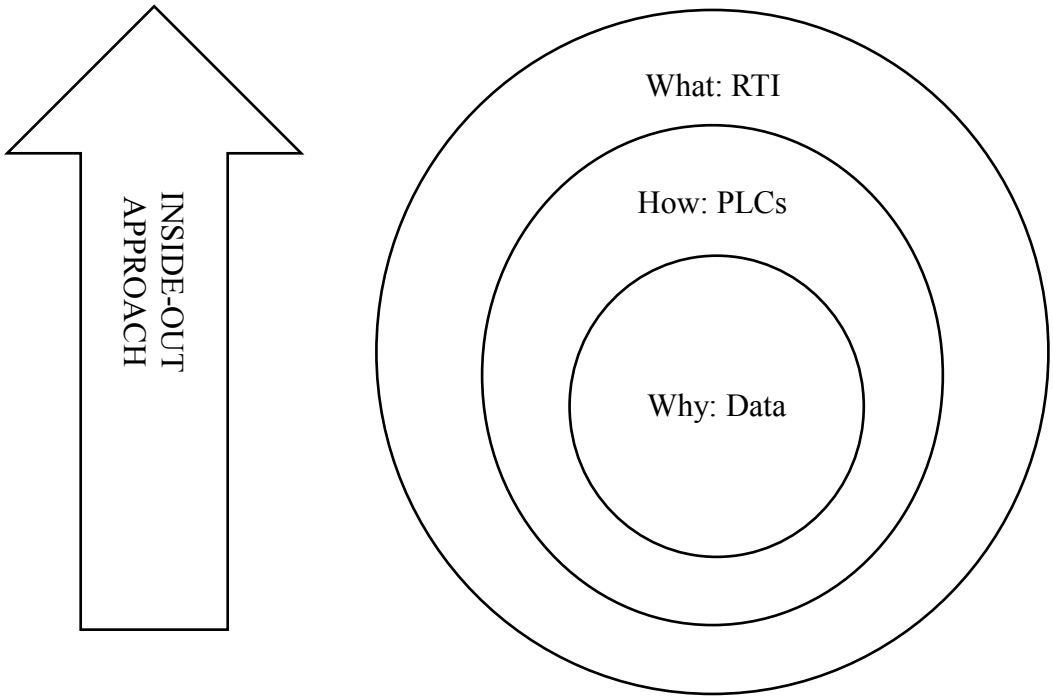
Discussion of Implications of Major Findings

This section provides an in-depth discussion of the implications of the major findings as they relate to each construct defined for the study. The Organizational Learning Culture model depicted in *Figure 2* describes how teachers must first understand student data to inform decision-making. The process of *data-driven decision making* allows teachers to first understand why changes to instruction may be necessary. Once teachers understood the significance of why change is needed for student or school improvement, the *professional learning community* determines how to act or engage in collective and purposeful learning for both student and teacher. In this model, as it applies to *Response to Intervention*. According to Taylor (1986), processing of information is a vital aspect of human behavior

and is a critical input to the decision process (Taylor, 1986). In this model, professional learning communities served as the process in which teachers engaged in an iterative process based upon student data (why), through continuous cycles of learning within PLCs (how) to make critical decisions to address the needs of students, RTI (what).

Figure 2

Organizational Learning Culture



Implications for Theory, Practice, Leadership and Future Research

In the previous sections, the major findings and conclusions of this study have been revealed. The following section discusses the implications related to theory, practice, leadership and future research. This mixed methods study is considered important as it offers a model for organizations to use data as the basis for change. Informed decision-making cannot happen in isolation so professional learning communities provide the process for collaborative decision making, in this study for RTI decisions.

Implications related to conceptual and theoretical concerns. The research conducted related to the conceptual model of an *Organizational Learning Culture* is consistent with findings from other researchers, particularly the construct of data-driven decision making. Research suggests that the effective use of data to support positive outcomes for both educators and students require the ability to build capacity for those educators to effectively access, understand and apply data (Campbell & Levin, 2009). Using data to determine appropriate instructional practices or appropriate interventions or supports requires teachers to engage in the process of systematically gathering and analyzing data to inform decisions (Marsh, Pane, & Hamilton, 2006). Often, this process can be guided by the cultural emphasis in which data use exists.

RTI is strongly guided by child outcome data to make accurate decisions about the early identification of students with academic or behavioral problems as well to monitor the effectiveness of general and remedial instruction or intervention (Batsche et al., 2005). This process of implementing high quality instruction and interventions based upon student need requires educators to collect and analyze data relevant to student progress and make important educational decisions based upon the needs of all students while continuously monitoring and making adjustments as needed. Batsche et al. (2005) maintain that the selection and implementation of scientifically based instruction/intervention increases but does not guarantee positive individual response to a given intervention and therefore understanding student learning rates is critical to making decisions about intensity and duration of interventions for students in RTI (p. 5). RTI is used to evaluate the effectiveness of basic instruction in meeting the needs of all students by assigning students to specific

evidence-based interventions designed to improve their rate of learning or behavior (Glover & Diperna, 2007).

The data collected in this study provides evidence that PLCs play a significant role in how data are used throughout the district. As the qualitative and quantitative data suggest, teachers are familiar with data analysis and rich discussions do take place in PLCs related to the data and strategies to improve student outcomes. It is believed that progress monitoring is vital to the success of RTI, including frequent and informal assessments to monitor a student's response to an intervention and adjust as needed. This study suggests that PLCs are more than data meetings. The iterative process of data-driven decision making within PLCs may isolate true PLCs into simplified data meetings, while a professional learning community can more accurately be described as a process (Jessie, 2007).

This study provides further insight into the role of data for decision-making where PLCs serve as the conduit within an Organizational Learning Culture, bridging data-driven decisions and RTI. This allows for emphasis to be placed upon student learning and instructional improvement while including teacher and principal voices (Park, Daly, & Guerra, 2013).

Implications for practice. The following section shares implications for school leaders as well as district leadership.

***School leaders*.** The effective use of data is essential to professional learning communities and becomes a part of the school's culture. School leaders are responsible for ensuring that PLCs engage in a process of identifying current levels of student achievement, establishing a goal to improve the current level of student achievement, and working together to achieve goals while providing periodic evidence of progress (Dufour, 2004).

Administrative support during PLCs serves to ensure that periodic evidence of progress are the focus of the work to meet student goals and expectations. This not only enforces the purpose of the work but improves relationships between teachers and leaders.

This study confirms the importance of assessment data and how it informs decision-making. School leaders must move away from an accountability culture where data is used for compliance and to monitor absolute scores in an accountability system based upon adequate yearly progress. Formative assessment data should inform decision-making when teachers and school leaders engage in iterative cycles of investigation resulting in instructional decisions and include methods for progress monitoring. Formative assessments aligned to standards are critical in determining service delivery for students in RTI to ensure that those students in need are matched with appropriate services (Glover & Diperna, 2007). The need for progress monitoring of student data to make decisions about intensity and duration of interventions (tiers) for student improvement also requires increased adult attention and monitoring (Sugai & Horner, 2006). As instructional leaders, principals must learn to collect data related to these cycles of investigation to determine fidelity of implementation and refine the process as needed. Leaders need to enable their teacher to be responsive when the duration or intensity of interventions do not improve student learning. This means leaders must empower teachers to move beyond data use to identify students needing RTI and assigning prescribed interventions to PLCs of learners, studying the data, implementing interventions and measuring their effectiveness.

***District leaders*.** Educational leaders benefit from providing consistent opportunities for job-embedded professional development that includes an iterative cycle of investigation such as the PTLC. This promotes school improvement through professional growth and

collaboration among teachers (Southwest Educational Development Laboratory, 2008). Educational leaders are now required to analyze, interpret and use data to make informed decisions in all areas of education, ranging from professional development for staff members to assessing student learning (Park & Datnow, 2009). For district leaders, this often means analyzing data to make decisions related to talent, budgets and over all resources allocated to schools.

This study provides informative data that supports the research related to the three major constructs and the implications for school leaders have been addressed. District leaders however can benefit from this study when establishing expectations for school leadership and outcomes for students when making decisions related to resources and policy. In an *Organizational Learning Culture,* the inside-out approach begins with a focus upon data. This allows district leaders to base decisions not only upon student outcome data but also information related to professional practices. District leaders should consider the evaluation methods used to measure the effectiveness of professional practices, programs, policies and processes such as PLCs. Resources allocated to schools are often a fiscal determination rather than being based on student needs. Methods for measuring professional practices allows leaders to dedicate resources based upon the effectiveness of student learning or instructional practices rather than student outcomes alone.

Implications for future research. The conclusion of this study allows for multiple opportunities for future research. These opportunities include:

1. This bound case study was focused upon a rural school district with four schools. A large-scale study across several districts could provide insight into how data are used in PLCs for RTI.

2. Researchers can further explore how the duration and intensity of interventions vary among schools and districts.
3. Future studies can explore how a student's response to an intervention is progress monitored
4. The impact of diagnostic assessments to determine which students need intervention rather than reviewing historical data
5. Protocols within PLCs that focus on progress monitoring of instructional or intervention decisions.
6. Future studies could further investigate how the data subscale created for this study correlates with PLC dimensions.
7. Future studies could include interviews with instructional leadership beyond the school principal. This may be an instructional coach or any liaison between the principal and the teachers who provides instructional guidance.
8. Because the *Organizational Learning Culture* model can be applied to any initiative, future studies could apply the model to initiatives related to curriculum, assessment or instruction.

Chapter Summary

Chapter 5 presented the findings for the qualitative and quantitative research questions associated with this concurrent nested mixed method bound case study. For this research study, a qualitative approach was the primary research component, with quantitative methods nested within the study to support qualitative findings.

Dissertation Summary

This study is guided by three theoretical constructs identified in the conceptual model. Each research question developed for the study is associated with a specific construct of the conceptual model of an *Organizational Learning Culture:*

- RQ1: Data-Driven Decision Making
- RQ2: Professional Learning Communities (PLCs)
- RQ3: Response to Intervention (RTI)

Seven research questions and two hypotheses were established to guide the methodology and the overarching research question: to what extent do teachers use data-driven decision making in Professional Learning Communities for Response to Intervention?

In seeking answers to the study's research questions the researcher conducted interviews with school principals and teacher focus groups in a rural school district. This allowed the researcher to collect over 360 minutes of interview data. The Professional Learning Community Assessment-Revised (PLCA-R) was also administered in April of 2016 at all four schools in the local education agency. All teachers, school principals and any additional staff directly associated with curriculum, instruction or assessment of students participated in the survey. The information collected from the Professional Learning Community Assessment-Revised served as the final data source in the quantitative segment of this study.

Major findings of the study indicate that: (1) school principals as well as teachers report that data drives decision for grouping students for interventions; (2) school principals and teachers consider relationships a supportive condition of PLCs that allows teachers to make instructional and intervention decisions based upon data; (3) assessment practices for

gauging a student's response to an intervention vary by school grade levels; (4) perceptions of teachers and school leaders indicate that the use of data in PLCs plays a significant role in the RTI process.

These major findings have several implications for theory, practice, and future research. The *Organizational Learning Culture* model describes how teachers must first understand student data to inform decision-making. The process of data-driven decision making allows teachers to first understand why changes to instruction may be necessary. Once teachers understand the significance of why change is needed for student or school improvement, the professional learning community determines how to act or engage in collective and purposeful learning for both student and teacher. In this model, professional learning communities served as the process in which teachers engaged in an iterative process based upon student data (why), through continuous cycles of learning within PLCs (how) in order to make critical decisions to address the needs of students, RTI (what).

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APPENDIX A

Request for Superintendent's Consent to Conduct Research

DATE: XXXX, 2016

TO: Superintendent XXXX
XXXXXXX Parish Public Schools

FROM: Gabriel R. Rodriguez, Educational Leadership Doctoral Candidate
University of Louisiana at Lafayette

RE: Request for Consent to Conduct Research

I am a doctoral student in the Educational Leadership program at the University of Louisiana at Lafayette. My dissertation research topic is *Use of Data within Professional Learning Communities for Response to Intervention: A Mixed Methods Study of Teacher Perceptions*, under the supervision of Dr. Dianne F. Olivier. I am conducting a research project designed to examine how data are used within the professional learning community process for the selection and implementation of interventions and supports for Response to Intervention (RtI).

In order to conduct this research, I am requesting your consent to contact XXXXX Parish principals as well as teachers in all four schools within the school district. Principals at each school will be asked to participate in individual interviews. I am also asking that you facilitate the research by identifying focus groups from each of the four schools at your discretion based upon criteria that is forthcoming. These focus groups will consist of six to eight consenting teachers from each school involved in instruction or remediation. All identifying information will be kept confidential and available only to the researcher and research team. Principals and teachers are under no obligation to participate, and there is no penalty for not participating or withdrawing at any time.

The results of this study will have implications for future decision-making as it relates to data, professional learning communities as well as Response to Intervention. Research findings will be made available to district administration in the form of the final report. If you have any questions or concerns regarding the research project, you may contact Gabriel R. Rodriguez, doctoral student, at 337-298-9310, Dr. Dianne F. Olivier, Supervising Professor at 337-482-6408 or University of Louisiana at Lafayette Instructional Review Board Chair, Dr. David Yarbrough at 337-482-1015.

Sincerely,

Gabriel R. Rodriguez

APPENDIX B

Informed Consent and Permission from Superintendent

As Superintendent of XXXX Parish Public Schools, I consent to allow the participation of all district schools (four) in the dissertation research *Use of Data within Professional Learning Communities for Response to Intervention: A Mixed Methods Study of Teacher Perceptions,* conducted by doctoral student Gabriel R. Rodriguez. The study is under the supervision of Dr. Dianne F. Olivier of the University of Louisiana at Lafayette. The researcher is granted approval to contact principals to request participation. I agree to form teacher focus groups for this research study based upon criteria established by the researcher, Gabriel R. Rodriguez and the research team.

I understand that:

- Information collected will be used in a research study as part of a doctoral program in Educational Leadership.
- Data collected are confidential and identifiable in terms of participants only to the researcher. The confidentiality of the district, schools, and participants will be protected.
- Upon completion of the study, results may be published in a professional journal, but on identifying information of any person, school, or the district will be included.
- Principals will be interviewed individually using an interview protocol.
- Teachers will be interviewed using a focus group protocol.
- Participation is voluntary. There is no risk or penalty to the participants for not participating.
- Participants may experience a minimal risk of inconvenience in the loss of time to meet with the researcher.
- Participants may withdraw at any time without penalty.
- If I have any questions or concerns regarding the research project, I may contact Gabriel R. Rodriguez, doctoral student, at 337-298-9310, Dr. Dianne F. Olivier, Supervising Professor at 337-482-6408 or University of Louisiana at Lafayette Instructional Review Board Chair, Dr. David Yarbrough at 337-482-1015.

The procedures for the research study have been adequately explained and questions or concerns satisfactorily addressed. I grant approval for XXXXX Parish Public Schools, inclusive of principals and teachers to participate in this study.

Approved: _____ Date: _____

Superintendent's Signature

APPENDIX C

Informed Consent and Permission from Principal (School Participation)

The intent of this letter is to confirm our recent conversation with Superintendent XXXXX in regards to conducting research at XXXXX High School. I am a doctoral student at the University of Louisiana at Lafayette. I will be conducting a research study on the use of data within Professional Learning Communities for Response to Intervention. I would like your permission, as principal of the school, to conduct research at XXXXX High School and with selected teachers at your school.

All schools in XXXXX Parish Public Schools have been identified as potential sites for this study due to the district's implementation of Professional Learning Communities. There will be three specific points of data collection: the PLCA-R, an online survey administered to all faculty involved with instruction or remediation, an individual interview with you as the school principal and a focus group at your school composed of six to eight teachers involved in instruction or remediation.

If you are in agreement, there will be specific measures in place to minimize the amount of disruption in the operation of your school and the professional duties of the teachers. There will be no student involvement in this study. The results of the study will be shared with the superintendent. Identifiable information related to the school and participants within the school will only be available to the researcher and the research team. As a result of this study, the information collected and analyzed may prove beneficial to the professional growth and development of you and your staff.

If you have any questions or concerns regarding the research project, you may contact Gabriel R. Rodriguez, doctoral student, at 337-298-9310, Dr. Dianne F. Olivier, Supervising Professor at 337-482-6408 or University of Louisiana at Lafayette Instructional Review Board Chair, Dr. David Yarbrough at 337-482-1015.
Sincerely,

Gabriel R. Rodriguez

I understand that I am giving permission for faculty of XXXXX High School to participate in a research study. The research has been explained to me so that I understand what is required of all participants. I understand that I have the authority to cancel my school's participation in the research study at any time.

_____ _____

Principal's Signature Date

APPENDIX D

Informed Consent and Permission Form (Focus Group-Teachers)

My name is Gabriel R. Rodriguez, and I am a doctoral student in Educational Leadership at the University of Louisiana at Lafayette. I am conducting a study on the use of data within Professional Learning Communities. You are invited to participate in this study because of your teaching assignment at a school site proposed for this study. This form details the purpose of the study, a description of what your involvement in the focus group requires, and your rights as a participant within the study.

The purpose of this study is to examine the use of data within the Professional Learning Community process. The findings will assist in developing best practices, which may help guide district and school decisions related to these processes.

Your participation in this study is that of a participant within a focus group interview that requires approximately 40 to 60 minutes of your time. The focus group interview will be digitally recorded to ensure accuracy and for further analysis. Your privacy and confidentiality will be protected. Direct quotes may be used in the research; however, your name and other identifiable information will be kept confidential. The recordings will only be available to the research and the research team for the purpose of this study and will be maintained by the researcher in a secure location. You will be provided the opportunity to review the transcript of the interview and submit comments within two weeks of the interview.

You are under no obligation to participate in this research, and at no time should you feel pressured to participate in this study. In the event you decide to participate in the study, you still have the option to withdraw at any time during the study without penalty. There is a minimal risk of inconvenience in terms of time to meet with the researcher.

If you have any questions or concerns regarding the research project, you may contact Gabriel R. Rodriguez, doctoral student, at 337-298-9310, Dr. Dianne F. Olivier, Supervising Professor at 337-482-6408 or University of Louisiana at Lafayette Instructional Review Board Chair, Dr. David Yarbrough at 337-482-1015.

By signing below, you agree that you have read and understand the above information and you agree to participate in this interview as part of the research study.

_____ _____

Name Date

APPENDIX E

Informed Consent and Permission Form (Individual Interview-Principal)

My name is Gabriel R. Rodriguez, and I am a doctoral student in Educational Leadership at the University of Louisiana at Lafayette. I am conducting a study on the use of data within Professional Learning Communities. You are invited to participate in this study because of your role as an instructional leader a school site proposed for this study. This form details the purpose of the study, a description of what your involvement in the individual interview requires, and your rights as a participant within the study.

The purpose of this study is to examine the use of data within the Professional Learning Community process. The findings will assist in developing best practices, which may help guide district and school decisions related to these processes.

Your participation in this study will involve an individual interview that requires approximately 40 minutes of your time. The interview will be digitally recorded to ensure accuracy and for further analysis. Your privacy and confidentiality will be protected. Direct quotes may be used in the research; however, your name and other identifiable information will be kept confidential. The recordings will only be available to the research and the research team for the purpose of this study and will be maintained by the researcher in a secure location. You will be provided the opportunity to review the transcript of the interview and submit comments within two weeks of the interview.

You are under no obligation to participate in this research, and at no time should you feel pressured to participate in this study. In the event you decide to participate in the study, you still have the option to withdraw at any time during the study without penalty. There is a minimal risk of inconvenience in terms of time to meet with the researcher for the interview.

If you have any questions or concerns regarding the research project, you may contact Gabriel R. Rodriguez, doctoral student, at 337-298-9310, Dr. Dianne F. Olivier, Supervising Professor at 337-482-6408 or University of Louisiana at Lafayette Instructional Review Board Chair, Dr. David Yarbrough at 337-482-1015.

By signing below, you agree that you have read and understand the above information and you agree to participate in this interview as part of the research study.

_____ _____

Name Date

APPENDIX F

Principal Interview Protocol

School: _____ Date: _____

Principal Interviewee: _____

Introduction

Thank you for your participation and assisting in this research project. The focus of the study is centered around the use of data within Professional Learning Communities. Before we being the interview, I would like to take the time to review the consent and assure you that this interview is confidential and will be kept confidential. The digital audio recordings and transcripts from the recordings will be kept in a secure location. Quotes or excerpts from the interview may be used in the final report, but your name nor any other identifiable information will be disclosed. Do you mind that I am recording this interview in order to be accurate and also to be able to review the information later for better analysis? Once the interview has been transcribed, a copy will be made available to you for review. Once you are given a copy, you will have ten days to make any comments about the contents of the transcript. Those comments will be documented, however if I do not receive any comments within the ten days, the information within the transcript will be used in the final report. Before we being the formal interview, do you have any questions? I am going to turn on the recorder now, if at any time during the interview you do not want something recorded, please let me know and I will turn the recorder off. This interview should take approximately 40 minutes.

1. How do faculty members use multiple sources of data to make decisions about teaching and learning for students who are in RTI? (Research Question 1)
2. How are data organized and made available to provide easy access to staff members for RTI? (Research Question1)
3. What are the benefits when faculty members collaboratively analyze student work to inform RTI decisions? (Research Question 2)
4. What are some examples of faculty collaboratively analyzing multiple sources of data to inform RTI? (Research Question 2)
5. How do does the faculty support honest and respectful examination of data? (Research Question 2)

6. How are data used to prioritize actions to reach a shared vision for students in RTI?

    a. How are data used to intervene upon RTI students to reach that vision?

7. In general, how are data used to prioritize actions to reach a shared vision for students in RTI? (Research Question 3)

        a. How does the regular sharing of student work guide changes in instruction for students in RTI? (Research Question 3)

        b. How does the faculty use data to drive decisions during progress monitoring to assess the effectiveness of RTI? (Research Question 3)

Closing:

That concludes the interview, thank you for your time and attention to this research.

APPENDIX G

Focus Group Protocol

School: _____ Date: _____
Number of Teachers Present: _____

Introduction
Thank you for your participation and assisting in this research project. The focus of the study is centered around the use of data within Professional Learning Communities. Before we being the focus group interview, I would like to take the time to review the consent and assure you that this interview is confidential and will be kept confidential. The digital audio recordings and transcripts from the recordings will be kept in a secure location. Quotes or excerpts from the interview may be used in the final report, but your name nor any other identifiable information will be disclosed. Do you mind that I am recording this interview in order to be accurate and also to be able to review the information later for better analysis? Once the interview has been transcribed, a copy will be made available to you for review. Once you are given a copy, you will have ten days to make any comments about the contents of the transcript. Those comments will be documented, however if I do not receive any comments within the ten days, the information within the transcript will be used in the final report. Before we being the formal focus group interview, do you have any questions? I am going to turn on the recorder now, if at any time during the interview you do not want something recorded, please let me know and I will turn the recorder off. This interview should take approximately 40 minutes.

1. How do you use data to make decisions about teaching and learning for students who are in RTI? (Research Question1)
    a. Describe the various sources of data you use during this process?
2. How are data organized and made available for students who are struggling academically? (Research Question 1)
3. What opportunities exist for you to collaboratively analyze student work to improve teaching and learning? (Research Question 2)
    a. What are the benefits when faculty members collaboratively analyze student work to inform RTI decisions?? (Research Question 2)
    b. What are some examples of faculty collaboratively analyzing multiple sources of data to inform RTI?

4. How do you support honest and respectful examination of data when you look at it collaboratively? (Research Question 2)
5. What are some examples of how you collaboratively analyze multiple sources of data to assess the effectiveness of RTI? (Research Question 3)
6. How are data used to prioritize actions to reach a shared vision for students in RTI? (Research Question 3)
   a. How are data used to intervene upon RTI students to reach that vision?
7. In general, how does the regular sharing of student work guide changes in instruction? (Research Question 3)
   a. How does the regular sharing of student work guide changes in instruction for students in RTI? (Research Question 3)
   b. How does the faculty use data to drive decisions during progress monitoring to assess the effectiveness of RTI? (Research Question 3)

Closing:

That concludes the interview, thank you for your time and attention to this research.

APPENDIX H

Professional Learning Communities Assessment – Revised

Directions:
This questionnaire assesses your perceptions about your principal, staff, and stakeholders based on the dimensions of a professional learning community (PLC) and related attributes. This questionnaire contains a number of statements about practices which occur in some schools. Read each statement and then use the scale below to select the scale point that best reflects your personal degree of agreement with the statement. Shade the appropriate oval provided to the right of each statement. Be certain to select only one response for each statement. Comments after each dimension section are optional.

Key Terms:
- Principal = Principal, not Associate or Assistant Principal
- Staff/Staff Members = All adult staff directly associated with curriculum, instruction, and assessment of students
- Stakeholders = Parents and community members

Scale 1 = Strongly Disagree (SD)
2 = Disagree (D)
3 = Agree (A)
4 = Strongly Agree (SA)

STATEMENTS		SCALE			
	Shared and Supportive Leadership	**SD**	**D**	**A**	**SA**
1.	Staff members are consistently involved in discussing and making decisions about most school issues.	0	0	0	0
2.	The principal incorporates advice from staff members to make decisions.	0	0	0	0
3.	Staff members have accessibility to key information.	0	0	0	0
4.	The principal is proactive and addresses areas where support is needed.	0	0	0	0
5.	Opportunities are provided for staff members to initiate change.	0	0	0	0
6.	The principal shares responsibility and rewards for innovative actions.	0	0	0	0
7.	The principal participates democratically with staff sharing power and authority.	0	0	0	0
8.	Leadership is promoted and nurtured among staff members.	0	0	0	0

9.	Decision-making takes place through committees and communication across grade and subject areas.	0	0	0	0
10.	Stakeholders assume shared responsibility and accountability for student learning without evidence of imposed power and authority.	0	0	0	0
11.	Staff members use multiple sources of data to make decisions about teaching and learning.	0	0	0	0
COMMENTS:					
	STATEMENTS	**SCALE**			
	Shared Values and Vision	**SD**	**D**	**A**	**SA**
12.	A collaborative process exists for developing a shared sense of values among staff.	0	0	0	0
13.	Shared values support norms of behavior that guide decisions about teaching and learning.	0	0	0	0
14.	Staff members share visions for school improvement that have an undeviating focus on student learning.	0	0	0	0
15.	Decisions are made in alignment with the school's values and vision.	0	0	0	0
16.	A collaborative process exists for developing a shared vision among staff.	0	0	0	0
17.	School goals focus on student learning beyond test scores and grades.	0	0	0	0
18.	Policies and programs are aligned to the school's vision.	0	0	0	0
19.	Stakeholders are actively involved in creating high expectations that serve to increase student achievement.	0	0	0	0
20.	Data are used to prioritize actions to reach a shared vision.	0	0	0	0
COMMENTS:					

	STATEMENTS	SCALE			
	Collective Learning and Application	**SD**	**D**	**A**	**SA**
21.	Staff members work together to seek knowledge, skills and strategies and apply this new learning to their work.	0	0	0	0
22.	Collegial relationships exist among staff members that reflect commitment to school improvement efforts.	0	0	0	0
23.	Staff members plan and work together to search for solutions to address diverse student needs.	0	0	0	0
24.	A variety of opportunities and structures exist for collective learning through open dialogue.	0	0	0	0
25.	Staff members engage in dialogue that reflects a respect for diverse ideas that lead to continued inquiry.	0	0	0	0
26.	Professional development focuses on teaching and learning.	0	0	0	0
27.	School staff members and stakeholders learn together and apply new knowledge to solve problems.	0	0	0	0
28.	School staff members are committed to programs that enhance learning.	0	0	0	0
29.	Staff members collaboratively analyze multiple sources of data to assess the effectiveness of instructional practices.	0	0	0	0
30.	Staff members collaboratively analyze student work to improve teaching and learning.	0	0	0	0
COMMENTS:					

	STATEMENTS	SCALE			
	Shared Personal Practice	**SD**	**D**	**A**	**SA**
31.	Opportunities exist for staff members to observe peers and offer encouragement.	0	0	0	0
32.	Staff members provide feedback to peers related to instructional practices.	0	0	0	0
33.	Staff members informally share ideas and suggestions for improving student learning.	0	0	0	0
34.	Staff members collaboratively review student work to share and improve instructional practices.	0	0	0	0
35.	Opportunities exist for coaching and mentoring.	0	0	0	0
36.	Individuals and teams have the opportunity to apply learning and share the results of their practices.	0	0	0	0
37.	Staff members regularly share student work to guide overall school improvement.	0	0	0	0
COMMENTS:					

	STATEMENTS	SCALE			
	Supportive Conditions - Relationships	**SD**	**D**	**A**	**SA**
38.	Caring relationships exist among staff and students that are built on trust and respect.	0	0	0	0
39.	A culture of trust and respect exists for taking risks.	0	0	0	0
40.	Outstanding achievement is recognized and celebrated regularly in our school.	0	0	0	0
41.	School staff and stakeholders exhibit a sustained and unified effort to embed change into the culture of the school.	0	0	0	0
42.	Relationships among staff members support honest and respectful examination of data to enhance teaching and learning.	0	0	0	0
COMMENTS:					

	STATEMENTS	SCALE			
	Supportive Conditions - Structures	**SD**	**D**	**A**	**SA**
43.	Time is provided to facilitate collaborative work.	0	0	0	0
44.	The school schedule promotes collective learning and shared practice.	0	0	0	0
45.	Fiscal resources are available for professional development.	0	0	0	0
46.	Appropriate technology and instructional materials are available to staff.	0	0	0	0
COMMENTS:					

	STATEMENTS	SCALE			
		SD	**D**	**A**	**SA**
47.	Resource people provide expertise and support for continuous learning.	0	0	0	0
48.	The school facility is clean, attractive and inviting.	0	0	0	0
49.	The proximity of grade level and department personnel allows for ease in collaborating with colleagues.	0	0	0	0
50.	Communication systems promote a flow of information among staff members.	0	0	0	0
51.	Communication systems promote a flow of information across the entire school community including: central office personnel, parents, and community members.	0	0	0	0
52.	Data are organized and made available to provide easy access to staff members.	0	0	0	0
COMMENTS:					

Rodriguez, Gabriel R. Bachelor of Science, University of Southwestern Louisiana, Spring 1999; Bachelor of Arts, University of Louisiana at Lafayette, Spring 2005; Master of Education in Educational Leadership, University of Louisiana at Lafayette, Fall 2007;
Doctor of Education, University of Louisiana at Lafayette, Spring 2017
Major: Educational Leadership
Title of Dissertation: A Mixed Methods Bounded Case Study: Data-driven Decision Making Within Professional Learning Communities for Response to Intervention
Dissertation Director: Dr. Dianne F. Olivier
Pages in Dissertation: 206; Words in Abstract: 196

ABSTRACT

A growing number of schools are implementing PLCs to address school improvement, staff engage with data to identify student needs and determine instructional interventions. This is a starting point for engaging in the iterative process of learning for the teach in order to increase student learning (Hord & Sommers, 2008). The iterative process of data-driven decision making within PLCs may isolate true PLCs into simplified data meetings, while a professional learning community can more accurately be described as a process (Jessie, 2007).

The purpose of this study was to examine how data are used within the professional learning community process for Response to Intervention (RTI). Thus, the overarching research question guiding this study is, *to what extent do teachers use data-driven decision making in Professional Learning Communities for Response to Intervention?* To develop rich descriptions of Data-driven decision making, PLCs, and Response to Intervention, one-on-one face to face interviews were conducted with each school principal in the district. Additionally, focus group interviews with teachers at each school provided rich descriptions related to the three key constructs. Perceptions of Professional Learning Communities were

also collected through a quantitative survey method to describe the district's engagement in PLCs.

BIOGRAPHICAL SKETCH

Gabriel Rene Rodriguez was born on December 4, 1974 in Lafayette, Louisiana. Gabriel graduated from Teurlings Catholic High School in Lafayette, Louisiana. He attended the University of Southwestern Louisiana where he graduated with a Bachelor of Science in Criminal Justice. He continued his education and graduated with a Bachelor of Arts in Special Education from the University of Louisiana at Lafayette and a Master's Degree in Educational Leadership.

Gabriel has been employed with the Louisiana Department of Education since 2014, and has served in many professional positions. He has been a classroom teacher, and a district coordinator. He later moved to the University of Louisiana, and worked as a research associate for the Picard Center for Childhood Development. He has extensive professional experience in Response to Intervention, Positive Behavioral Interventions and Supports and Data-Driven Decision Making.

The degree of Doctor of Education was conferred during Spring Commencement on May 12, 2017.