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Alyce H. Prentice

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LOYOLA MARYMOUNT UNIVERSITY

Investigating Collaborative Inquiry:
A Case Study of a Professional Learning Community at Lennox Charter High School

by

Alyce H. Prentice

A dissertation presented to the Faculty of the School of Education,
Loyola Marymount University,
in partial satisfaction of the requirements for the degree
Doctor of Education

2016

Investigating Collaborative Inquiry:

A Case Study of a Professional Learning Community at Lennox Charter High School

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by

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This dissertation written by Alyce Prentice, under the direction of the Dissertation Committee, is approved and accepted by all committee members, in partial fulfillment of requirements for the degree of Doctor of Education.

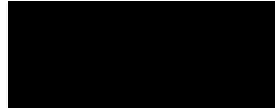
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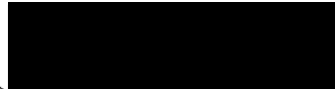
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Dr. Patricia Wu, Committee Member

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Investigating Collaborative Inquiry:

A Case Study of a Professional Learning Community at Lennox Charter High School

by

Alyce H. Prentice

The purpose of this study was to investigate teacher perceptions of Collaborative Inquiry embedded in a Professional Learning Community during departmental collaboration time and to explore the elements deemed most important to creating and/or maintaining this collaboration model at Lennox Charter High School. Teachers at Lennox Charter High School participated in this study.

This mixed-methods case study triangulated survey, focus group, interview, and observation data to examine departmental collaboration and to define the elements most important to maintaining and improving Collaborative Inquiry at Lennox Charter High School. These elements were explored through the lens of research on Professional Learning Communities and Collaborative Inquiry. Specifically, data were examined with respect to the

five themes of PLC work. These themes included context, challenge, capacity, commitments, and balancing content and process.

A close examination of the data with respect to these themes revealed key take-aways for Lennox Charter High School; namely, that the school needed to bolster the data analysis aspect of Collaborative Inquiry, limit the scope of collaborative work, and endeavor to retain effective teachers so that teams had continuity and could more effectively engage veteran teachers in collaborative work. Using these recommendations would allow Lennox Charter High School to improve professional collaboration, engender meaningful teacher learning, and support equitable student achievement.

CHAPTER 1

INTRODUCTION

Background

Large numbers of policymakers, educators, and business leaders believe that American schools are not adequately preparing our students for the workforce or higher education. Classroom practice has not caught up to what educators now know about how students learn and the complex skills they must have in order to succeed with the Common Core State Standards (CCSS) and in our current economy (DuFour & Fullan, 2013; McLaughlin & Talbert, 2006). The United States continues to score low on measures of education performance and consistently scores 20th or worse among the 34 countries in the Organization for Economic Cooperation and Development. The persistent achievement gap across socioeconomic and racial/ethnic lines amplifies the failure of American schools to adequately prepare young people for college and careers (Dufour & Marzano, 2011).

According to a study by the McKinsey group (2009), while the percentage of Black and Latino students is increasing in the United States, these students are, on average, two to three years behind White students of the same age in academic achievement, and their high school graduation rates are 20% lower. Additionally, students eligible for free or reduced lunch are roughly two years behind the average affluent student of the same age (Dufour & Marzano, 2011). The gap between high-achieving students and struggling students is growing (DuFour & Fullan, 2013). At a time when the link between education and lifetime opportunity has never been stronger, there is increasing urgency around excellent and equal educational opportunities for all students (DuFour & Fullan, 2013).

The challenges inherent in American Education require substantial teacher learning (Lieberman & Miller, 2008; McLaughlin & Talbert, 2006). Educators need to change a legacy of unequal educational outcomes for students while increasing achievement for all. As various states across the country transition to Common Core, adapting new and increasingly demanding national standards, teachers must deeply understand the new learning standards and meaningfully incorporate them into classroom learning for all students (DuFour & Fullan, 2013; Dufour & Marzano, 2011; Lieberman & Miller, 2008; McLaughlin & Talbert, 2006).

The current transition to the CCSS highlights the imperative to equip students with the complex intellectual skills needed in our technology and information-based economy. In light of these curricular changes, educators must shift a long history of unequal student outcomes in American schools. We can no longer accept a system in which advantaged students achieve more than students with fewer resources to support their learning. DuFour and Marzano (2011) have noted that contemporary American educators face the most daunting challenge in the history of public education because, while the CCSS raises academic standards to the highest level in history, schools are tasked with helping every student achieve these standards and huge achievement gaps exist across racial and socioeconomic lines with respect to graduation rates, test scores and advanced proficiency (DuFour & Fullan, 2013; Dufour & Marzano, 2011; McLaughlin & Talbert, 2006).

While educators must engage in substantial learning experiences in order to appropriately support all students as standards and curriculum become increasingly challenging, traditional models of professional development fall short as vehicles for growth (DuFour, DuFour, & Eaker, 2008; Lieberman & Miller, 2008; McLaughlin & Talbert, 2006). There is a long history of using

external professional development and legislative pressure to improve American schools. This practice began in the late 1950s with the National Defense of Education Act (NDEA) of 1958, which asked universities to train teachers to improve teaching and curriculum in order to close a perceived gap between Soviet and American achievement. These trainings were viewed as an act of national defense (Lieberman & Miller, 2008). The Elementary and Secondary Education Act (ESEA) of 1965 employed the same logic by funding the employment of experts to develop and disseminate curricular materials, establishing a training model for staff development that relies on the transmission of knowledge by outside experts and still flourishes today (Lieberman & Miller, 2008).

The publication of *A Nation at Risk* in 1983 represented a shift from external professional development to exerting external pressure onto educators. Policy makers believed that principals and teachers would not change unless they were provided with a rationale for urgency. The No Child Left Behind (NCLB) Act of 2001 sought to improve educational outcomes by legislating needed school improvement, extending the notion of external pressure by requiring schools to show measured improvement in student achievement or face punitive measures (Owens & Valesky, 2011). By the time President George W. Bush left office in 2008, even the original advocates had concluded that No Child Left Behind failed to improve student achievement. (Dufour & Marzano, 2011). External pressure and external professional development have not solved the educational crisis in the United States.

Similarly, traditional models of professional growth have not been able to offer teachers the significant learning experiences they require to mitigate the educational problems we face as a nation (DuFour et al., 2008; Lieberman & Miller, 2008). In a comprehensive study of 30

schools, Lieberman and Miller (2008) found that teacher discussions, rather than providing opportunities for critical reflection, are often self-assuring and seek to maintain the status quo. Customary models of professional development are often episodic and disconnected from school-site needs, doing little to impact classroom practices (McLaughlin & Talbert, 2006; Nelson, Perkins & Hawthorn, 2008). Workshops and other externally developed professional development opportunities often do not build on teachers' knowledge or speak to daily challenges in the classroom (David, 2009; McLaughlin & Talbert, 2006). If professional development is not deeply connected to teacher needs, it cannot be meaningfully incorporated into classroom practice and benefit students. Teachers should direct their own learning in a way congruent to their professional lives (Lytle, 1999).

Just as ineffective as externally driven professional development that is disconnected from the needs and interests of teachers is the prevailing norm of teacher isolation. The existing structure of schools isolates teachers from one another and buffers them from accountability. Teacher isolation has adverse consequences for students, teachers, and school improvement efforts because it prevents the collaboration and shared learning essential to improving student achievement (David, 2009; DuFour et al., 2008).

Teachers are more likely to act on new knowledge and enact changes in their practice if they are working collaboratively with colleagues (DuFour et al., 2008). Professional Learning Communities (PLCs) are a vehicle for supporting Collaborative Inquiry and implementing transformative professional development (Nelson, 2008). Donohoo (2014) defined Collaborative Inquiry as a structure in which members of a PLC come together to systematically examine their educational practices. By engaging in Collaborative Inquiry, educators can systematically

develop content knowledge and instructional practices to meet the needs of their students. The complex problems that educators are faced with and the changes that schools need to embrace necessitate collaborative efforts (Bray, 2000; Lieberman & Miller, 2008; McLaughlin & Talbert, 2006). PLCs provide a framework for supporting school-wide improvement efforts, not only because they support reform efforts, but also because they can play a central role in dramatically improving the overall performance of schools (DuFour et al., 2008; DuFour & Fullan, 2013; Hall & Hord, 2006).

This study strove to understand the extent to which teachers perceive Collaborative Inquiry embedded in a Professional Learning Community to be present in departmental collaboration time at Lennox Charter High School, as well as the elements deemed most important to create and maintain these structures. Teachers have direct influence on student academic achievement, and the principal has an indirect effect through the teacher. Principals can be primary agents of change by impacting teacher behavior and efficacy (Hiatt-Michael, 2001). The role of the principal is crucial in building and maintaining learning communities (DuFour et al., 2008; Hiatt-Michael, 2001; Lieberman & Miller, 2008). The researcher sought to understand how to maximize the potential benefits of Collaborative Inquiry in the context of a PLC during two hour-long department meetings each month at Lennox Charter High School (pseudonym). This study focused on department work because McLaughlin and Talbert (2006) indicated that analysis of teacher community effects on student learning needs to focus on the department level.

Department collaboration time at Lennox Charter High School occurred inconsistently with inconsistent results. For example, the math department analyzed benchmark data, created

action plans to support students where they were struggling and closely aligned instructional strategies. They worked collaboratively to incorporate more literacy strategies in their classrooms. In contrast, the history department met numerous times during the 2014-15 school year and was unable to articulate a department-wide goal, much less analyze data or align curriculum. It was necessary to understand the current nature of professional collaboration at Lennox Charter High School as well as the elements deemed most important for Lennox Charter High School to create and maintain Collaborative Inquiry embedded in a Professional Learning Community during departmental collaboration. Meaningful collaboration in teacher communities can help to advance equitable educational outcomes for all students (Dufour & Marzano, 2011; V. E. Lee, & Smith, J. B., 1995, 1996; V. E. Lee, Smith, J. B., & Croninger, R. G., 1997).

Social Justice Focus

The United States continues to score low on measures of education performance and consistently scores 20th or worse among the 34 countries in the Organization for Economic Cooperation and Development. Decades of attempts to spur education reform have not reversed this phenomenon. The persistent achievement gap across socioeconomic and racial/ethnic lines amplifies the failure of American schools. As the gap between high-achieving students and struggling students is growing (DuFour & Fullan, 2013) and students of color and students eligible for free or reduced lunch lag behind their White and more affluent peers in achievement and graduation rates (Dufour & Marzano, 2011), educators must recognize the inadequate and unjust outcomes of American schools. At a time when the link between education and lifetime

opportunity has never been stronger, there is increasing urgency around excellent and equal educational opportunities for all students (DuFour & Fullan, 2013).

Additionally, as states across the country transition to the CCSS, adapting new and increasingly demanding national standards, teachers must deeply appreciate the new learning standards and meaningfully incorporate them into classroom learning for all students (DuFour & Fullan, 2013; Dufour & Marzano, 2011; Lieberman & Miller, 2008; McLaughlin & Talbert, 2006). DuFour and Marzano (2011) noted that contemporary American educators face the most daunting challenge in the history of public education because the CCSS raises academic standards to the highest level in history; schools are tasked with helping every student achieve these standards, and huge achievement gaps exist across racial and socioeconomic lines with respect to graduation rates, test scores, and advanced proficiency. Every student deserves an excellent and academically rigorous education. It is a school leader's ethical and moral responsibility to facilitate an environment in which teachers can work toward assuaging the achievement gap and ensuring that each student receives the support he or she needs to succeed. School leaders can advance social justice by facilitating high-quality teacher collaboration that leads to equitable outcomes for all students.

Chapter 2 will discuss the United States's long history of additive and outsourced professional development which, over the years, has sought to bring outside expertise into schools. Additionally, Chapter 2 will describe that while traditional, workshop model professional development is often ineffectual, Collaborative Inquiry embedded in a Professional Learning Community can deeply impact teaching and learning at the school site. Accordingly, school leaders can work to advance social justice not by leveraging outside expertise, but by

coordinating effective teacher collaboration that draws on expertise that exists at the school site. Collaborative Inquiry embedded in a PLC has been shown to help schools improve teaching and learning and advance equitable outcomes (DuFour & Marzano, 2011; Liebermann & Miller, 2008; McLaughlin & Talbert, 2006). Collaborative Inquiry embedded in a PLC can work as a vehicle for social justice and equitable educational outcomes.

Problem Statement

Educators must engage in substantial learning experiences in order to appropriately support all students as standards and curriculum become increasingly challenging. However, traditional models of professional development fall short as vehicles for growth (DuFour et al., 2008; Lieberman & Miller, 2008; McLaughlin & Talbert, 2006). Customary models of professional development are often episodic and additive, doing little to change classroom practices or the prevailing culture of teacher isolation. Teacher isolation and episodic professional development prevent the collaboration and shared learning essential to improving student achievement. Meaningful collaboration in teacher communities can help to advance equitable educational outcomes for all students (Dufour & Marzano, 2011; V. E. Lee, & Smith, J. B., 1995, 1996; V. E. Lee et al., 1997). Most current professional development focuses on bringing best practices from experts outside of the school to the teachers within it, resulting in teacher learning experiences that lack relevance. PLCs, however, assume that best practices reside within the collective knowledge of the members of a school community and can be uncovered through collective work (Lieberman & Miller, 2008).

The complex problems that educators face and the changes that schools need to embrace can only be successfully navigated with collaborative efforts (Bray, 2000; Lieberman & Miller,

2008; McLaughlin & Talbert, 2006). Schools can only enact necessary improvements and changes if they focus on strengthening relationships and building a collective sense of self-efficacy (DuFour et al., 2008). PLCs provide an astute framework for supporting school-wide improvement efforts, not only because they support reform efforts, but also because they can play a central role in dramatically improving the overall performance of schools (DuFour et al., 2008; DuFour & Fullan, 2013; Hall & Hord, 2006). There is no single formula for successfully adopting the CCSS or for closing the achievement gap. But focused, Collaborative Inquiry in a PLC can support schools in the intensive collaborative work necessary to tackle these challenges (Bray, 2000; DuFour et al., 2008; DuFour & Fullan, 2013; Dufour & Marzano, 2011; Lieberman & Miller, 2008; McLaughlin & Talbert, 2006).

More is known about the benefits of PLCs and Collaborative Inquiry than how to start and sustain them (McLaughlin & Talbert, 2006). This study examined the extent to which PLCs and Collaborative Inquiry were present at Lennox Charter High School and the elements deemed most important in implementing them. Through this research, which involved intense collaboration with members of the school community, the researcher ascertained the important elements of creating Collaborative Inquiry in a PLC in order to bring the inherent benefits to the specific school context of Lennox Charter High School. The study documented the process a small charter school undergoes as it seeks to manage the challenges outlined previously in this chapter—namely, lackluster and unequal student achievement as well as inadequate efforts to initiate reform and teacher learning.

Research Questions

This study aimed to provide insight into two questions regarding the use of departmental collaboration time and its connection to teaching practice:

- What are teachers' perceptions of Collaborative Inquiry embedded in a Professional Learning Community during departmental collaboration time at Lennox Charter High School?
- What are the elements deemed most important for Lennox Charter High School to create and/or maintain Collaborative Inquiry embedded in a Professional Learning Community during departmental collaboration?

Purpose of the Study

The purpose of this mixed-methods case study was to investigate teacher perceptions of Collaborative Inquiry embedded in a PLC during departmental collaboration time and to explore the elements deemed most important to creating and/or maintaining this collaboration model at Lennox Charter High School, a small urban charter high school. The researcher sought to better understand the elements deemed most important for Lennox Charter High School to create and/or maintain Collaborative Inquiry embedded in a Professional Learning Community during departmental collaboration in order to design meaningful learning experiences for teachers. The researcher endeavored to design meaningful teacher learning so as to render school site professional development more impactful, bolster teaching practice, and support equitable student achievement.

Significance of the Study

The significance of this study lies in its granular analysis of Collaborative Inquiry within a PLC. The research clearly outlines the power of these collaborative structures to benefit students, teachers and schools. DuFour et al. (2008) named PLCs the “most promising strategy for sustained, substantive school improvement” (p. 1) and cited the use of PLCs as the best, least expensive and most rewarding way to improve schools. If the impact of these structures is so clear, why are they not more commonly used?

A potential reason is the dearth of research on creating and maintaining PLCs (McLaughlin & Talbert, 2006). Ample research has outlined the benefits of Collaborative Inquiry and PLCs on schools as well as the potential for these structures to benefit teaching and learning. The research has not provided a roadmap for enacting these collaboration structures in specific school contexts. This study provides an in-depth examination of the current collaboration context at a small urban charter high school as well as the elements deemed most important in implementing Collaborative Inquiry and PLCs. This research is significant because it describes the formulation of an implementation plan for collaborative structures that have the potential to significantly benefit teaching and learning on any school campus. The research may be beneficial to other educators seeking to improve teacher learning and advance equitable achievement outcomes in their own contexts.

Theoretical Framework

This study used Lieberman and Millers’ (2008) five themes of PLC work as well as DuFour’s (2008) conception of PLCs and Donohoo’s (2014) conception of Collaborative Inquiry.

Lieberman and Miller (2008) reviewed eight research studies of PLCs in order to define PLC work and articulate the signature theories and practices of them. From an examination of these studies, Lieberman and Miller gleaned five themes that defined a theoretical framework for professional learning community work. These themes are context, developing commitments, developing capacity, balancing content and process, and challenges. Lieberman and Miller (2008) presented these themes as lenses for understanding how teachers come together and learn to build teaching competence while building professional community. Lieberman and Miller's (2008) five themes of PLC work serve as the overarching construct into which the conceptual frameworks of PLCs and Collaborative Inquiry fit.

Lieberman and Miller (2008) described *challenge* and *context* as fixed themes over which educators do not exert control. *Challenge* is presented as inescapable. The researchers did not advise educators to attempt to avoid challenge, but rather to expect to navigate it. Additionally, the theme of *context* is a fixed aspect of PLC work. While educators cannot change the community in which a school is located or the culture that surrounds it, they must expect these factors to impact the work of the PLC. The other three themes of PLC work, however, are dynamic processes with which educators and leaders must engage. DuFour et al.'s (2008) conception of the six characteristics of the PLC, and Donohoo's (2013) conception of the structure of Collaborative Inquiry within a PLC work to operationalize the three themes of *developing commitments*, *developing capacity*, and *balancing content and process*.

The notion of *balancing content and process* is highlighted as it can be operationalized and worked on immediately whereas *commitments* and *capacity* develop over time once individuals have engaged in collaborative work. Lieberman and Miller (2008) argued that

teachers can best develop new knowledge when content is balanced with community. PLCs must simultaneously prioritize deepening the subject matter knowledge of participants and concentrating on the processes that keep communities alive. DuFour et al.'s (2008) six characteristics of a PLC and Donohoo's (2014) conception of Collaborative Inquiry provide a conceptual framework that schools can use to maintain both priorities.

It is important to note that PLCs are defined as including Collaborative Inquiry and Collaborative Inquiry is defined as occurring within a PLC. Thus the two constructs are interdependent and defined by each other. Collaborative Inquiry encompasses the aspects of PLC work that attend to content knowledge within that community: collective inquiry into best practice and current reality; action orientation: learning by doing; a commitment to continuous improvement; results orientation. The first two elements of PLC work define the process-oriented aspects of the collaboration that attend to the community: shared mission, vision, values and goals; and collaborative culture with a focus on learning. Thus DuFour's (2008) conception of PLCs and Donohoo's (2014) conception of Collaborative Inquiry provide a conceptual framework for *balancing content and process*. Additionally, by engaging in Collaborative Inquiry embedded in a PLC, participants deepen and increase commitments and capacity over time. The focal point of the conceptual framework for this research is the notion that the interconnected frameworks for PLCs and Collaborative Inquiry can operationalize the theme of *balancing content and process* and, over time, deepen the *commitments* and *capacity* of PLC members.

Research Design and Methodology

The setting for this mixed methods case study was Lennox Charter High School, which is a small school that serves a population of 600 students, 99% of whom were Latino, 96% of whom lived at or below the poverty line, and 90% of who arrived to high school below grade level in reading and math. The study participants were 28 teachers at Lennox Charter High School, the researcher (who was also the principal) and the two assistant principals. Over the course of the study, participants articulated the extent to which they perceived Collaborative Inquiry embedded in a Professional Learning Community to be present in departmental collaboration time at Lennox Charter High School and the elements they deemed most important for Lennox Charter High School to create and maintain Collaborative Inquiry embedded in a Professional Learning Community during departmental collaboration.

Steffy and Kappa Delta Pi (2000) have argued that there are six phases through which career teachers move during their time in the classroom. At each phase, teachers need different kinds of professional development and support to enrich their practice (Steffy & Kappa Delta Pi [Honor society], 2000). Teachers in different phases bring different needs and perspectives to professional collaboration that must be included in data collection in order to gather comprehensive information about how to meet the needs of all teachers at the school site. The researcher examined the perceptions of teachers at different phases. The researcher also examined the perceptions and practice of teachers within different departments at Lennox Charter High School. There were six departments at the school: English, math, science, history, Spanish, and college readiness.

The study used a case study framework to answer the research questions and explore teacher perceptions of department collaboration as well as how to create and maintain Collaborative Inquiry embedded in a PLC. Case studies investigate a contextualized, contemporary phenomenon within specified boundaries (Hatch, 2002; Yin, 1994). Yin (1994) argued that a case study should be used when the context in which a phenomenon occurs is important to the research. In a case study, researchers collect detailed information using a variety of data collection procedures over a sustained period of time (Creswell, 2014; Yin, 1984). This particular study relied heavily on context as it sought to understand Collaborative Inquiry in the context of a PLC, and the potentiality to implement these structures in a specific context. Additionally, this study proposed using both qualitative and quantitative data collection methods in order to obtain detailed information about these collaboration structures.

The goal of this study was to work collaboratively with the staff at Lennox Charter High School to better understand the current collaboration context and how to create and/or maintain Collaborative Inquiry in a PLC. The first step of data collection was to administer the Collaborative Inquiry Continuum survey in order to collect quantitative data on teacher perceptions of Collaborative Inquiry. The survey asked teachers to characterize teacher collaboration at Lennox Charter High School. The researcher analyzed the results of the survey and then built on the results to explain them in more detail with qualitative data from focus groups and interviews (Creswell, 2014). Additionally, the researcher triangulated this data by observing collaboration sessions and rating them on the Collaborative Inquiry Continuum in order to gather quantitative data.

Limitations, Delimitations, Assumptions

A substantial limitation in this study was the researcher's position as principal of Lennox Charter High School, which was the research setting. The researcher has informed opinions about the nature of collaborative department work at LCHS and, accordingly, remained aware of the potential for researcher bias during the data collection process. Additionally, due to the positionality of the researcher, it was important to remain aware of the ability of the participants to be honest. As teachers within a unionized charter management organization, participants are protected in expressing their points of view.

Another potential limitation was that the Charter Management Organization of which Lennox Charter High School was a part mandates certain professional development sessions and district-wide collaboration. Thus, the professional development calendar is not fully at the principal's discretion. There were, however, ample opportunities for collaboration time at the school site.

An additional limitation was that participants for focus groups and interviews were not randomly selected. The researcher selected teachers at different phases of their career cycles (at each of the four phases of *apprentice*, *professional*, *expert*, and *distinguished*) and requested volunteers from each phase.

The scope of this study was a delimitation as it concerned one small charter high school in one district. Since the study gathered data from one school, discoveries and conclusions may not be applicable to schools throughout the nation.

A choice was made at the outset of this study to focus on departmental collaboration at one school in order to understand the impacts of collaboration in that particular context. Since

learning is situated within context and social interaction, one must deeply understand relationships, setting, and other environmental factors in order to understand professional learning in a school (Lave & Wenger, 1991). Accordingly, this study provided insight into the collaboration context at LCHS as well as the elements deemed most important in creating and maintaining Collaborative Inquiry in a PLC.

Definitions of Key Terms

Apprentice Phase: typically includes the first two or three years of teaching.

Collaborative Inquiry: a structure in which members of a Professional Learning Community (PLC) come together to systematically examine their educational practices. Teams work together to develop theories and action steps and assess the impact of their actions. Throughout the process, teams test what they think will work against what actually works.

Departmental Collaboration: established meeting times (twice each month for 60–90 minutes) during which members of a department meet to discuss curriculum, assessment, and student achievement.

Distinguished Phase: includes teachers who are truly exceptional practitioners who make their schools and communities better places.

Expert Phase: occurs when teachers achieve excellence in their craft commensurate with national board certification.

The Five Themes of PLC Work: Lieberman and Miller (2008) reviewed eight research studies of PLCs in order to define PLC work and articulate the signature theories and practices of

them. From an examination of these studies, Lieberman and Miller gleaned five themes, which defined a theoretical framework for professional learning community work. These themes are context, developing commitments, developing capacity, balancing content and process, and challenges. Lieberman and Miller presented these themes as lenses for understanding how teachers come together and learn to build teaching competence while building professional community.

Life Cycle of the Career Teacher: The phases through which a teacher progresses over the course of his or her career. Steffy and Kappa Delta Pi (2000) argued that there are six phases through which career teachers move during their time in the classroom. At each phase, teachers need different kinds of professional development and support to enrich their practice (Steffy & Kappa Delta Pi, 2000). Teachers in different phases bring different needs and perspectives to professional collaboration that must be included in data collection in order to gather comprehensive information about how to meet the needs of all teachers at the school site. One of the phases occurs before a teacher is employed at a school site and one occurs after retirement, so four of the six phases will be explored.

Professional Learning Community: a group of educators that meets regularly, shares expertise, and works collaboratively to improve teaching skills and the academic performance of students.

Professional Phase: emerges as teachers build confidence in their practice and strong rapport with students.

Traditional Models of Professional Development: professional development that employs the workshop model where participants are presented with information they are meant to

incorporate into their practice. Workshops are additive; they endeavor to teach new knowledge and skills to educators. Participants are not involved in the planning or implementation of the sessions and not required to take an active role during the session. The workshops are often episodic and do little to change classroom practices. (Lieberman & Miller, 2008; McLaughlin & Talbert, 2006).

CHAPTER 2

REVIEW OF THE LITERATURE

Introduction

The purpose of the following literature review is to characterize the historical context of staff development and the challenges inherent in American education. This chapter will explain the history of attempts at external reform in American schools as well as relevant legislation including the recent Common Core State Standards Initiative. Additionally, this chapter reviews the challenges schools face as they seek to adapt to the higher standards outlined in the Common Core State Standards Initiative and to change a long history of lackluster and unequal student achievement. This literature review outlines an alternative to episodic, external, and ineffective models of professional development and describes the necessity of using collaborative efforts to navigate the complex problems that educators face. Specifically, this chapter describes Collaborative Inquiry in the context of a Professional Learning Community. Lieberman's (2008) themes of PLC work provide the theoretical framework for this study. Three of the five themes she outlined are highlighted and provide an overarching construct into which the conceptual frameworks of Collaborative Inquiry and DuFour's (2008) conception of PLCs fit. This chapter explains how Collaborative Inquiry in the context of PLCs can help educators engage in and navigate the three PLC themes of *commitments*, *capacity*, and *balancing content and process*. Supporting research is reviewed. Although more is known about the benefits of Collaborative Inquiry and PLCs than how to start and sustain them (McLaughlin & Talbert, 2006), a review of the literature outlines the ways in which PLCs benefit teaching and learning.

Context and Challenges for American Education

Professional Learning Communities and Collaborative Inquiry are embedded within the context of how staff development has evolved in the United States over time. Current models of teacher staff development in the United States extend from the late 1950s and early 1960s, when Congress passed the National Defense and Education Act (NDEA) in 1958, which was intended to close a perceived gap between Soviet and American achievement in science and technology (Lieberman & Miller, 2008). Improving the education system was viewed as an aspect of national defense. Universities were enlisted to bolster teaching and curriculum by offering discipline-specific summer institutes. This demonstrated the first national effort to reform schools from the outside by offering teacher staff development (Lieberman & Miller, 2008).

In 1965, the Elementary and Secondary Education Act (ESEA) was passed as a part of President Lyndon B. Johnson's "War on Poverty." This legislation addressed a growing fear that U.S. scientists were falling behind scientists in the Soviet Union and positioned schools as agents of social change. As with the NDEA, government funds were used to employ experts to develop and disseminate curricular materials. The NDEA and ESEA established a training model for staff development that relies on the transmission of knowledge by experts and still flourishes today (Lieberman & Miller, 2008). These pieces of legislation aimed to increase the technological sophistication and power of the United States and sought to reform schools using external expertise. Similarly, the No Child Left Behind (NCLB) Act utilized the notion of external pressure.

The publication of *A Nation at Risk* in 1983 by the National Commission on Excellence in Education demonstrated an attempt to instill a sense of urgency in educators by outlining a

national crisis. Advocates believed that principals and teachers would not improve student achievement in American schools unless they were provided with a rationale for urgency (DuFour et al., 2008). The report presented the substandard quality of American education as a threat to national security (Education, 1983). The No Child Left Behind (NCLB) Act of 2001 sought to codify needed improvement by requiring schools to show measured improvement in student achievement or face punitive measures. NCLB initiated a stringent focus on accountability measures and represented an attempt to legislate the establishment of a new paradigm for teaching and learning (Owens & Valesky, 2011). By the time President George W. Bush left office in 2008, even the original advocates had concluded that No Child Left Behind failed to improve student achievement (Dufour & Marzano, 2011). The external pressure inherent in the No Child Left Behind legislation did not improve schools.

While states have reported increasing reading proficiency on annual yearly progress (AYP) results under the No Child Left Behind legislation of 2001, reading scores for fourth- and eighth-grade students on the NAEP assessment have flat-lined in recent years. The American Institute for Research has found that the higher a state's reported AYP, the lower the proficiency standards are within the state (Ross, 2010). Bob Wise, former governor of West Virginia and director of the Alliance for Excellence in Education, noted that lowered proficiency standards indicate that 30% of high school graduates in the United States were not actually prepared for college or the workforce. This would leave approximately 40% of ninth-graders who graduate high school prepared for higher education and the workforce (Ross, 2010).

The Common Core State Standards Initiative of 2009, which detailed what K–12 students should know in English and mathematics by the end of each grade, derived from the idea that

having fewer, more rigorous standards that are aligned with college and career proficiencies can assuage the achievement crisis (Ross, 2010). Standards were released for English and mathematics on June 2, 2010. Currently, 44 of the 50 states are members of the Common Core State Standards Initiative. The Common Core State Standards for reading are based on research that shows that college and career readiness hinges on a student's ability to read complex texts. While the complexity of reading demands for college, career and citizenship have held steady or risen over the past half century, the complexity of texts students are exposed to has steadily decreased (Initiative, 2014). The Common Core State Standards (CCSS) sought to address this gap and to ultimately render the K12 schooling experience more rigorous, focused, and productive. An underlying principal of the CCSS is the importance of helping all students acquire the essential skills and knowledge they need to be prepared for college and career, regardless of where they live (DuFour & Fullan, 2013).

DuFour and Marzano (2011) noted that contemporary American educators face the most daunting challenge in the history of public education because the CCSS raises academic standards to the highest level in history, schools are tasked with helping every student achieve these standards, and huge achievement gaps exist across racial and socioeconomic lines with respect to graduation rates, test scores, and advanced proficiency. According to a study by the McKinsey group, while the percentage of black and Latino students was increasing in the United States, these students were, on average, two to three years behind White students of the same age in academic achievement, and their high school graduation rates were 20% lower (Dufour & Marzano, 2011). Additionally, students eligible for free or reduced lunch were roughly two years behind the average better-off student of the same age (Dufour & Marzano, 2011). The

United States has continued to score low on measures of education performance and has consistently scored 20th or worse among the 34 countries in the Organization for Economic Cooperation and Development. The gap between high-achieving students and struggling students has grown (DuFour & Fullan, 2013). At a time when the link between education and lifetime opportunity has never been stronger, there is increasing urgency around excellent and equal educational opportunities for all students (DuFour & Fullan, 2013).

DuFour and Fullan (2011) asserted that every state participating in the CCSS Initiative must provide the structure and support to help educators develop their capacity in implementing the CCSS in a way that has a positive impact on learning for all students. Urgency alone is not a sufficient impetus for change (DuFour et al., 2008). In place of sanctions or the transmission of external expertise, schools need strategies to develop the capacity of educators to become more effective. Schools and student outcomes will not improve unless professional practice improves (Dufour & Marzano, 2011). McLaughlin and Talbert (2006) contended that not enough teachers can organize instruction to highlight the cognitive skills that our information-based society demands. They additionally noted that not enough teachers are equipped to address the disparity in achievement for students from diverse cultural, ethnic, and economic backgrounds.

The complex problems that educators are faced with and the changes that schools need to embrace can only be successfully navigated in collaborative efforts (Bray, 2000; Lieberman & Miller, 2008; McLaughlin & Talbert, 2006). Schools can only enact necessary improvements and changes if they focus on strengthening relationships and building a collective sense of self-efficacy (DuFour et al., 2008). PLCs provide an astute framework for supporting school-wide improvement efforts, not only because they support reform efforts, but because they can play a

central role in dramatically improving the overall performance of schools (DuFour et al., 2008; DuFour & Fullan, 2013; Hall & Hord, 2006). There is no formula for successful adoption of the CCSSs or for closing the achievement gap. But focused Collaborative Inquiry in a PLC can support schools in the intensive collaborative work necessary to tackle these challenges (Bray, 2000; DuFour et al., 2008; DuFour & Fullan, 2013; Dufour & Marzano, 2011; Lieberman & Miller, 2008; McLaughlin & Talbert, 2006)

Contributing Theories and Frameworks

Lave and Wenger (1991) first introduced the idea that learning occurs within peer interactions. They argued that learning is not about what happens in peoples' minds; it is about their relationships and conversations with others involved in similar work (Lave & Wenger, 1991). Collaborative Inquiry work in PLCs hinges on this concept and empowers educators to construct knowledge. Lieberman and Miller (2008) argued that even though most teachers consider educational theory and research to be irrelevant, teachers are often working from "tacit knowledge and implicit theories" (Lieberman & Miller, 2008, p. 20) and that PLCs can help teachers become "self-conscious knowledge-workers" (Lieberman & Miller, 2008, p. 20) who create their own knowledge and theories of practice. The creation of this knowledge relies on Schön's (1983) conception of reflective practice in which professionals reflect on their actions and engage in collegial conversations to frame learning and build collective capacity.

Most current professional development focuses on bringing best practices from experts outside of the school to the teachers within it. PLCs, however, assume that best practices reside within the collective knowledge of the members of a school community and can be uncovered through collective work (Lieberman & Miller, 2008). Other researchers have supported the

notion of collective knowledge. Bruner's (1996) conceptions of "distributed intelligence" and discovery learning underscores this conception of knowledge as collective. Bruner argued that intelligence is distributed and exists in resources and the minds of others and, additionally, that learning occurs through a process of problem solving whereby participants apply background and existing knowledge to situations in order to create new knowledge (Bruner, 1996). Cochran-Smith and Lytle (1999) also asserted that knowledge is collectively constructed. They argued that teachers, specifically, learn collaboratively and primarily in inquiry communities or networks (Lytle, 1999).

Teacher Isolation

Customary models of professional development are often episodic and additive, doing little to change classroom practices or the prevailing culture of teacher isolation. Just as harmful as externally driven professional development that is disconnected from the needs and interests of teachers is the prevailing culture of teacher isolation. Teacher isolation and episodic professional development prevent the collaboration and shared learning essential to improving student achievement. Meaningful collaboration in teacher communities can help to advance equitable educational outcomes for all students (Dufour & Marzano, 2011; V. E. Lee, & Smith, J. B., 1995, 1996; V. E. Lee et al., 1997).

The existing structure of schools isolates teachers from one another and buffers them from accountability. Teacher isolation has adverse consequences for students, teachers, and school improvement efforts because it prevents the collaboration and shared learning essential to improving student achievement (David, 2009; DuFour et al., 2008). Teachers are more likely to act on new knowledge and enact changes in their practice if they are working collaboratively

with colleagues (DuFour et al., 2008). PLCs are a vehicle for supporting Collaborative Inquiry and implementing transformative professional development (Nelson, 2008).

Andragogy

Adult learning theory supports the use of Collaborative Inquiry and PLCs as vehicles for professional learning. Knowles's (1984) conception of adult learning explains that adults need to be involved in planning their learning, that experience provides the basis for learning activities, that adults are most interested in learning subjects that have immediate relevance and impact to their job, and that adult learning is problem-centered (Knowles, 1984). When participants engage in Collaborative Inquiry in a PLC, they determine a focus for their work together, which has immediate relevance to their professional practice. In this way, they effectively design their own learning trajectory. Collaborative Inquiry in a PLC is rooted in classroom experience and is problem-centered, focusing on problems of practice or challenges that participants encounter (Donohoo, 2014; DuFour et al., 2008). Cochran-Smith and Lytle (1999) also asserted that Collaborative Inquiry in a PLC allows teachers to appropriately direct their own learning in a way congruent to their professional lives.

Life Cycle of the Career Teacher

Steffy and Kappa Delta Pi (2000) have argued that there are six phases through which career teachers move during their time in the classroom. At each phase, teachers need different kinds of professional development and support to enrich their practice (Steffy & Kappa Delta Pi, 2000). Teachers in different phases bring different needs and perspectives to professional collaboration that must be included in data collection in order to gather comprehensive information about how to meet the needs of all teachers at the school site. One of the phases

occurs before a teacher is employed at a school site and one occurs after retirement, so four of the six phases will be explored in this study. Those phases are *apprentice*, *professional*, *expert*, and *distinguished*. These phases will be explored in the data collection and analysis.

Theoretical Framework: The Five Themes of PLCs

Lieberman and Miller (2008) defined PLCs as “ongoing groups of teachers who meet regularly for the purpose of increasing their own learning and that of their students” (p. 2). Lieberman and Miller reviewed eight research studies of PLCs in order to define PLC work and articulate the signature theories and practices of them. From an examination of these studies, Lieberman and Miller gleaned five themes, which defined a theoretical framework for professional learning community work. These themes are context, developing commitments, developing capacity, balancing content and process, and challenges. Lieberman and Miller presented these themes as lenses for understanding how teachers come together and learn to build teaching competence while building professional community.

The theme of *context* illustrates that different contexts (communities, cultures) present learning communities with different processes and different challenges. Educators do not have control over the context of a learning community, but must consider the way in which it impacts PLC work. The next theme is that *commitments* take time to develop; members must develop a sense of trust, get to know each other, and build norms before they can commit to learning from each other. As members engage in PLC work, they gradually commit to learning from one another and start to feel differently about themselves, their peers, and their learning; they commit to new identities as community members. The theme of *capacity* suggests that members’ capacity to engage in learning communities grows as commitments develop. Members develop

the capacity to make connections between their learning, their teaching practice, and the impact these have on students (Lieberman & Miller, 2008). The fourth theme of PLC work is *balancing content and process*. Schools engaged in learning community work must determine how to deepen subject matter knowledge while remaining mindful of the processes that keep communities healthy. Teachers best develop new knowledge when content is balanced with community; when communities acknowledge that human resources are essential and put relationship building on the agenda (Lieberman & Miller, 2008). The final theme of PLC work is *challenge*. Challenge is inherent in PLCs and, notably, schools struggle to balance PLC work with the competing demands of the school and the district.

Lieberman and Miller (2008) described *challenge* and *context* as fixed themes over which educators do not exert control. The researchers presented *challenge* as inescapable. They did not advise educators to attempt to avoid challenge, but rather to expect to navigate it. Additionally, the theme of *context* is a fixed aspect of PLC work. While educators cannot change the community where a school is located or the culture that surrounds it, they must expect these factors to impact the work of the PLC. The other three themes of PLC work, however, are dynamic processes with which educators and leaders must engage. DuFour et al.'s (2008) conception of the six characteristics of the PLC, and Donohoo's (2013) conception of the structure of Collaborative Inquiry within a PLC work to operationalize the three themes of *developing commitments*, *developing capacity*, and *balancing content and process*. Figure 1 depicts the theoretical framework for this study.

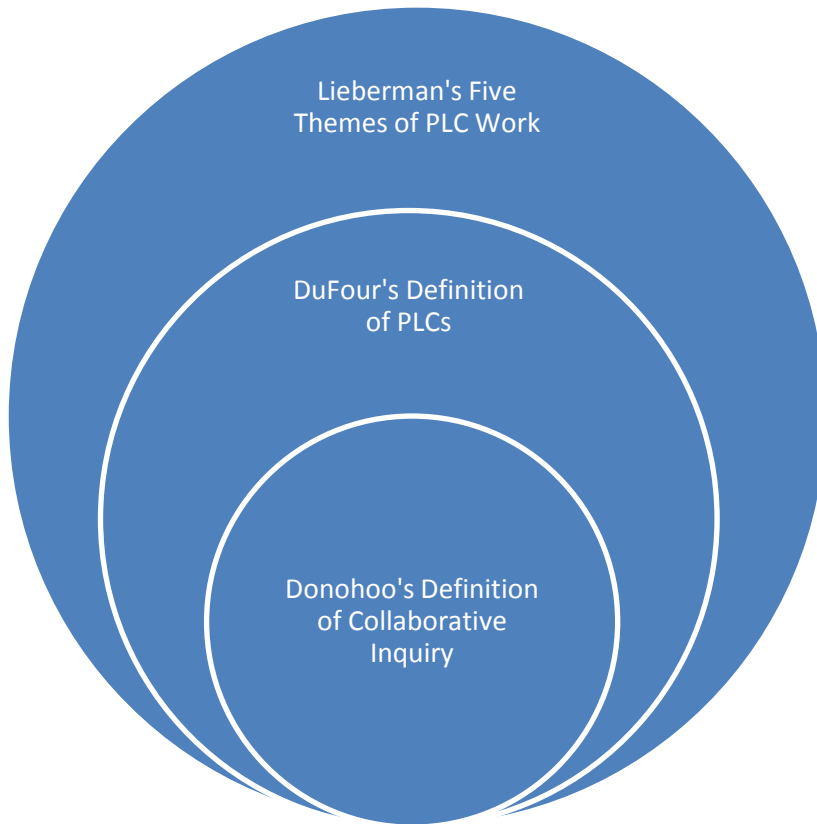


Figure 1. Contributing theories conceptual framework graphic.

The Six Characteristics of PLCs and Collaborative Inquiry

DuFour et al. (2008), Donohoo (2013), and other supporting researchers have contended that robust work in PLCs develops the *commitments* and *capacities* of participants. DuFour and Fullan (2013) noted that individuals will commit to membership in a learning community after having experienced the changes it can engender. DuFour et al. (2008) additionally asserted that changing how people act and interact at a school can change their beliefs about their own capabilities and those of their peers. The six characteristics of a PLC, which include the process of Collaborative Inquiry, suggest a conceptual framework for navigating the theme of *balancing content and process*. Lieberman and Miller (2008) argued that teachers can best develop new

knowledge when content is balanced with community. PLCs must simultaneously prioritize deepening the subject matter knowledge of participants and concentrate on the processes that keep communities alive. DuFour et al.'s six characteristics of a PLC and Donohoo's conception of Collaborative Inquiry provide a conceptual framework that schools can use to maintain both priorities. Following is a more detailed description of the six characteristics of a PLC and the characteristics of Collaborative Inquiry.

The characteristics of PLCs. DuFour et al. (2008) defined PLCs as educators committed to working collaboratively in ongoing processes of collective inquiry and action research to achieve better results for the students they serve. PLCs operate under the assumption that the key to improved learning for students is continuous, job-embedded learning for educators. (p. 14)

This conception of PLCs includes Lieberman and Miller's (2008) theme of *developing commitments* by defining PLCs as a group of educators committed to collective inquiry and learning. It also includes the theme of *developing capacity* by defining PLCs as a place where educators engage in continuous job-embedded learning with the purpose of improved learning for students. It is important to note that PLCs are defined by a process of collective inquiry, which will be further explained below.

DuFour et al. (2008) defined the six characteristics of a PLC as shared mission, vision, values, and goals; collaborative culture with a focus on learning; collective inquiry into best practice and current reality; action orientation: learning by doing; a commitment to continuous improvement; and results orientation. These characteristics provide a conceptual framework for the theme of *balancing content and process*. The first two characteristics describe the aspects of

PLC work that keep a community alive, while the last four describe the aspects of PLC work that assist educators in deepening content knowledge. These last four aspects are encompassed by the characteristics of Collaborative Inquiry.

DuFour and Fullan (2013) described the importance of clarity about what a PLC is and what it seeks to do. Without a clear understanding of the structure and purpose of a PLC, educators may not be able to go beyond pooling opinions, sharing personal anecdotes, or citing past precedents; the structure of a PLC helps educators learn together (DuFour & Fullan, 2013). To this end, DuFour et al. (2008) outlined the fundamental questions of PLC work:

- What is it we want our students to know?
- How will we know if they are learning?
- How will we respond when individual students do not learn?
- How will we enrich and extend the learning for students who are proficient? (pp. 183–184)

Collaborative Inquiry provides a structure for asking and answering these questions and a framework for achieving the aspects of a PLC that help participants deepen their content knowledge.

The characteristics of collaborative inquiry. Cultivation of a PLC allows educators to attend to processes that foster community. Collaborative Inquiry encompasses the aspects of PLC work that attend to content knowledge within that community. Collaborative Inquiry is defined as a process that occurs within a PLC or collaboration context (Bray, 2000; David, 2009; Donohoo, 2014; Lytle, 1999; Nelson, 2008; Zech, Gause-Vega, Bray, Secules, & Goldman, 2000) and can assist with the theme of *balancing content and process*. In effect, Collaborative

Inquiry concretizes the PLC characteristics pertaining to content: collective inquiry into best practice and current reality; action orientation: learning by doing; a commitment to continuous improvement; and results orientation. While Collaborative Inquiry involves collective inquiry into best practice and current reality, it also relies on a willingness to act on this inquiry, a commitment to learning and improving over time and an emphasis on results.

Donohoo (2013) defined Collaborative Inquiry as “a structure in which members of a Professional Learning Community come together to systematically examine their educational practices” (p. 2). She noted that Collaborative Inquiry provides the structure for teams to collaboratively generate knowledge by investigating problems of practice. Other conceptions of Collaborative Inquiry noted that the result of the enterprise is meaning making and/or the creation of knowledge (Bray, 2000; Lytle, 1999; Nelson, 2008). Nelson, Perkins, and Hawthorn (2008) defined Collaborative Inquiry as a stance of knowledge negotiation among group members. In their conception, Collaborative Inquiry employs dialogue grounded in shared experience and a shared focus, where “group members question ideas, actions and artifacts; examine varying perspectives and beliefs, and work toward a co-construction of understanding of their collaborative work” (Nelson, 2008, p. 272). Cochran-Smith and Lytle (1999) also noted that communities with an inquiry stance engage groups of teachers in the collective construction of knowledge through “conversation and other forms of collaborative analysis” (p. 294). Bray (2000) additionally articulated meaning making as a part of the Collaborative Inquiry process, arguing that the purpose of Collaborative Inquiry is the generation of valid new knowledge and meaning that emerges out of an authentic process of inquiry through cycles of action and reflection. The creation of knowledge is at the heart of Collaborative Inquiry work.

Additionally, Collaborative Inquiry can spur change in teaching practice. Cochran-Smith and Lytle (1999) explained this potentiality with the paradigm of teaching as praxis; the idea that teaching involves a dialectical relationship between critical theorizing and action. Research on teacher learning communities has shown that they foster inquiry and change in teaching practice (Zech et al., 2000). Collaborative Inquiry relies on a context of collaborative work, and an assumption that this work will increase student learning by impacting teaching (David, 2009). Nelson et al. (2008) contended that Collaborative Inquiry can spur the complex process of teacher change by causing changes in deeply held beliefs and habits of practice. They noted that learning embedded in Collaborative Inquiry is not merely additive, but can be transformative. Nelson et al. (2008) described three case studies in which Collaborative Inquiry based in content engendered critical reflection and self-initiated change. Donohoo (2014) also described Collaborative Inquiry as an effective approach to sustaining meaningful changes in practice.

Collaborative Inquiry partially derives from action research and relies on cycles of reflection and action (Bray, 2000). Donohoo (2014) defined Collaborative Inquiry as occurring within a PLC, and outlined four stages that aid educators in creating knowledge and change in teaching practice. Donohoo enumerated the states of Collaborative Inquiry as framing the problem and developing a meaningful focus, collecting evidence, analyzing evidence to refine thinking, documenting the process, and identifying additional learning needs. Bray's (2000) conception of Collaborative Inquiry relied on first creating a PLC and then engaging in the cycles of inquiry that Donohoo has described.

Benefits of Collaborative Inquiry and PLCs. Inquiry embedded in a PLC can transform teaching and learning for teachers and students (Lieberman & Miller, 2008). DuFour

et al. (2008) noted how PLCs benefit teachers: increased commitment to the mission and goals of a school, increased understanding of content, significant advances in adapting instruction to the needs of students, and how PLCs benefit students: larger academic gains in math, science, history, and reading; smaller achievement gaps between students from different backgrounds; and decreased dropout rates. DuFour and Fullan (2013) noted that the State of Delaware saw increased student achievement in reading and math after implementing common collaborative planning time in every school for one year. Using data from the National Longitudinal Student of 1988, Valerie Lee and colleagues conducted three studies that consistently showed that teacher community had a positive statistical effect on student achievement gains (V. E. Lee, & Smith, J. B., 1995, 1996; V. E. Lee et al., 1997). The studies showed that socioeconomic status had less effect on achievement gains in schools with collaborative teacher communities.

Since Collaborative Inquiry and PLCs are interconnected, studies of PLCs also concern Collaborative Inquiry. PLCs are defined as implementing Collaborative Inquiry, and Collaborative Inquiry is defined as occurring within a PLC (Donohoo, 2014; DuFour et al., 2008). Researchers, however, have cited Collaborative Inquiry as a vehicle for school improvement and as holding the most promise for professional learning because it provides a support context for sustained reflection on teaching practices and student understanding (David, 2009; Zech et al., 2000). Collaborative Inquiry can be used powerfully for instituting change and improvement in education and can assist with goals for education reform (Catelli, 1995). Using Collaborative Inquiry and PLCs as vehicles to pass down mandates, however, inhibits meaningful learning and productive collaboration (Lytle, 1999; McLaughlin & Talbert, 2006; Nelson, 2008).

Supporting Research

The following section reviews research connected to the theoretical context in which PLCs and Collaborative Inquiry are situated. Three of Lieberman and Miller's (2008) five themes of PLCs are discussed. The themes of *context* and *challenge* are not discussed because they are themes over which educators cannot exert control.

Developing commitments. Lieberman and Miller (2008) asserted that commitments take time to develop; members must develop a sense of trust, get to know each other, and build norms before they can commit to learning from each other. As members engage in PLC work, they gradually commit to learning from one another and start to feel differently about themselves, their peers, and their learning; they commit to new identities as community members.

DuFour et al. (2008) reinforced that collective commitments in a PLC help educators orient themselves in new ways toward their work and redefine their roles over time. Commitments incline community members toward action and solution orientation and encourage an internal locus of control. Over time, collective commitments help educators devote themselves to each other and to improving their school communities. DuFour and Fullan (2013) underscored that the process of a PLC deepens commitments over time and allows common purpose, mutual accountability, and collective efficacy to emerge. The researchers agreed with Lieberman and Miller (2008) that true commitments materialize over time and cannot be mandated to groups and argue that it is a group's commitments that impel it to take action and enact change. They argued that true commitment occurs when members experience the powerful change that can occur in the context of PLC work (DuFour & Fullan, 2013).

In a case study conducted over two years, Zech et al. (2014) observed a Collaborative Inquiry group developing growing commitment to and reliance on collective analysis of evidence for student understanding over time. The researchers noted that the collective commitments of educators engaged in Collaborative Inquiry provided a supportive context for sustained reflection on teaching practice and student understanding. Numerous scholars have cited the importance of norms and trust as the foundation of PLC work (Donohoo, 2014; DuFour et al., 2008; DuFour & Fullan, 2013; Dufour & Marzano, 2011; Hall & Hord, 2006; McLaughlin & Talbert, 2006; Nelson, 2008; Zech et al., 2000). Researchers have also discussed the tendency of norms and trust to develop through commitments that deepen over time. In a narrative case study of a professional development group, Nelson et al. (2008) noted that participants viewed the evolution of group norms, relationships, and commitments as facilitating the development of a culture of inquiry among the group members.

Developing capacities. The theme of capacity suggests that members' capacity to engage in learning communities grows as commitments develop. Members develop the capacity to make connections between their learning, their teaching practice, and the impact these have on students (Lieberman & Miller, 2008).

DuFour and Marzano (2011) noted that the best strategy for improving schools is to build the collective capacity of educators to function as members of a PLC, and that PLCs are a vehicle for increasing the instructional capacity of educators. DuFour et al. (2008) argued that collaboration does not positively impact the capacity of educators in the absence of certain commitments. Educators must commit to a shared mission, vision, and values as well as membership in a collaborative culture with a focus on learning. Without these commitments,

collaboration is not capacity building and can reinforce the status quo or provide opportunities to voice complaints and express resignation. DuFour and Fullan (2013) asserted that educators develop shared commitments as they form shared mindsets and are able, accordingly, to commit to collaborative work in PLCs. Young (2006) used an embedded systems approach to examine teacher data use in four schools and determined that teacher commitments to norms, each other, and to student learning was what allowed groups to build the capacity to transition from “story swapping” to productive collaboration. Participant commitments rendered collaboration impactful.

In a professional community where participants use an inquiry stance, teachers develop the capacity to engage in the joint construction of knowledge (Lytle, 1999). They become more aware of their tacit knowledge, question assumptions, and use data to consider alternatives. In these inquiry communities, teachers use rich, descriptive discussion to analyze different conceptions of teaching and learning and to take action accordingly. Teachers are more likely to develop the capacity to use and analyze data systematically when they are working in groups (Ingram, 2004). Outside of groups, teachers are more likely to rely on intuition and anecdotes.

Educators in a PLC can develop capacity to impact teaching and learning. After conducting a narrative case study of a professional development group, Nelson et al. (2008) described the process of knowledge negotiation in the context of Collaborative Inquiry as holding the most promise for professional learning. The researchers argued that student learning advances as teacher learning advances. Bray (2000) agreed that Collaborative Inquiry allows teachers to create knowledge and meaning through cycles of action and reflection. In a segment of the teachers’ workplace research project (which involved fieldwork and surveys in 16 public

and private secondary schools) researchers found that the nature of the professional community at a school appears more critical than any other factor to the character of teaching and learning for teachers and their students (McLaughlin, 1992).

David (2009) pointed out that, although Collaborative Inquiry is one of the most promising strategies for strengthening teaching and learning, it does not happen naturally because, at most school sites, teachers are isolated and take individualistic approaches to teaching. When commitments to Collaborative Inquiry are cultivated, however, teachers develop the capacity to increase their knowledge base and change their practice (David, 2009). Fullan, Cuttress, and Kilcher (2009) noted that capacity building at a school has to be a collective phenomenon and that building group capacity is challenging because it involves working together in new ways (Fullan, 2009). The authors also argued that schools have to develop new cultures for learning in order to improve, and that establishing PLCs can assist this process (Fullan, 2009). Lieberman and Miller (2008) argued that teacher work in PLCs can help educators build the capacity to transform teaching and learning for teachers and students.

Balancing content and process. The fourth theme of PLC work is balancing content and process. Schools engaged in learning community work must determine how to deepen subject matter knowledge while remaining mindful of the processes that keep communities healthy. Teachers best develop new knowledge when content is balanced with community; when communities acknowledge that human resources are essential and put relationship building on the agenda (Lieberman & Miller, 2008). This theme of PLC work notes that educators must commit both to ideas and to relationships between community members.

The six characteristics of a PLC, which include the process of Collaborative Inquiry, suggest a conceptual framework for navigating the theme of *balancing content and process*. According to Lieberman and Miller (2008), teachers best develop new knowledge when content is balanced with community. PLCs must simultaneously prioritize deepening the subject matter knowledge of participants and concentrating on the processes that keep communities alive. DuFour et al.'s (2008) six characteristics of a PLC and Donohoo's (2014) conception of Collaborative Inquiry provide a conceptual framework that schools can use to maintain both priorities. The following research reinforces the necessity of balancing content and process for productive PLC work.

In an embedded-systems approach to examining teacher data use in four schools, Young (2006) found that a group's process, including norms of interaction, leadership, and agenda setting, determined whether participants engaged in data-analysis and meaningful discussion of content. The norms of a group's collaborative process could legitimize joint analysis of student work and data and curb the exchange of war stories (Young, 2006, p. 543). Cochran-Smith and Lytle (1999) argued that there are multiple dimensions to the process work in inquiry communities that contribute to participants' ability to engage in the joint construction of knowledge. Among these important dimensions of process are time, discourse, and texts. These studies describe that a group's process impacts its exploration of content.

McLaughlin and Talbert (2006) studied education reform initiatives through both the Students at the Center (SATC) project, which funded professional development organizations to collaborate to improve teaching and involved field-based research and qualitative and quantitative analyses, and the Bay Area School Reform Collaborative (BASRC), which featured

inquiry processes throughout a school as a vehicle for developing school communities. They involved case studies of 10 schools. Over the course of their research, they noted that effective learning environments for teachers needed to be both knowledge-centered (helping learners deepen their conceptual knowledge and skills in a content domain) and community centered (involving colleagues in joint work that helps participants collectively build new understandings and practices). They discovered that facilitators of PLCs must aim to both deepen teachers' knowledge and skills and develop practices for teacher collaboration (McLaughlin & Talbert, 2006).

DuFour and Fullan (2013) echoed this claim, noting that educators cannot collaboratively deepen their knowledge of content and teaching or participate in evidence-based conversations unless a trusting environment is fostered; without trust, the process of a PLC cannot function optimally. Bray (2000) agreed that knowledge acquisition and group learning do not occur in an inquiry group without a sense of teamwork and synergy. In a narrative case study of a group of 12 professional development providers, Nelson et al. (2008) concluded that two important decisions allowed the group to function as a learning community: the use of protocols to examine data (content) and the construction and maintenance of norms for collaboration (process). The researchers highlighted that the development of a positive group process is a critical aspect of conducting Collaborative Inquiry. In a paper on longitudinal research on restructuring schools, Kruse and Louis (1993) concluded that PLCs rely on both structural and human resource conditions in order to exist. That is, PLCs rely on a knowledge base, rooted in the discipline of teaching as well as the human elements of shared values and caring relationships (Kruse, 1993).

Conceptual Framework

A careful review of the literature has shown that, to improve teaching and learning at a school by successfully creating Collaborative Inquiry embedded in a PLC, many facets of PLC work and Collaborative Inquiry must be considered. The researcher draws from Lieberman's five themes of PLC work, DuFour's (2008) conception of PLCs and Donohoo's (2014) notion of Collaborative Inquiry to develop a conceptual framework. Lieberman's (2008) five themes of PLC work serve as the overarching construct into which the conceptual frameworks of PLCs and Collaborative Inquiry fit. The research reviewed here underscores the centrality of the themes of commitments, capacity and balancing content and process. The themes of context and challenge are not discussed in depth because they are themes over which educators cannot exert control. The notion of balancing content and process is highlighted because it can be operationalized and worked toward immediately whereas commitments and capacity develop over time once individuals have engaged in collaborative work. According to Lieberman and Miller (2008), teachers can best develop new knowledge when content is balanced with community. PLCs must simultaneously prioritize deepening the subject matter knowledge of participants and concentrate on the processes that keep communities alive. DuFour et al.'s (2008) six characteristics of a PLC and Donohoo's (2014) conception of Collaborative Inquiry provide a conceptual framework that schools can use to maintain both priorities.

It is important to note that PLCs are defined as including Collaborative Inquiry and that Collaborative Inquiry is defined as occurring within a PLC. Thus the two constructs are interdependent and defined by each other. Collaborative Inquiry encompasses the aspects of PLC work that attend to content knowledge within that community: collective inquiry into best

practice and current reality; action orientation: learning by doing; a commitment to continuous improvement; results orientation. The first two elements of PLC work define the process-oriented aspects of the collaboration, which attend to the community: shared mission, vision, values and goals; and collaborative culture with a focus on learning. Thus DuFour's (2008) conception of PLCs and Donohoo's (2014) conception of Collaborative Inquiry provide a conceptual framework for balancing content and process. Additionally, by engaging in Collaborative Inquiry embedded in a PLC, participants deepen and increase commitments and capacity over time. The focal point of the conceptual framework for this research is the notion that the interconnected frameworks for PLCs and Collaborative Inquiry can operationalize the theme of balancing content and process and, over time, deepen the commitments and capacity of PLC members.

The researcher will use this notion of how the conceptual frameworks of Collaborative Inquiry and PLCs fit into the construct of Lieberman's themes of PLC work in order to code and evaluate evidence gathered as part of this case study. The research will investigate the extent to which educators at Lennox Charter High School employ the concepts of Collaborative Inquiry and PLCs to engage in or navigate the themes of commitments, capacity, and balancing content and process. The research has shown that PLC work revolves around the commitments of individuals, the capacity of individuals, and the ways in which group dynamics are balanced with the exploration of content. Thus, this case study will endeavor to promote deep understanding of the experiences of individuals and groups through observation, interviews, focus groups, and artifact analysis. Figure 2 depicts the conceptual framework for this study.

Conceptual Framework

The Five Themes of PLC Work

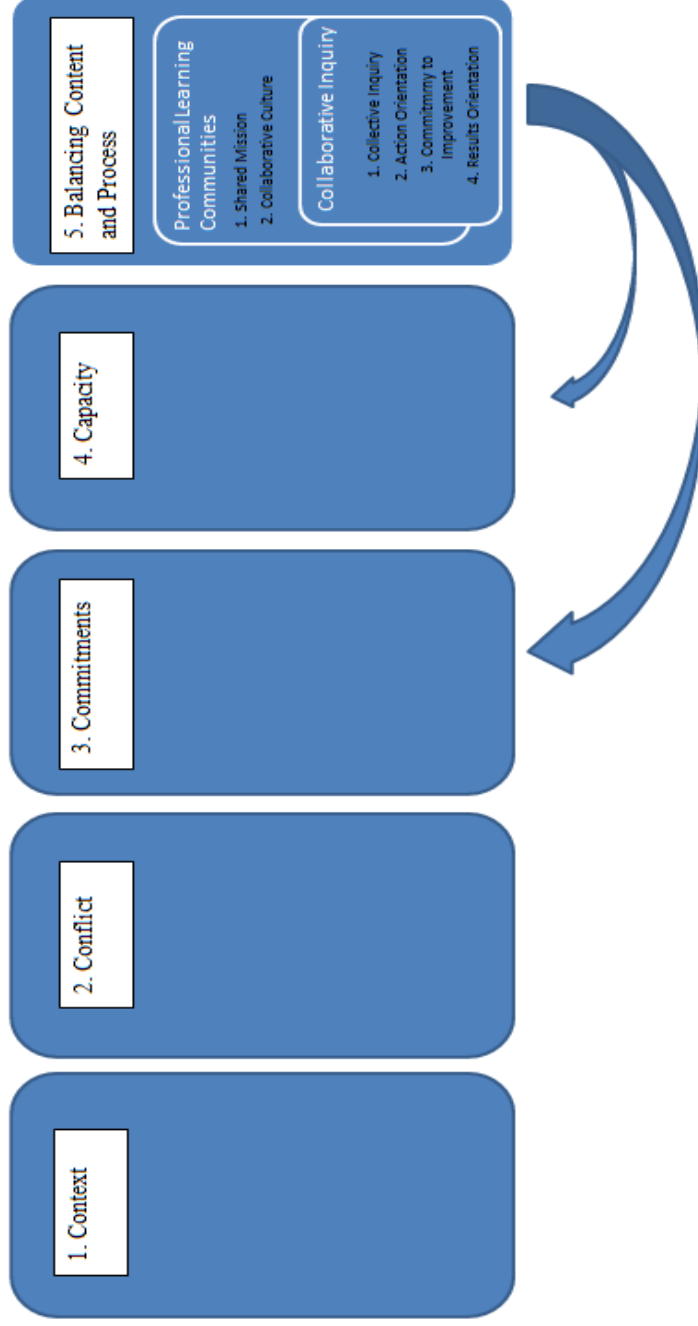


Figure 2. Conceptual framework.

CHAPTER 3

METHODOLOGY

Background

Managing the challenges inherent in American Education require substantial teacher learning (Lieberman & Miller, 2008; McLaughlin & Talbert, 2006). Educators need to change a legacy of unequal educational outcomes for students while increasing achievement for all. As states across the country transition to Common Core, adapting new and increasingly demanding national standards, teachers must deeply understand the new learning standards and meaningfully incorporate them into classroom learning for all students (DuFour & Fullan, 2013; Dufour & Marzano, 2011; Lieberman & Miller, 2008; McLaughlin & Talbert, 2006).

The current transition to the Common Core State Standards (CCSS) highlights the imperative to equip students with the complex intellectual skills needed in our technology- and information-based economy. In light of these curricular changes, educators must shift a long history of unequal student outcomes in American schools. DuFour and Marzano (2011) noted that contemporary American educators face the most daunting challenge in the history of public education because, while the CCSS raises academic standards to the highest level in history, schools are tasked with helping every student achieve these standards and huge achievement gaps exist across racial and socioeconomic lines with respect to graduation rates, test scores, and advanced proficiency (DuFour & Fullan, 2013; Dufour & Marzano, 2011; McLaughlin & Talbert, 2006).

Traditional models of professional growth have not been able to offer teachers the significant learning experiences they require to assuage the educational problems we face as a

nation (DuFour et al., 2008; Lieberman & Miller, 2008). Customary models of professional development are often episodic and additive, doing little to impact classroom practices (McLaughlin & Talbert, 2006; Nelson, 2008). Workshops and other externally developed professional development opportunities often do not build on teachers' knowledge or speak to daily challenges in the classroom (David, 2009; McLaughlin & Talbert, 2006). If professional development is not deeply connected to teacher needs, it cannot be meaningfully incorporated into classroom practice and thereby benefit students. Teachers should direct their own learning in a way congruent to their professional lives (Lytle, 1999).

Teachers are more likely to act on new knowledge and enact changes in their practice if they are working collaboratively with colleagues (DuFour et al., 2008). PLCs are a vehicle for supporting Collaborative Inquiry and implementing transformative professional development (Nelson, 2008). The complex problems that educators are faced with and the changes that schools need to embrace necessitate collaborative efforts (Bray, 2000; Lieberman & Miller, 2008; McLaughlin & Talbert, 2006). PLCs provide a framework for supporting school-wide improvement efforts, not only because they support reform efforts, but also because they can play a central role in dramatically improving the overall performance of schools (DuFour et al., 2008; DuFour & Fullan, 2013; Hall & Hord, 2006). More is known about the benefits of PLCs and Collaborative Inquiry than how to start and sustain them or hold participants accountable to them (McLaughlin & Talbert, 2006).

The purpose of this study was to examine the extent to which teachers at Lennox Charter High School perceived Collaborative Inquiry embedded in a PLC to be present in departmental

collaboration time and the elements deemed most important in creating and maintaining Collaborative Inquiry embedded in a PLC.

In this chapter, the researcher describes the design of the study, the rationale for this design, and the methods in which data were collected and analyzed.

Research Questions

The questions guiding this research were:

- What are teachers' perceptions of Collaborative Inquiry embedded in a Professional Learning Community during departmental collaboration time at Lennox Charter High School?
- What are the elements deemed most important for Lennox Charter High School to create and/or maintain Collaborative Inquiry embedded in a Professional Learning Community during departmental collaboration?

Design of the Study

This study employed a mixed-methods case study approach to answer the research questions and uncover the elements deemed most important to creating and/or maintaining Collaborative Inquiry embedded in a Professional Learning Community during departmental collaboration at Lennox Charter High School. The methodology chosen was considered most suitable because the implementation of professional collaboration is best understood in context. This study comprehensively analyzed a variety of data over time. Mixed-methods case studies are a design in which the researcher develops an in-depth analysis by collecting detailed qualitative and quantitative data over time (Yin, 2012). Case study research lends itself well to

mixed-methods research, as various approaches to research and analysis are possible (Creswell, 2014). The steps for data collection were as follows:

- The researcher administered a survey to the teachers of Lennox Charter High School
- The researcher invited all teachers to participate in focus groups and held two focus groups
- The researcher conducted four one-on-one interviews with teachers
- The researcher observed six departmental collaboration sessions and measured them against the Collaborative Inquiry Continuum

The first step for data collection in this case study was to administer a survey. The survey is a resource from Donohoo's (2014) book *Collaborative Inquiry for Educators*, which provides a continuum for each of the characteristics of Collaborative Inquiry. The survey required participants to characterize their team's collaborative work on the continuum in five over-arching categories. The researcher analyzed the results of the survey, noted trends, and gathered more details with data from focus groups, interviews, and observation. After collecting survey data, the researcher identified trends and formulated questions for the focus groups and interviews to further explore those trends. Finally, the researcher conducted observations to triangulate data concerning teacher perceptions of departmental collaboration against quantitative data measuring implementation of departmental collaboration.

A mixed-methods case study approach enabled comprehensive analysis of the extent to which Collaborative Inquiry in the context of a PLC exists and the elements deemed most important in creating and maintaining these structures because it includes both quantitative data and narrative responses from teachers involved in collaboration at the school site. The study

explored teacher perceptions of department collaboration as well as how to create and maintain Collaborative Inquiry embedded in a PLC. Case studies investigate a contextualized, contemporary phenomenon within specified boundaries (Hatch, 2002; Yin, 1994). Yin argued that a case study should be used when the context in which a phenomenon occurs is important to the research. In a case study, researchers collect detailed information using a variety of data collection procedures over a sustained period of time (Creswell, 2014; Yin, 1984). This particular study relied heavily on context as it sought to understand Collaborative Inquiry in the context of a PLC, and the potential to implement these structures in a specific context. Additionally, this study used a variety of data collection methods, both quantitative and qualitative, in order to obtain detailed information about teacher perceptions and implementation of these collaboration structures.

The goal of this study was to work collaboratively with the staff at Lennox Charter High School to better understand the current collaboration context and how to create and maintain Collaborative Inquiry in a PLC. Two focus groups comprised of teachers were employed to provide additional data relative to the themes and trends that emerged from the survey. Additionally, the researcher conducted interviews and observations to further explore themes and trends that emerged during data collection. The conceptual framework for the study guided all data collection. Using a pattern-matching data analysis, data gathered were compared to the conceptual framework (Yin, 2012).

The use of the survey, focus groups, interviews, and observations allowed the researcher to triangulate the data and explore the research questions.

Research Setting

Lennox Charter High School was the research setting. Lennox Charter High School was founded in 2000 and was located in an urban area of Los Angeles County. The school building was three years old, as the school had moved to a new building three years previously. The school was one of 20 schools that comprise a Charter Management Organization. The researcher was the principal of the school. There were two assistant principals, five classified staff members, 28 certificated teachers, and two counselors. Six hundred and twenty-five students attended the school in grades nine through 12. The student population was 99% Latino and 1% of the population was comprised of students of other ethnicities. There were seven African American students and three Asian/Pacific Islander students. The faculty population was ethnically diverse and included Latinos, Caucasians, African Americans, and Asian/Pacific Islanders.

Site Selection

Lennox Charter High School was chosen as the site for this case study because it was the researcher's school and, as such, the researcher deeply understood the context of the educational environment as well as the context of professional development and collaboration. Additionally, as the principal, the researcher had access to the site. She also had the ability to act on or implement research findings in order to create and maintain professional collaboration at this school site. Finally, the researcher had permission to conduct research from the Chief Academic Officer of the charter management organization, Annette Gonzalez.

Sampling Criteria

This case study employed purposeful sampling to select the teachers participating in the interviews, but all teachers were invited to respond to the survey and participate in focus groups. Although survey and focus group participants were comprised of willing volunteers, the researcher sought to interview teachers at different phases of their careers. Steffy and Kappa Delta Pi (2000) argued that there are six phases through which career teachers move during their time in the classroom. At each phase, teachers need different kinds of professional development and support to enrich their practice (Steffy & Kappa Delta Pi, 2000). Teachers in different phases bring different needs and perspectives to professional collaboration that must be included in data collection in order to gather comprehensive information about how to meet the needs of all teachers at the school site. Survey results could not be disaggregated for demographic data such as career phase since the survey was anonymous.

The researcher interviewed teachers at four of the six phases that Steffy and Kappa Delta Pi (2000) described. The reason for this was that one of the phases occurred before a teacher was employed at a school site and one occurred after retirement. The four remaining stages were *apprentice*, *professional*, *expert*, and *distinguished*. The researcher conducted an interview with a teacher from each of these stages. The *apprentice* phase typically includes the first two or three years of teaching. The *professional* stage emerges as teachers build confidence in their practice and strong rapport with students. *Expert* teachers achieve an excellence in their craft commensurate with national board certification, and *distinguished* teachers are truly exceptional practitioners who make their schools and communities better places (Steffy & Kappa Delta Pi, 2000).

Participants

The participants for this study were all teachers at Lennox Charter High School who completed the survey and participated in department collaboration time, all teachers who participated in focus groups as well as four teachers who participated in the interviews. The researcher interviewed teachers at each of the four phases of apprentice, professional, expert and distinguished. The list of participants is presented in Table 1, below.

Table 1

Participant Demographics

Gender	Race/Ethnicity	Phase of Career	Years Teaching
Female	Latino	Distinguished	5
Male	Korean	Apprentice	1
Male	Latino	Professional	15
Female	Latina	Expert	5
Female	Latina	Professional	11
Male	Latino	Professional	12
Female	Caucasian	Expert	6
Male	Caucasian	Apprentice	1
Male	Caucasian	Professional	3
Female	Pilipino	Distinguished	7
Male	Caucasian	Distinguished	11
Female	African American	Professional	4
Male	Japanese	Expert	5
Female	Caucasian	Professional	5
Male	Latino	Professional	14
Male	Latino	Professional	9
Female	Latina	Apprentice	1
Female	Caucasian	Expert	5
Female	Chinese	Professional	6
Female	Latina	Professional	3
Female	Caucasian	Expert	3
Male	Caucasian	Expert	12
Male	Caucasian	Professional	12
Female	African American	Professional	6
Female	Caucasian	Professional	4
Male	Caucasian	Expert	3
Male	Latino	Distinguished	25

Methods of Data Collection

Survey

The researcher distributed a survey to all teachers at Lennox Charter High School. The survey is a resource from Donohoo's (2014) book *Collaborative Inquiry for Educators*; the researcher obtained permission to use the instrument. Refer to Appendix A for written permission. The survey provided a continuum for each of the characteristics of Collaborative Inquiry. It asked respondents to characterize their team as either beginning, developing, applying, or innovating for each of the characteristics. The five over-arching categories for the survey were *Collaborative*, *Reflective*, *Learning Stance*, *Process Driven by Practice*, and *Action Informed by Evidence*. There were four questions in each category. The survey was disseminated to teachers in paper format. Results could not be disaggregated for demographic data such as career phase because the survey was anonymous.

Focus Groups

The researcher conducted focus groups to further investigate themes and patterns that emerged from the survey results. The subject of the focus groups was the extent to which teachers perceive Collaborative Inquiry within a PLC to be present at Lennox Charter High School and the elements deemed most important in creating and maintaining Collaborative Inquiry in the context of a PLC at Lennox Charter High School. Focus group questions further investigated trends in survey responses. All teachers at Lennox Charter High School were invited to attend focus groups. Four teachers participated in each focus group. The focus group interview data were collected using field notes and a recording device. The focus group transcripts were professionally transcribed.

Interviews

Semistructured, one-on-one interviews were conducted in 45-60-minute timeframes to further investigate themes and patterns that emerged from the survey and the focus groups. There was a set of predetermined questions for each interview but the researcher used additional questions for clarification and elaboration. The subject of the interviews was the extent to which teachers perceive Collaborative Inquiry within a PLC to be present at Lennox Charter High School and the elements deemed most important in creating and maintaining Collaborative Inquiry in the context of a PLC at Lennox Charter High School. The researcher interviewed teachers at each of the four phases of *apprentice*, *expert*, *professional*, and *distinguished* in order to capture the perspectives of teachers at each of the developmental stages of career teachers (Steffy & Kappa Delta Pi, 2000).

The interviews took place on the school's campus. The teachers who were interviewed were provided dates and time and asked to choose an interview time that worked best for their schedule or to suggest an alternative date and time as needed. The data collected in the interviews was documented in interview notes taken by hand by the researcher during the interview. Data were also collected through a recording device and the transcription of this recording.

Observations

In addition to collecting information from participants, the researcher triangulated that data by conducting observations and measuring teacher collaborative work against the Collaborative Inquiry Continuum, using the Collaborative Inquiry Observation Tool. The researcher observed six collaboration sessions. Departmental collaboration occurred twice per

month for 60 to 90 minutes. Departments met, usually in the department chair’s classroom, to work on common goals and discuss curriculum and student achievement. Department chairs set the agenda for these meetings. Departmental collaboration looked different for different departments but included activities such as analysis of student assessment data, collaboration around instructional strategies, discussion of assessments and/or rubrics, discussion of district initiatives, and collaboration around curriculum.

All other data collection methods relied on teacher perceptions of professional collaboration. Conducting observations allowed the researcher to compare the nature of professional collaboration with teacher perceptions of it. The observation tool allowed the researcher to rate departmental collaboration on the Collaborative Inquiry Continuum by scripting evidence for each of the characteristics listed on the continuum. The evidence was comprised of teacher words and actions during departmental collaboration. The timeline for this study is presented in Table 2.

Table 2

Timeline of Elements of Case Study

Task	August	September	October	November	December
Survey	X				
Focus Groups	X	X			
Interviews		X	X		
Observations		X	X	X	
Analysis of Data	X	X	X	X	X

Methods of Data Analysis

Data analysis was inductive in nature. Survey data were analyzed for themes and patterns using descriptive statistics. These themes and patterns were further analyzed in the focus groups and interviews. Focus group and interview data were collected using a digital recorder. Recordings were transcribed. The researcher categorized the data as themes, categories, and trends emerged. Observation data were analyzed using descriptive statistics and compared with the other data collection methods. The researcher began the analysis process by inductively identifying topics that emerged from the data related to the research questions. In this study, these topics pertained to the nature of professional collaboration and the elements deemed most important to creating and maintaining Collaborative Inquiry within a PLC. The researcher used a repeated process of aligning data with the conceptual frameworks for Collaborative Inquiry and PLCs in order to answer the research question. Data from the case study was analyzed and held against the conceptual framework constructed for this study. Triangulation of data includes multiple data points in order to ensure that a study accurately represents a phenomenon (Creswell, 2014). Data from the survey, focus groups, interviews, and observations were triangulated, and emergent themes and patterns were analyzed at each phase of data collection.

Trustworthiness

The researcher aimed to maintain trustworthiness within this study by utilizing established methods of data collection and analysis. The researcher maintained dependability by carefully detailing the data collection and analysis practices used so that the study could be

replicated. The researcher allowed the study findings to be explained by the data and not by the conceptions of the researcher.

Positionality

The researcher was a participant observer of professional collaboration at Lennox Charter High School. The study used the emic perspective, or the perspective of the participant as opposed to that of the researcher (Merriam & Merriam, 1998). As the principal of the school, the researcher regularly facilitated and regularly participated in professional collaboration. As such, the researcher gathered data and conducted an analysis of the data from the perspective of a member of the group projecting outward, rather than from the perspective of an outside researcher reporting what is seen. The use of the survey, focus groups, and interviews allowed the researcher to triangulate the data and answer the research questions through the perspective of the participants.

Validity

Based on the primarily descriptive nature of this case study, a causal relationship between the establishment of Collaborative Inquiry within a PLC and student achievement results or specific behaviors could not be established, nor was that the intention of the study. Instead, the focus was to identify factors necessary to creating and maintaining Collaborative Inquiry in the context of a PLC at Lennox Charter High School. In this case, internal validity was not appropriate as a measure of quality of this study (Yin, 2009). The purpose of the study was to identify how the nature of professional collaboration at this school site supported Donohoo's (2013) and DuFour's (2008) conceptual frameworks.

IRB

This study gained IRB approval, effective on May 21, 2015, through May 20, 2016. The assigned protocol number is **LMU IRB 2015 SP 62**.

CHAPTER FOUR

FINDINGS AND ANALYSIS

Restatement of Purpose

Educators must engage in substantial learning experiences in order to appropriately support all students as standards and curriculum become increasingly challenging. However, traditional models of professional development fall short as vehicles for growth (DuFour et al., 2008; Lieberman & Miller, 2008; McLaughlin & Talbert, 2006). Customary models of professional development are often episodic and additive, doing little to change classroom practices or the prevailing culture of teacher isolation. Teacher isolation and episodic professional development prevent the collaboration and shared learning essential to improving student achievement. Meaningful collaboration in teacher communities can help to advance equitable educational outcomes for all students (Dufour & Marzano, 2011; V. E. Lee & Smith, J. B., 1995, 1996; V. E. Lee et al., 1997). Most current professional development focuses on bringing best practices from experts outside of the school to the teachers within it, resulting in teacher learning experiences that lack relevance. PLCs, however, assume that best practices reside within the collective knowledge of the members of a school community and can be uncovered through collective work (Lieberman & Miller, 2008).

The complex problems that educators face and the changes that schools need to embrace can only be successfully navigated with collaborative efforts (Bray, 2000; Lieberman & Miller, 2008; McLaughlin & Talbert, 2006). Schools can only enact necessary improvements and changes if they focus on strengthening relationships and building a collective sense of self-

efficacy (DuFour et al., 2008). PLCs provide an astute framework for supporting school-wide improvement efforts, not only because they support reform efforts, but also because they can play a central role in dramatically improving the overall performance of schools (DuFour et al., 2008; DuFour & Fullan, 2013; Hall & Hord, 2006). There is no single formula for successful adoption of the CCSS or for closing the achievement gap. But focused Collaborative Inquiry in a PLC can support schools in the intensive collaborative work necessary to tackle these challenges (Bray, 2000; DuFour et al., 2008; DuFour & Fullan, 2013; Dufour & Marzano, 2011; Lieberman & Miller, 2008; McLaughlin & Talbert, 2006).

More is known about the benefits of PLCs and Collaborative Inquiry than how to start and sustain them (McLaughlin & Talbert, 2006). The purpose of this mixed-methods case study was to investigate teacher perceptions of Collaborative Inquiry embedded in a PLC during departmental collaboration time and to explore the elements deemed most important to creating and/or maintaining this collaboration model at Lennox Charter High School, a small urban charter high school. The researcher sought to better understand the elements deemed most important for Lennox Charter High School to create and/or maintain Collaborative Inquiry embedded in a Professional Learning Community during departmental collaboration in order to design meaningful learning experiences for teachers. The researcher endeavored to design meaningful teacher learning in order to render school site professional development more impactful, bolster teaching practice, and support equitable student achievement.

Research Questions

The research questions for this study centered on exploring teacher perceptions of the nature of professional collaboration during departmental time and the elements deemed most

important for creating and maintaining Collaborative Inquiry at Lennox Charter High School. The purpose of these questions was to evaluate the data and align them to the themes of PLCs and characteristics of Collaborative Inquiry in a PLC. The following research questions were addressed:

- What are teachers' perceptions of Collaborative Inquiry embedded in a Professional Learning Community during departmental collaboration time at Lennox Charter High School?
- What are the elements deemed most important for Lennox Charter High School to create and/or maintain Collaborative Inquiry embedded in a Professional Learning Community during departmental collaboration?

Research Process

This study used a mixed-methods case study approach to answering the research questions and uncovering the elements deemed most important in creating and maintaining Collaborative Inquiry in a Professional Learning Community. The study analyzed four data sources: survey results, transcripts from two focus group meetings, transcripts from four one-on-one interviews, and observation data from six departmental collaboration meetings. The focus groups, interviews, and observations were conducted over a three-month period.

The Collaborative Inquiry Continuum Survey was administered during a summer professional development meeting on August 6. It was distributed to all teachers and counselors except for the six new to the school, as they had been a part of the school staff for less than one week and did not have the context to answer the survey questions. Out of 24 staff members who were given the survey, 20 elected to complete it. The participants' years of experience in

education ranged from one to 18. Their years working at Lennox Charter High School ranged from one to 15. Survey results could not be disaggregated by demographic data since the survey was anonymous.

In order to analyze the survey data, the researcher looked at individual questions on the survey and identified trends in ratings and comments. The researcher then considered the survey questions by the five themes of the survey: collaborative, reflective, learning stance, process driven by practice and actions informed by evidence, and looked for trends in each theme. Focus group questions were crafted to follow up on trends and to gather information on questions that were outliers in that they received very high or very low ratings. After completing the survey, the teachers completed a form indicating whether they would be interested in participating in a focus group or interview and, if so, when they would prefer to participate (after school, during lunch, or during their free period). All teachers who indicated interest were invited to participate in a focus group.

There were two focus groups. The first was held for 30 minutes during lunch with four participants, all of who were female. There was one teacher in the apprentice phase of her teaching career, two teachers in the professional phase, and one expert teacher. Three participants were members of the English Department and one was a member of the Special Education Department. The second focus group was held for 40 minutes after school with four participants, three of who were male. One was female. One participant was in the apprentice phase of her career, two were in the professional stage, and one in the distinguished phase of his career. Two participants were members of the Science Department and two participants were members of the History Department. In each focus group, the researcher posed iterations of the

research questions, posed questions based on outliers in the survey data and, for each outlier, explained the trend in continuum ratings as well as the trend in comments before asking for input from participants. The researcher analyzed the focus group transcripts to determine themes and crafted interview questions based on these themes.

Out of the teachers who expressed interest in participating in a one-on-one interview, the researcher selected four teachers, one from each stage of the lifecycle of a career teacher: apprentice, professional, expert and distinguished. These participants were members of the Special Education, Spanish, English and History Departments, respectively. Participants were interviewed using a semistructured interview protocol. They were asked iterations of the research questions as well as questions related to the four themes that emerged from the focus groups: relationships, time, follow-through, and narrow focus.

Observations were conducted to triangulate the data collected from the survey, focus groups and interviews. These observations occurred during departmental collaboration between 7:20 and 8:20 a.m. on September 4, October 2, and November 6. The observations lasted between 15 and 30 minutes. The researcher used the Collaborative Inquiry Observation Tool during these observations to collect field notes and rate departmental collaboration on the same continuum that participants used to complete the survey. Teacher words and actions were scripted and used as evidence to justify each rating on the continuum. The researcher observed a math, college readiness, Spanish, English, history and science department collaboration meeting.

The data were then triangulated, analyzed, and compared to the PLC themes of commitments, capacity and balancing content and process as well as the components of Collaborative Inquiry and Professional Learning Communities.

Organization of Chapter Four

In Chapter Four, the data gathered through the research process is presented by data collection method. The answers to the research questions posed by this study will be given and discussed in Chapter Five.

Summary of Key Findings

Surveys

Out of 24 staff members who were given the survey, 20 elected to complete it. The participants' years of experience in education ranged from one to 18. Their years working at Lennox Charter High School ranged from one to 15. Because the survey was anonymous, data were not analyzed according to demographics. Additionally, career phase data could not be analyzed as career phase depends on competency and contribution to the school community as well as years of experience, and those characteristics could not be gauged in an anonymous survey. Table 3 depicts the years of experience of survey participants.

Table 3

<i>Survey Participant Years of Experience</i>	Number of Years				
	1–2	3–5	6–10	11–16	16+
For how many years have you worked in education?	2	6	7	4	1
For how many years have you worked at this school?	2	6	7	4	1

The survey asked participants to rate school-wide collaborative practice on a continuum that denoted four levels: beginning, emerging, applying, or innovating. The survey contained five themes: *collaborative*, *reflective*, *learning stance*, *process driven by practice*, and *actions informed by evidence*. There were four questions pertaining to each theme. Continuum ratings

were rated relatively highly. For 15 of the 20 questions, at least 75% of participants ranked the school as applying or innovating. The survey directed participants to consider each statement and select a place on the continuum that they believed best represents the collaborative work they conducted with their department members during collaboration time and professional development. Table 4 shows survey responses for questions related to the theme of collaborative.

Table 4

Descriptive Statistics for Survey Responses: Theme of Collaborative

Question	Median	Mode	Mean	Standard deviation
1. Norms that enable effective communication are in place.	3	3	3.275	.550
2. When meeting as a learning team, our work together is owned by every member of the team.	3	3	2.975	.472
3. Decision making authority is dispersed among individuals.	3	3	2.675	.654
4. Diversity of opinion is promoted and evident in our joint work.	3	3	3.025	.769

Note. Each statement was rated on a four-point scale: 1 = Beginning, 2 = Emerging, 3 = Applying, 4 = Innovating

The mean score for question one was a 3.275 ($SD = .550$), indicating that the majority of participants scored this statement between a three and a four on a four-point scale. Most respondents ranked collaboration as “applying” on this statement. The mean score for question two was 2.975 ($SD = .472$), indicating that the majority of respondents scored between a 2.5 and a 3.5 on a 4-point scale. Fifteen of the 20 respondents ranked collaboration as “applying” on this statement. The mean score for question three was a 2.675 ($SD = .654$), indicating that the

majority of respondents ranked this statement between a two and a three on a four-point scale. This statement received the lowest ratings of any on the survey. Eight respondents ranked this statement as “developing,” while nine ranked it as “applying.” The mean score for question four was a 3.025 ($SD = .769$), indicating that the rankings for this statement were variable. Five participants ranked the statement as “developing,” eight ranked it as “applying,” and nine as “innovating.” Table 5 shows survey responses for questions related to the theme of reflective.

Table 5

Descriptive Statistics for Survey Responses: Theme of Reflective

Question	Median	Mode	Mean	Standard deviation
5. Routines that encourage and enable individuals to consider and reflect on solutions to their problems of practice are in place	3	3	3.050	.686
6. Group members consistently use data to self-assess and reflect.	3	3	3.400	.598
7. Team members are experimenting with new teaching ideas in the classroom and reflecting on how well they are working	3	3	3.200	.677
8. Thinking is more intentional and explicit based on reflection.	3	3	3.237	.586

Note. Each statement was rated on a 4-point scale: 1 = Beginning, 2 = Emerging, 3 = Applying, 4 = Innovating

The mean score for question five was a 3.050 ($SD = .686$), indicating that the majority of participants scored this statement between a 2.5 and a 3.5 on a 4-point scale, although the ratings were variable. Most respondents ranked collaboration as “applying” on this statement. The mean score for question six was 3.400 ($SD = .598$), indicating that the majority of respondents

scored collaboration between a three and a four on a 4-point scale. Ten respondents ranked collaboration as “applying” on this statement, and nine ranked it as “innovating.” This statement had the second highest mean score on the survey. The mean score for question seven was a 3.200 ($SD = .677$), indicating that the responses were variable. Nine respondents ranked this statement as “applying,” while seven ranked it as “innovating.” The mean score for question eight was a 3.237 ($SD = .586$), indicating that the majority of participants ranked this statement between a 2.75 and a 3.75. Eleven participants ranked the statement as “applying,” and eight as “innovating.” Table 6 shows survey responses for questions related to the theme of learning stance.

Table 6

Descriptive Statistics for Survey Response: Theme of Learning Stance

Question	Median	Mode	Mean	Standard deviation
9. Team members not only promote but fully participate in each stage of the Collaborative Inquiry cycle.	3	3	2.725	.617
10. Our time together is focused on student learning, professional learning, teaching practice, and/or leading.	3.5	3	3.500	.513
11. Team members are open to new ideas and actively seek new information from relevant sources to help inform next steps.	3	3	2.900	.700
12. Team members find value in the process.	3	3	2.842	.579

Note. Each statement was rated on a 4-point scale: 1 = Beginning, 2 = Emerging, 3 = Applying, 4 = Innovating

The mean score for question nine was 2.725 ($SD = .617$), indicating that the majority of participants scored this statement between a two and a three on a 4-point scale, although the ratings were variable. Most respondents ranked collaboration as “applying” on this statement, although six respondents ranked this statement as “emerging.” This question had the third lowest mean score of any on the survey. The mean score for question 10 was 3.500 ($SD = .513$), indicating that the majority of respondents scored collaboration between a three and a four on a 4-point scale. Ten respondents ranked collaboration as “applying” on this statement, and 10 ranked it as “innovating.” This statement had the highest mean score of any on the survey. The mean score for question 11 was a 2.900 ($SD = .700$), indicating that the responses were variable. Nine respondents ranked this statement as “applying,” while seven ranked it as “emerging.” The mean score for question 12 was a 2.842 ($SD = .579$), indicating that the majority of participants ranked this statement between a two and a three. Eleven participants ranked the statement as “applying,” and six as “emerging.” Table 7 shows survey responses for questions related to the theme of process driven by practice.

Table 7

Descriptive Statistics for Survey Responses: Process Driven by Practice

Questions	Median	Mode	Mean	Standard deviation
13. Our work involves examining our own and each other's practice.	3	3	2.975	.617
14. We use practice to discover strategies that work.	3	3	3.200	.523
15. We draw on outside ideas in relation to how they relate to our situation.	3	3	2.950	.583
16. Work is connected to and impacting the work of the professional learning community and wider school improvement efforts.	3	3	3.125	.510

Note. Each statement was rated on a 4-point scale: 1 = Beginning, 2 = Emerging, 3 = Applying, 4 = Innovating

The mean score for question 13 was a 2.975 ($SD = .617$), indicating that the majority of participants scored this statement between a 2.5 and a 3.5 on a 4-point scale. Most respondents ranked collaboration as “applying” on this statement. The mean score for question 14 was 3.200 ($SD = .523$), indicating that the majority of respondents scored collaboration between a 2.75 and a 3.75 on a 4-point scale. Fourteen respondents ranked collaboration as “applying” on this statement and four ranked it as “innovating.” The mean score for question 15 was a 2.950 ($SD = .583$), indicating that the majority of participants rated this statement between a 2.5 and a 3.5 on a 4-point scale. Twelve respondents ranked this statement as “applying,” while three ranked it as “innovating.” The mean score for question 16 was a 3.125 ($SD = .510$), indicating that the majority of participants ranked this statement between a 2.5 and a 3.5 on a 4-point scale. Fourteen participants ranked the statement as “applying,” and four as “innovating.” Table 8 shows survey responses for questions related to the theme of actions informed by data.

Table 8

Descriptive Statistics for Survey Responses: Actions Informed by Data

Questions	Median	Mode	Mean	Standard deviation
17. Analysis of relevant and current data is deemed important and is an ongoing priority for the team.	3	3	3.200	.616
18. The team considers teaching practices (in light of student data) and determines approaches that are successful and those that need to be changed	3	3	3.000	.562
19. The team considers multiple sources of evidence to gain a well-rounded picture of their inquiry.	3	3	2.722	.548
20. Current student learning data is collaboratively examined and provides a basis for considering next steps for the team's inquiry.	3	3	3.075	.520

Note. Each statement was rated on a four-point scale: 1 = Beginning, 2 = Emerging, 3 = Applying, 4 = Innovating

The mean score for question 17 was a 3.200 ($SD = .616$), indicating that the majority of participants scored this statement between a 2.5 and a 3.5 on a 4-point scale. Most respondents ranked collaboration as “applying” on this statement. The mean score for question 18 was 3.000 ($SD = .562$), indicating that the majority of respondents scored collaboration between a 2.5 and a 3.5 on a 4-point scale. Fourteen respondents ranked collaboration as “applying” on this statement, and three ranked it as “innovating.” The mean score for question 19 was a 2.722 ($SD = .548$), indicating that the majority of participants rated this statement between a 2 and a 3 on a 4-point scale. This was the second lowest rated statement on the survey. Ten respondents ranked this statement as “applying,” while seven ranked it as “emerging.” The mean score for question 20 was a 3.075 ($SD = .520$), indicating that the majority of participants ranked this

statement between a 2.5 and a 3.5 on a 4-point scale. Fourteen participants ranked the statement as “applying,” and three ranked it as “innovating.”

The mean scores for the statements linked to the theme of collaborative were the highest. The mean scores for questions linked to the theme of process driven by practice were also high. The mean scores were variable for the themes of reflective and actions driven by data. Mean scores for questions linked to the theme of learning stance received the lowest ratings. Many of the written comments noted that teachers at Lennox Charter High School employed the themes of the survey for the most part, or that most team members employed the themes. Focus group questions were crafted based on trends in the survey data as well as outliers (questions that received significantly higher or lower ratings).

Focus Groups

Questions were posed to both focus groups based on the research questions, overall trends in the survey data, and statements from the survey that received significantly higher or lower ratings. The questions that were posed related to the research questions were:

- Do you see Collaborative Inquiry embedded in a Professional Learning Community in department collaboration and/or professional development?
- What elements (strategies, systems, conditions) are most important for our school to create and/or maintain Collaborative Inquiry embedded in a Professional Learning Community during departmental collaboration and/or professional development?

Questions that were posed related to overall trends in the survey data were:

- The survey contained five characteristics: *collaborative*, *reflective*, *learning stance*, *process driven by practice* and *actions informed by data*. As a school, we rated

collaborative the highest. *Process driven by practice* was also rated highly. Ratings were mixed for *reflective* and *actions informed by data*. *Learning stance* received the lowest ratings. What are your thoughts about these survey trends?

Questions that were posed related to statements from the survey that received significantly higher or lower ratings were:

- Where do you perceive decision-making authority in your department collaboration?
- In what ways do you see group members use data to self-assess and reflect?
- Do you see team members promoting and fully participating in Collaborative Inquiry? If not, what do you think holds them back?
- In your department, how do you use practice to discover strategies that work?
- What kinds of evidence does your team use during collaboration?

In the first focus group, participants concluded that, to an extent, Collaborative Inquiry within a PLC was present in departmental collaboration time at Lennox Charter High School. In the second focus group, participants observed that Collaborative Inquiry was present to a “great” or “high” degree. In both focus groups, participants mentioned that “business items” and district-mandated priorities distract from Collaborative Inquiry in department collaboration meetings. A participant from the first focus group noted:

I think sometimes our department time is taken up with business; knowing the testing calendar or looking at updates or just giving information. Then other times I feel like we really do work together to review I guess, strategies and assessments and rubrics we use and refine and make them better.

In both focus groups, participants gave the following as examples of Collaborative Inquiry happening within a PLC during departmental collaboration time: the video analysis protocol, the student work analysis protocol, Aztec Literacy Guide, and vertical alignment within the English, History, and Math Departments. The video analysis protocol was a protocol developed by the Instructional Leadership Team (ILT) at Lennox Charter High School in which a department member showed his or her department a video of his or her teaching and then department members took notes, discussed issues with each other, and provided specific feedback and recommended next steps for teaching practice. Similarly, the student work analysis protocol was developed by the ILT as a protocol to assist departments in systematically looking at student work, discussing the results, and determining recommended next steps for teaching practice. The Aztec Literacy Guide was a handbook created by the English Department that outlined the common literacy strategies that English teachers used and taught so that teachers in other departments could use them as well. Vertical alignment referred to when a team determined *what* skills and content would be taught in a given subject at each grade level as well as *how* these skills would be taught.

In both focus groups, participants noted several ways to maintain Collaborative Inquiry during departmental collaboration time. In participant explanations of how to maintain Collaborative Inquiry and participant answers to survey-related questions, several themes emerged. These included: choosing one priority or goal, dedicating time for implementation and follow-through, willingness to participate, and relationships.

In both focus groups, participants agreed on the importance of choosing limited priorities or goals, working on it over time, and focusing on implementation and follow-through. Below are participant comments on that subject:

We need to do one specific thing and then make sure we're tracking it, so that it's not just another thing we never followed through on.

We want less of all the different strategies and just kind of focus on what is our bread and butter as a department and how are we going to work toward that.

I think it's good that we have the time and we have the systems in place, but I think, are we really carrying those things out to fruition or are we just having them imbedded in our schedule?

Participants noted the usefulness both of having time to create assignments, strategies, and instructional plans together as well as to follow through on those plans.

Focus group participants also noted that participants needed to be willing to engage in departmental collaboration work in order for Collaboration Inquiry in a PLC to occur. If some teachers would not share what was happening in their classes then the department was unable to collaborate. One participant noted that department members can develop willingness to collaborate over time:

It's the willingness and sometimes it takes some time to develop that willingness to apply or try to find value in it, after a while it feels like – you work with a group of people and align and you know that some good things are going to come out of that.

The importance of relationships was also highlighted by focus group participants. Again, the idea that relationships can develop over time and lead to strong collaborative work was asserted:

I think a lot of it depends on the continuity of the team too. The longer you work together the more comfortable you feel and the more you feel like helping each other and developing things together and collaborating.

Several participants noted that, over time, department members often became more willing to share struggles and ask colleagues for help.

Interviews

Table 9 outlines the themes that arose from each focus group and interview.

Table 9

Themes from Focus Groups and Interviews

Themes	Focus Group 1	Focus Group 2	Interview 1	Interview 2	Interview 3	Interview 4
Limiting Goals	X	X	X	X	X	X
Time for follow-through	X	X	X	X	X	X
Participant willingness	X	X	X	X	X	X
Importance of relationships	X	X	X	X	X	
Structure and autonomy	X	X	X	X	X	X

The following questions were posed during each of the four interviews:

- How do you define collaboration?

- Consider the definitions of Collaborative Inquiry and Professional Learning Community. Do you see Collaborative Inquiry embedded in a Professional Learning Community in department collaboration time and/or professional development?
- What elements (strategies, systems, conditions) are most important for our school to create and/or maintain Collaborative Inquiry embedded in a Professional Learning Community during departmental collaboration?
- How do relationships affect collaborative work?
- How should departments spend their limited collaboration time? Balance “business” with collaboration? Prioritize agenda items?
- Focus groups identified that more follow through could make collaboration more effective. In what ways could we focus on the “follow-through” of collaboration time in order to make it more meaningful?
- Focus groups noted that limiting the focus of collaboration time could make it more effective. How could we limit the scope of departmental collaboration time? What should we prioritize and deprioritize?

Interviewees were asked to define collaboration and whether they observed Collaborative Inquiry within a PLC to be present during departmental collaboration time. The interviews also explored themes that arose from the focus groups, namely: choosing limited goals, dedicating time for implementation and follow-through, participant willingness to engage in collaboration, and relationships. An additional theme that arose during the interviews was the necessity of balancing structure and autonomy during departmental collaboration. One teacher was

interviewed from each of four phases of career teaching: apprentice, professional, expert, and distinguished.

Interviewees defined collaboration as working together and creating something together. All participants besides the apprentice stated that collaboration means knowing what is happening in the classrooms of your department members and examining teaching practice. The distinguished teacher added that collaboration should entail tracking progress toward shared goals. The expert teacher asserted that reflection should be an aspect of examining classroom practice. The professional and apprentice teachers said that they did have Collaborative Inquiry in a PLC in their departments, whereas the expert and distinguished teachers said that Collaborative Inquiry within a PLC was present, to an extent, in their department meetings. The expert noted that logistics were sometimes covered during department collaboration, which was why Collaborative Inquiry was not always occurring. The distinguished teacher explained that the follow-through aspect of Collaborative Inquiry was not present in department meetings and that outside factors such as district initiatives sometimes distracted from collaboration. The next section will explore the overarching themes that emerged from the interviews.

Limiting goals. All interviewees identified limiting the goals of departmental collaboration time as an important aspect of maintaining Collaborative Inquiry within a PLC. Participants recommended that departments come together to set goals and agree on a purpose for collaboration time and recommended that departments focus on one or two goals for each school year.

The professional interviewee identified a lack of clear goals for department work as the main aspect holding Lennox Charter High School back from full implementation of

Collaborative Inquiry in a PLC: “I don’t know how clear we are about our action steps – what are we really accomplishing by the end of the unit or year?” Similarly, the distinguished interviewee noted that too many competing priorities weakened the ability of his department to engage in data-based inquiry:

It’s all about the priorities. . . . we’re all pulled in so many different ways so it’s sometimes tough to really actually look at the data and assess the impact of our actions because we don’t really have time to think about it.

In contrast, the expert interviewee identified establishing a clear goal as a crucial element of successful implementation of Collaborative Inquiry in a PLC in her department:

I really do like having goals as a department . . . targeting areas of instruction that we are weak in and can improve in . . . you can really only focus on one or two things a year, you can’t focus on everything.

Interviewees all noted Collaborative Inquiry within a PLC occurring to some extent and narrowing priorities as an important aspect of maintaining or strengthening the quality of collaboration.

Time for follow-through. All interviewees also described that allotting time for following through on the topics of professional collaboration and professional development is an important aspect of creating and sustaining Collaborative Inquiry within a PLC. The apprentice interviewee noted that having time to share and discuss lesson materials set the stage for high quality collaboration: “Having the time and space to give feedback and share materials is what helped us to [collaborate].” Conversely, the professional interviewee noted the lack of follow-up as a weakness in his department’s collaboration:

More follow up is needed, more consistent communication to see if the things that we're practicing are actually happening in the classroom outside of major test scores and things like that that we can look up pretty easily.

The distinguished teacher expressed a similar sentiment: "I feel that what's missing sometimes is that ability to really take the time to sit down and really look at whatever data it is that we're using to make these conclusions." The theme of allowing time to address follow-through emerged as a consistent theme in participant responses.

Participant willingness and openness. All interviewees commented that participant willingness and openness was an essential ingredient to improving and maintaining Collaborative Inquiry within a PLC. The expert and professional teachers noted that veteran teachers are often most reticent to collaborate and can stop growing/engaging. The expert teacher stated: "Some older teachers can get kind of stuck and how you reopen that I don't know." She explained that she had observed teachers with more than 10 years of experience being less willing to collaborate than teachers with less than 10 years of experience. The professional interviewee commented on the challenge of getting teachers to develop willingness to collaborate:

A culture has to be established as far as the way people understand professional development improving their practice . . . it's kind of hard to open that up and make people vulnerable and want to change things.

Both the apprentice and the expert interviewees noted that, when one teacher asked another for help, this could make the other person more receptive to collaboration and likely to reciprocate.

The apprentice interviewee noted:

When we have more time in the department to kind of show what we have been doing and share our expertise, then more teachers were more receptive, there was more of a trade going when we can all bring something.

Importance of relationships. All interviewees, with the exception of the distinguished educator, commented on the importance of relationships to collaborative work. Interviewees described the importance of getting to know others in authentic ways, and the expert and apprentice underscored the importance of understanding communication styles to building relationships.

The professional interviewee noted that relationships can affect collaboration in a positive or negative way, explaining that they can bolster collaborative efforts but also inhibit growth and reinforce the status quo: “I think it can obviously be a great benefit and also a hindrance to people who almost use it as a crutch . . . people will sometimes be overly protective or not genuine in their feedback.” The apprentice interviewee spoke about how relationship building takes time but that it brings meaning and commitment to collaborative work:

I want to say relationship is a big part of collaborative work. It’s kind of like that buy-in piece . . . first I have to get to know who you are and do other stuff that has to do with bonding before I can just jump in and start. When we have time to give each other feedback, it builds trust.

The expert interviewee also commented on the importance of relationship building occurring before meaningful collaboration can take place:

Having authentic ways to get to know each other is a big aspect of it . . . I think it's like classroom management . . . starting with the interpersonal stuff and then getting down to the content you want to target.

Structure versus autonomy. The final theme that emerged during the interviews was the idea of having structure and autonomy in collaborative work. All interviewees spoke to this theme. All interviewees agreed that department members need choice and autonomy for collaborative work to be effective. The professional interviewee noted that a more defined structure could make Collaborative Inquiry at Lennox Charter High School more effective, but also noted the importance of finding a balance between freedom and structure:

It'd be interesting to see if there was a streamlined approach that would be more effective but then there is always that pushback . . . it's just really hard to find the balance between giving people or groups of people a set of how things can be done and giving them freedom to explore things their own way.

The distinguished interviewee commented that department foci should not come from the district but should arise organically from department work. The apprentice interviewee commented that too much structure can make collaboration less effective, noting that collaborative work cannot be forced and should be framed as an opportunity for supporting and benefiting teachers:

I think trust is really helpful and having the space to give feedback and give each other that support that's a little less structured really opened up a lot of gateways. I feel like you get more out of people to do more work if they're not forced to do it.

Observations

The researcher conducted an observation of departmental collaboration for each of the six departments at Lennox Charter High School: College Readiness, English, Mathematics, Science, Social Science, and Spanish. The researcher used the Collaborative Inquiry Observation Tool to conduct the observations. This tool used the same measurement and the same 20 statements as the Collaborative Inquiry Survey that participants completed. For each of 20 statements on the Collaborative Inquiry Observation Tool, the observer scripted evidence of teacher words and actions to justify a rating of beginning, developing, applying, or innovating. Table 10 shows observation scores for statements related to the theme of collaborative.

Table 10

Descriptive Statistics for Observation Data – Theme of Collaborative

Question	Mean	Median	Mode	Standard deviation
1. Norms that enable effective communication are in place.	2.833	3.00	3	0.408
2. When meeting as a learning team, our work together is owned by every member of the team	2.583	2.75	3	0.492
3. Decision making authority is dispersed among individuals.	2.667	3.00	3	0.817
4. Diversity of opinion is promoted and evident in our joint work.	2.333	2.00	2	0.516

Note. Each statement was rated on a 4-point scale: 1 = Beginning, 2 = Emerging, 3 = Applying, 4 = Innovating

The mean score for question one was 2.833 ($SD = .408$), indicating that most departments were rated between a 2.5 and a 3.5 on a 4-point scale. Five departments were rated “applying,” and one was rated as “emerging.” The mean score for question two was 2.583 ($SD = .492$), indicating that most departments were ranked between a 2 and a 3 on a 4-point scale. Two departments were ranked as “emerging,” one as “emerging/applying,” and three as applying. The mean score for question three was 2.667 ($SD = .817$), indicating that the responses were variable. One department was ranked as “beginning,” while five departments were ranked as “applying.” The mean score for question four was 2.33 ($SD = .516$), indicating that most departments were rated between a 2 and a 3 on a 4-point scale. Four departments were ranked as “emerging” and two as “applying.”

In almost all departments, effective communication was evident. No disrespectful or subversive communication was observed. In most departments, the majority of group members “owned” the work and actively participated in discussion and decision making. Diversity of opinion was not always evident. In the social science, ELA, and math departments, the researcher observed decisions about rubrics, assessments, and supports for students in special education being made collaboratively. Disagreement was not observed. Rather, participants posed questions and came to conclusions as a group. Table 11 shows observation scores for statements related to the theme of reflective.

Table 11

Descriptive Statistics for Observation Data: Theme of Reflective

Question	Mean	Median	Mode	Standard deviation
5. Routines that encourage and enable individuals to consider and reflect on solutions to their problems of practice are in place.	2.667	3	3	0.516
6. Group members consistently use data to self-assess and reflect.	1.500	1	1	0.837
7. Team members are experimenting with new teaching ideas in the classroom and reflecting on how well they are working	2.833	3	3	0.408
8. Thinking is more intentional and explicit based on reflection.	2.333	2.5	3	0.817

Note. Each statement was rated on a 4-point scale: 1 = Beginning, 2 = Emerging, 3 = Applying, 4 = Innovating

The mean score for question five was 2.667 ($SD = .516$), indicating that the majority of departments were scored between a 2 and a 3 on a 4-point scale. Two departments were rated as “emerging,” and four as “applying” for this statement. The mean score for question six was 1.5 ($SD = .837$), indicating that scores were variable. Four departments were rated as “beginning,” one was rated as “emerging,” and one as “applying.” This statement received the second lowest ratings of any on the observation tool. The mean score for question seven was 2.833 ($SD = .408$), indicating that most departments were rated as “applying.” All but one department was rated as “applying” on this statement. This statement had one of the highest mean observation scores of any on the observation tool. The mean score for question eight was 2.333 ($SD = .817$), indicating that ratings were variable. One department was rated as “beginning,” two as “emerging,” and three as “applying” on this statement.

The only department that used data to self-assess and reflect was the English Department, as it discussed student performance on a district benchmark exam from previous years. However, evidence of reflection was consistently present in all but one of the observations. There was evidence that departments were considering solutions to problems of practice and experimenting with new ideas in the classroom. For example, the Social Science Department discussed implementing a new rubric for argumentative writing more closely aligned with Common Core Standards and the College Readiness Department developed a survey instrument to measure student perceptions of college. Table 12 shows observation scores for statements related to the theme of learning stance.

Table 12

Descriptive Statistics for Observation Data: Theme of Learning Stance

Questions	Mean	Median	Mode	Standard deviation
9. Team members not only promote but fully participate in each stage of the Collaborative Inquiry cycle.	2.167	2	2	0.753
10. Our time together is focused on student learning, professional learning, teaching practice, and/or leading.	3.167	3	3	0.408
11. Team members are open to new ideas and actively seek new information from relevant sources to help inform next steps.	2.917	3	3	0.204
12. Team members find value in the process.	3.000	3	3	0.633

Note. Each statement was rated on a 4-point scale: 1 = Beginning, 2 = Emerging, 3 = Applying, 4 = Innovating

The mean score for question nine was 2.167 ($SD = .753$), indicating that responses were variable. One department was rated as “beginning,” three were rated as “emerging,” and two were rated as “applying.” This score was one of the lower mean scores of all statements on the observation tool. The mean score for question 10 was 3.167 ($SD = .408$), indicating that most departments were rating as “applying.” Five departments were rated as “applying,” and one as “innovating.” This statement had the highest mean observation score of any on the observation tool. The mean score for question 11 was 2.917 ($SD = .204$), indicating that most departments (all but one) were rated as “applying.” This statement had one of the highest mean observation scores. The mean score for question 12 was 3 ($SD = .633$). One department was rated as “emerging,” one as “innovating,” and four as “applying.” Question 12 had the second highest mean observation score of any on the survey.

While the researcher observed strong participation in departmental collaboration meetings, in most departments, not every member of the department fully participated. Department meetings remained focused on teaching and learning and almost no off-topic conversations were observed. Department members did not always seek new information to inform action steps, although the Math and College Readiness Departments scheduled participation in professional conferences. In general, the level of participation in collaboration (most department members participated in all conversations) indicated that team members found value in the process. For example, a member of the Spanish Department told her department chair, “That really helps, thank you,” after he explained how he grades student participation in class. Table 13 shows observation scores for statements related to the theme of process driven by practice.

Table 13

Descriptive Statistics for Observation Data: Process Driven by Practice

Questions	Mean	Median	Mode	Standard deviation
13. Our work involves examining our own and each other's practice.	2.500	2.50	2	0.548
14. We use practice to discover strategies that work	2.583	2.75	3	0.492
15. We draw on outside ideas in relation to how they relate to our situation.	2.333	2.50	3	0.817
16. Work is connected to and impacting the work of the professional learning community and wider school improvement efforts.	2.333	2.00	2	1.033

Note. Each statement was rated on a 4-point scale: 1 = Beginning, 2 = Emerging, 3 = Applying, 4 = Innovating

The mean score for question 13 was 2.5 ($SD = .548$), indicating that most departments were rated between a 2 and a 3. Three departments were ranked as “emerging,” and three as “applying.” The mean score was question 14 was 2.583 ($SD = .492$), indicating that most departments were rated between a 2 and a 3 for this statement, as well. The mean score for question 15 was 2.333 ($SD = .817$), indicating that scores were variable. One department was ranked as “beginning,” two were ranked as “emerging,” and three were ranked as “applying.” The mean score for question 16 was 2.333 ($SD = 1.033$), indicating that scores were variable. One department was rated as “beginning,” three as “emerging,” one as “applying,” and one as “innovating.”

There was strong evidence that most departments were examining teaching practice and discovering effective strategies. In the Spanish, English, Social Science, and Mathematics Departments, teachers engaged in the examination of teaching practice by posing numerous

questions to each other. The amount that departments connected their work to wider school improvements was variable. For example, the Science Department focused most of its meeting on science safety while the English Department codified an annotation strategy for students throughout the school to use. Table 14 shows observation scores for statements related to the theme of actions informed by evidence.

Table 14

Descriptive Statistics for Observation Data: Actions Informed by Evidence

Question	Mean	Median	Mode	Standard deviation
17. Analysis of relevant and current data is deemed important and is an ongoing priority for the team.	1.500	1	1	0.837
18. The team considers teaching practices (in light of student data) and determines approaches that are successful and those that need to be changed.	2.167	2	2	0.753
19. The team considers multiple sources of evidence to gain a well-rounded picture of their inquiry.	1.333	1	1	0.516
20. Current student learning data is collaboratively examined and provides a basis for considering next steps for the team's inquiry.	1.500	1	1	0.837

Note. Each statement was rated on a 4-point scale: 1 = Beginning, 2 = Emerging, 3 = Applying, 4 = Innovating

The mean observation scores for the statements in this section of the survey were the lowest of any of the five sections. The mean score for question 17 was 1.5 ($SD = .837$), indicating that scores were variable. Four departments were rated as “beginning,” one as “emerging,” and one as “applying.” The mean score for question 18 was 2.167 ($SD = .753$),

indicating that scores were variable. One department was rated as “beginning,” three were rated as “emerging,” and two as “applying.” The mean score for question 19 was 1.333 ($SD = .516$), indicating that most departments were rated between a 1 and a 2 on the 4-point scale. Four departments were rated as “beginning,” and two as “emerging.” This statement received the lowest mean observation score of any on the observation tool. The mean score for question 20 was 1.5 ($SD = .837$), indicating that responses were variable. Four departments were rated as “beginning,” one as “emerging,” and one as “applying.”

There was minimal evidence of departments using evidence and data to inform their actions. During the observations, the Spanish Department carefully examined grade data pertaining to student participation, and the English Department discussed data pertaining to student reading levels but there was not evidence of data analysis in other departments.

Overall, statements related to the theme of learning stance were rated highly; statements related to the theme of collaborative were rated relatively highly. Ratings for reflective and process driven by practice were mixed. Statements related to the theme of actions informed by evidence were rated the lowest. Table 15 compares mean survey data to mean observation data for each statement on the survey.

Table 15

Mean Survey Data Compared to Mean Observation Data

Type of question	Mean survey score	Mean observation score	Difference
Collaborative			
1. Norms that enable effective communication are in place.	3.275	2.833	0.442
2. When meeting as a learning team, our work together is owned by every member of the team.	2.975	2.583	0.392
3. Decision making authority is dispersed among individuals.	2.675	2.667	0.008
4. Diversity of opinion is promoted and evident in our joint work.	3.025	2.333	0.692
Reflective			
5. Routines that encourage and enable individuals to consider and reflect on solutions to their problems of practice are in place.	3.05	2.667	0.383
6. Group members consistently use data to self-assess and reflect.	3.40	1.500	1.900
7. Team members are experimenting with new teaching ideas in the classroom and reflecting on how well they are working	3.20	2.833	0.367
8. Thinking is more intentional and explicit based on reflection.	3.23	2.333	0.904
Learning Stance			
9. Team members not only promote but fully participate in each stage of the Collaborative Inquiry cycle.	2.725	2.167	0.558
10. Our time together is focused on student learning, professional learning, teaching practice, and/or leading.	3.500	3.167	0.333
11. Team members are open to new ideas and actively seek new information from relevant sources to help inform next steps.	2.900	2.970	0.170
12. Team members find value in the process.	2.842	3.000	0.158

Table 15

Mean Survey Data compared to Mean Observation Data (Continued)

Type of question	Mean survey score	Mean observation score	Difference
Process Driven Practice			
13. Our work involves examining our own and each other's practice.	2.975	2.500	0.475
14. We use practice to discover strategies that work.	3.200	2.583	0.617
15. We draw on outside ideas in relation to how they relate to our situation.	2.950	2.333	0.617
16. Work is connected to and impacting the work of the professional learning community and wider	3.125	2.333	0.792
Action Informed by Evidence			
17. Analysis of relevant and current data is deemed important and is an ongoing priority for the team.	3.200	1.500	1.700
18. The team considers teaching practices (in light of student data) and determines approaches that are successful and those that need to be changed.	3.000	2.167	0.833
19. The team considers multiple sources of evidence to gain a well-rounded picture of their inquiry.	2.722	1.333	1.389
20. Current student learning data is collaboratively examined and provides a basis for considering next steps for the team's inquiry	3.075	1.500	1.575

Note. Each statement was rated on a 4-point scale: 1 = Beginning, 2 = Emerging, 3 = Applying, 4 = Innovating

Survey scores were higher than observation scores for 18 of the 20 statements.

Participants assigned lower ratings than the observer for two statements under the learning stance theme:

- Team members are open to new ideas and actively seek new information from relevant sources to help inform next steps
- Team members find value in the process.

The difference between the survey and observation scores ranged from .008 to 1.900. For 10 of the statements, the difference between survey and observation scores ranged from .333 to .692. Survey and observation scores were most similar for the theme of learning stance. For three of the four statements, differences ranged between .017 and .333. Under the theme of reflective, survey and observation scores for statements six and eight differed by 1.900 and .904, respectively. Survey and observation scores were significantly different for all statements under the theme of actions informed by evidence, with differences ranging from .833 to 1.900.

Chapter Summary

Both quantitative and qualitative data were collected in order to investigate the research questions. Both types of data and each data collection method indicated that, to an extent, Collaborative Inquiry within a PLC is present during departmental collaboration at Lennox Charter High School.

Quantitative data were collected from the Collaborative Inquiry Survey, on which participants rated departmental practice using 20 different statements as well as the Collaborative Inquiry Observation Tool, on which the researcher rated departmental practice using the same set of 20 statements. While there were significant differences between data collected from each instrument (namely that survey ratings were higher than observation ratings for 18 of the 20 statements), there were general trends. On both the survey and the observations, statements related to the themes of collaborative were rated most highly. Survey and observation scores

were variable for the theme of reflective. Statements related to the theme of learning stance received the lowest ratings on the survey, whereas they received higher ratings from observations. Scores for process driven by practice were rated highly on the surveys and were mixed on the observations. Survey scores were mixed for actions informed by evidence while statements related to this theme were rated the lowest on the observations. Many of the written survey comments noted that teachers at Lennox Charter High School employed the themes of the survey for the most part, or that most team members employed the themes. Observations confirmed that most department members employed all of the themes from the survey/observation tool—except for actions informed by evidence—and that most team members engaged fully in the departmental collaboration meetings.

Qualitative data were collected from focus groups and interviews. Participants in focus groups and interviews concluded that, to an extent, Collaborative Inquiry within a PLC was present during departmental collaboration at Lennox Charter High School. Themes that emerged from the focus groups about how to improve or sustain Collaborative Inquiry within a PLC included choosing one priority or goal, dedicating time for implementation and follow-through, willingness to participate, and relationships. These themes were explored in the interviews, where an additional theme arose: the necessity of balancing structure and autonomy during departmental collaboration.

CHAPTER 5

FINDINGS AND ANALYSIS

Restatement of Purpose

Customary models of professional development are often episodic and additive, doing little to change classroom practices or the prevailing culture of teacher isolation. Teacher isolation and episodic professional development prevent the collaboration and shared learning essential to improving student achievement and closing the achievement gap. Meaningful collaboration in teacher communities can help advance equitable educational outcomes for all students (Dufour & Marzano, 2011; V. E. Lee & Smith, J. B., 1995, 1996; V. E. Lee et al., 1997). Most current professional development focuses on bringing best practices from experts outside of the school to the teachers within it, resulting in teacher learning experiences that lack relevance. PLCs, however, assume that best practices reside within the collective knowledge of the members of a school community and can be uncovered through collective work (Lieberman & Miller, 2008).

Traditional models of professional growth have not been able to offer teachers the significant learning experiences they require to assuage the educational problems we face as a nation (DuFour et al., 2008; Lieberman & Miller, 2008). Workshops and other externally developed professional development opportunities often do not build on teachers' knowledge or speak to daily challenges in the classroom (David, 2009; McLaughlin & Talbert, 2006). If professional development is not deeply connected to teacher needs, it cannot be meaningfully incorporated into classroom practice and benefit students. Teachers should direct their own learning in a way congruent with their professional lives (Lytle, 1999).

Teachers are more likely to act on new knowledge and enact changes in their practice if they are collaborating with colleagues (DuFour et al., 2008). PLCs are a vehicle for supporting Collaborative Inquiry and implementing transformative professional development (Nelson, 2008). The complex problems that educators are faced with and the changes that schools need to embrace necessitate collaborative efforts (Bray, 2000; Lieberman & Miller, 2008; McLaughlin & Talbert, 2006). PLCs provide a framework for supporting school-wide improvement efforts, not only because they support reform efforts, but also because they can play a central role in dramatically improving the overall performance of schools (DuFour et al., 2008; DuFour & Fullan, 2013; Hall & Hord, 2006). More is known about the benefits of PLCs and Collaborative Inquiry than how to start and sustain them (McLaughlin & Talbert, 2006).

The purpose of this study was to examine the extent to which teachers at Lennox Charter High School perceived Collaborative Inquiry embedded in a PLC to be present in departmental collaboration time and the elements deemed most important in creating and maintaining Collaborative Inquiry embedded in a PLC. The researcher sought to better understand the elements deemed most important for Lennox Charter High School to create and/or maintain Collaborative Inquiry embedded in a Professional Learning Community during departmental collaboration in order to design meaningful learning experiences for teachers. The researcher endeavored to design meaningful teacher learning in order to render school site professional development more impactful, bolster teaching practice, and support equitable student achievement.

Conceptual Framework

The Five Themes of PLC Work

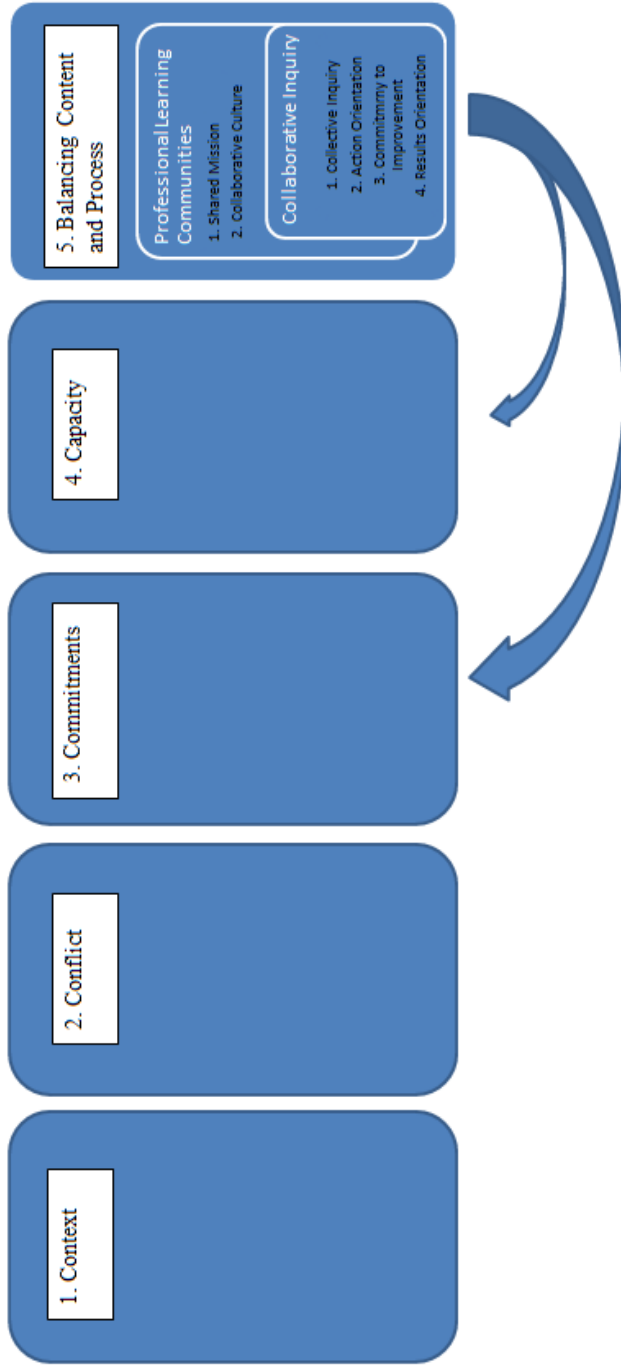


Figure 3. Conceptual framework.

Organization of Chapter Five

In Chapter Five, the data gathered through the research process are presented by the themes of the conceptual framework and aligned to the pertinent literature. The themes are as follows: context, challenge, commitments, capacity, and balancing content and process. Lieberman and Miller (2008) described context and challenge as fixed themes over which educators do not exert control. Challenge is presented as inescapable. The researchers did not advise educators to attempt to avoid challenge, but rather to expect to navigate it. Additionally, the theme of context is a fixed aspect of PLC work. While educators cannot change the community where a school is located or the culture that surrounds it, they must expect these factors to impact the work of the PLC. The other three themes of PLC work are dynamic processes with which educators and leaders must engage. DuFour et al.'s (2008) conception of the six characteristics of the PLC and Donohoo's (2013) conception of the structure of Collaborative Inquiry within a PLC work to operationalize the three themes of developing commitments, developing capacity, and balancing content and process.

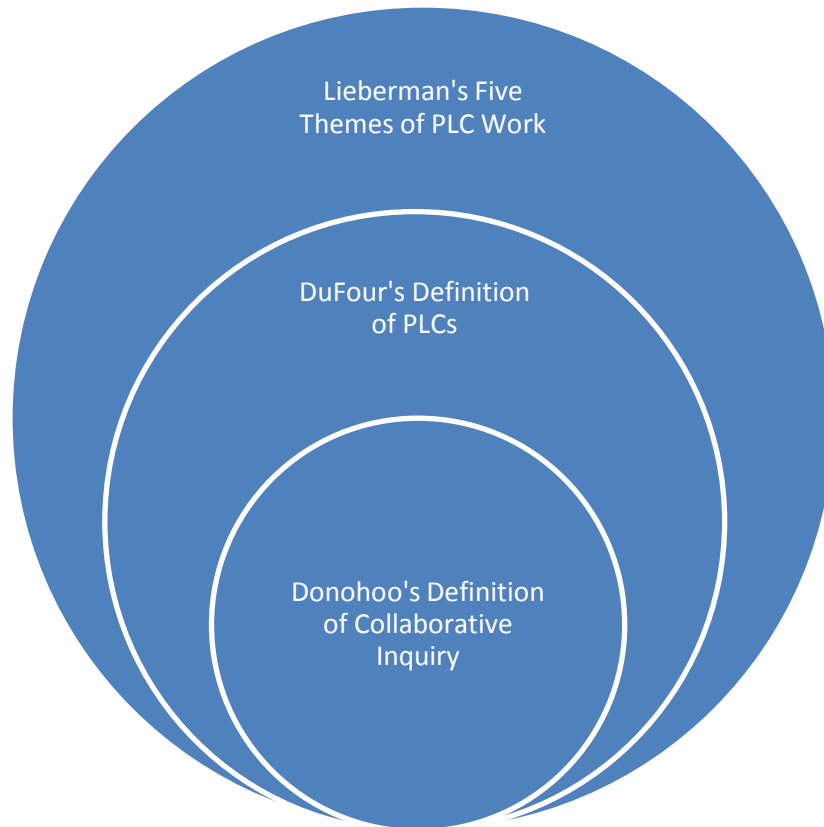


Figure 4. Contributing theories conceptual framework.

In Chapter Five, each theme is explored through the survey data, focus group data, interview data, and observation data. After each theme is explored, answers to the research questions are provided. Finally, the significance of findings is explained and recommendations for practice are offered.

Analysis

Context and Challenge

Lieberman and Miller (2008) contended that different contexts present learning communities with different challenges and that educators must consider the way that context and challenge impact PLC work. The themes of context and challenge were present in survey data,

focus groups, interviews, and observation data. Notably, participants viewed the district of which Lennox Charter High School is a part as posing a challenge for professional collaboration. Additionally, participant willingness or unwillingness to participate in collaboration arose as a challenge for collaborative work.

Two of the statements on the Collaborative Inquiry Survey shed light on the themes of context and challenge. Statement 3 on the survey, “Decision making authority is dispersed among individuals,” received the lowest mean survey rating of any on the survey. In focus groups, participants explained this low score with a perception that departmental priorities are dictated by the district not by individual members of the departments. Statement 9 on the survey, “Team members not only promote but fully participate in each stage of the Collaborative Inquiry cycle,” speaks to the challenge of participant willingness or unwillingness to participate in collaborative work. This statement received the third lowest mean score of any on the survey and indicates that respondents did not perceive team members to be promoting or fully participating in each stage of Collaborative Inquiry. The mean score for this statement was a 2.725 ($SD = .617$), indicating that the majority of participants scored this statement between a 2 and a 3 on a 4-point scale. Several of the written comments on the survey indicated that respondents perceived most, but not all, team members fully participating in collaboration.

The theme of participant willingness or unwillingness to participate emerged in focus groups as well. Participants commented that while sometimes the willingness to participate takes time to develop, there are certain teachers who never develop that willingness:

It's the willingness and sometimes it takes some time to develop the willingness.

Some teachers opened up right away and they were like "here's everything." Other teachers were like "nope." They don't commit ever.

Additionally, the theme of district structure versus department autonomy arose in focus groups. Participants articulated a tension between the structure of district mandates and teacher or department autonomy. Participants experienced the context of district mandates as a challenge. In the first focus group, one participant explained the low survey scores on statement 3, "Decision making authority is dispersed among individuals," in the following way: "I think that sentiment comes from the idea that everything's top down and that management tells us what to do in department time." Then, when asked how she thinks department agendas are set, the respondent replied, "I don't think my department chair has anything to do with it." This participant's department chair happened to be participating in the focus group and so responded by pointing out that the department communally chose the focus of department work during the previous year and the current school year. Regardless of how decisions were actually made in this department, the comment above illustrates a perception that the district dictated the content of collaboration time. Another focus group participant commented that district "business" would sometimes take time away from departmental collaboration: "I think sometimes our department time is taken up with district business; knowing the testing calendar or looking at updates or just giving information." In the second focus group, participants noted that the district offers too many priorities on which departments are asked to focus and that this overwhelms teachers, keeping collaboration time from being maximally beneficial.

All interviewees commented on the theme of district structure versus department autonomy, and all teachers but the apprentice discussed the context of district structures as presenting a challenge to departmental collaboration. Interviewees noted that participants need choice and autonomy in order for collaboration to be effective. The distinguished teacher said department foci should not come from the district and noted that the district provided too many priorities to teachers. His comments were as follows:

The pace is just so frantic and you get to the point where like there's no way. You get frustrated and you just kind of don't care . . . let's just slow it down. Let things become a little more organic.

This notion is in line with Steffy et al.'s (2000) contention that distinguished teachers need time to reflect on their practice and collaborate with peers. Distinguished teachers do not need the amount of structure that those newer to the profession might need. The expert interviewee noted the district-wide evaluation system as an additional challenge inherent in the district context. She commented that the district's evaluation system raised anxiety levels and made teachers less willing to collaborate.

The theme of participant willingness to participate arose as a challenge in the interviews as well. The expert and professional teachers noted that veterans are most reticent toward collaboration and can stop engaging/growing:

Some older teachers can get kind of stuck. And how you reopen that I don't know. -

Expert

I think a lot of people at this school especially when they have more experience tend to just want to do what they're doing and not consider that there are other ways of improving upon that. – Professional

These comments describe a distinct challenge faced by departments: how to maximize collaborative efforts when not all participants are open or willing to engage in collaboration. Peer interactions are especially important to professional teachers who advance their knowledge of instructional practice through collegial interactions (Steffy et al., 2000). Accordingly, it is important to examine how to maximize participation in collaboration.

The challenge of participant engagement in the collaboration process was additionally highlighted in the difference between observation and survey scores for two statements. There were only two statements for which the mean survey scores were lower than the mean observation scores, indicating that the researcher perceived departments as more advanced on these statements than the participants perceived their departments to be. These statements were number 11, “Team members are open to new ideas and actively seek new information from relevant sources to help inform next steps,” and number 12, “Team members find value in the process.” Both statements connected to the theme of participant willingness to participate and engage in the collaboration process. Over the course of six observations, the researcher observed participant openness through frequent questions and productive discussions and participant investment in the process through collaborative decision-making and active participation. While the researcher rated a 30-minute segment of collaboration for each department, participants rated their overall experience during department work and so had more data on which to base their ratings. It is likely that survey scores were more accurate than observation scores. Many of the

written survey comments for these two statements indicated that participants did not perceive *all* department members as open to new ideas or finding value in the collaboration process. While department members seemed engaged and invested in departmental collaboration during observations, participants did not perceive all of their department members to be engaged and invested. This is a growth area for professional collaboration at Lennox Charter High School.

Interestingly, on the statement most connected to the theme of district structure versus department autonomy (statement 3, “Decision making authority is dispersed among individuals”), there was only a .008 difference between the mean observation score and the mean survey score. The mean survey score was 2.675 ($SD = .654$) and the mean observation score was 2.667 ($SD = .817$). While there was a high level of variability in survey and observation scores, it is clear that Lennox Charter High School had work to do with respect to clarifying decision-making authority.

Lieberman and Miller (2008) noted that educators should expect to navigate challenge as they engage in collaborative PLC work. The challenges identified through data collection from surveys, focus groups, interviews, and observations were that of participant willingness or unwillingness to participate and the challenge of structures provided by the district versus the autonomy desired by teachers. The desire for autonomy aligns with adult learning theory, which states that adults are most interested in learning subjects that have immediate relevance and impact on their jobs (Knowles, 1984). It also aligns developmentally with the needs of distinguished teachers, according to Steffy et al. (2000). It is possible that the challenge presented by district structures is connected to the challenge of participant willingness to participate. Adults want learning experiences that they perceive are immediately relevant to their

jobs, not prescriptions of what is important. And if adults feel that they are not involved in planning their learning, they are less engaged in the process (Knowles, 1984). District mandates did not wholly explain participant willingness, as interviewees also noted that the most veteran teachers could be the least willing to actively engage in collaboration.

Lennox Charter High School was not unique in terms of its challenges. Lieberman and Miller (2008) asserted that schools often struggle to balance PLC work with the competing demands of the school and the district. While teachers at Lennox Charter High School did not mention competing demands of the school, the perception of district demands as challenging collaborative work was evident in each data collection method. Lieberman and Miller (2008) presented the themes of Context and Challenge as inevitable. Educators cannot avoid these themes but must consider the ways that context and challenge impact PLC work. Lennox Charter High School should consider the impact of district mandates and participant willingness to participate on department collaboration as well as how these two challenges impact each other. The challenge of participant willingness to participate will be further discussed under Lieberman and Miller's (2008) themes of commitments and capacity, which suggest that participants can develop the ability and desire to engage in professional collaboration over time.

Commitments

Lieberman and Miller (2008) noted the theme of commitments in PLC work, asserting that commitments take time to develop. Members must develop a sense of trust, get to know each other, and build norms before they can commit to learning from each other. According to Lieberman and Miller (2008), as members engage in PLC work, they gradually commit to learning from one another and start to feel differently about themselves, their peers, and their

learning; they commit to new identities as community members. The theme of commitments arose in all data collection methods. Data from surveys, focus groups, interviews, and observations illustrated varying degrees of commitment from participants and varying perceptions of participant commitment. Focus groups and interviews demonstrated a perception among teachers that commitments do in fact develop over time.

Two of the statements on the survey provided data on communication norms and the quality of departmental collaboration. Statement 1, “Norms that enable effective communication are in place,” received the third highest ratings of any on the survey. The mean score was 3.275 ($SD = .550$), indicating that the majority of participants ranked this statement as “applying” or “innovating.” Clearly, the majority of participants perceived that norms were in place to enable effective communication in departmental collaboration. Interestingly, statement 2, “When meeting as a learning team, our work together is owned by every member of our team,” received a lower rating (the 7th lowest of any on the survey). The mean score for statement 2 was 2.975 ($SD = .472$). While the mean score for statement 2 is still relatively high, it is interesting to note that participants perceived communication norms to be stronger than the degree of ownership that team members take over group work.

Two additional statements on the survey provided insight into participant perceptions of team member commitment. Statement 9, “Team members not only promote but fully participate in each stage of the Collaborative Inquiry cycle,” received the third lowest average rating of any on the survey. The mean score was 2.725 ($SD = .617$), indicating that the majority of participants scored this statement between a 2 and a 3, although responses were variable. Participants did not perceive all team members to be fully participating in collaborative work.

Statement 13, “Our work involves examining our own and each other’s practice,” received the eighth lowest average rating. The mean score was 2.975 ($SD = .617$), indicating again that responses were variable and that participant engagement in collaborative work was perceived as variable. Focus groups and interviews confirmed that participants had varying levels of commitment to the collaborative work happening in departments at Lennox Charter High School.

Focus groups described Collaborative Inquiry occurring, to an extent, during departmental collaboration time. They gave examples of actions departments had taken to engage in Collaborative Inquiry such as participation in a video analysis protocol, participation in a student work analysis protocol, and use of the Aztec Literacy Guide (a collection of literacy strategies codified by the English Department for use by all teachers). Participants affirmed Lieberman and Miller’s (2008) contention that commitments develop over time. One participant from focus group two commented on this issue in the following way:

It’s the willingness and sometimes it takes some time to develop that willingness to apply or try to find value in it, after a while it feels like – you work with a group of people and align and you know that some good things are going to come out of that.

Another participant from focus group one expressed a similar sentiment:

I think a lot if it depends on the continuity of the team, too...the longer you work together the more comfortable you feel like helping each other and developing things together and collaborating.

Finally, an additional member of the second focus group touched on DuFour and Fullan’s (2013) contention that commitments to collaborative work deepen once individuals experience the changes and results the collaboration can engender. When asked about possible ways to help

teachers find value in the process, this participant said: “Results – seeing some of these things that we do work; the things that we talk about.”

Even in light of the ways that participants described commitments deepening over time and after experiencing the positive results of collaboration, focus group participants identified that commitments were not present for all department members. A member of the first focus group commented that, even though there was strong collaboration occurring in her department, there was one teacher who, after two years, had not shared anything about his/her instruction: “It was like two years and I had no idea what they were covering.” In the one-on-one setting of the interviews, participants explained that veteran teachers tended to be the least committed to the collaborative work.

Although each of the interviews described strong collaboration occurring in his or her departmental collaboration meetings, the notion of participants holding various levels of commitment to collaboration was present in each of the four interviews. The distinguished interviewee noted that the people involved with collaboration and their willingness to compromise strongly impacted the quality of collaborative work. The professional interviewee described the three members of his department as committed to their collaborative work:

You’re open about what’s happening in your classroom and vice versa so there is a real sense of working together and feeling like we can support each other and not necessarily teaching on different islands.

He also commented that a potential reason for the strong collaboration was the fact that two of the department members were newer teachers and more open to working together. He noted

that, in previous years, the more veteran teachers in his department were less committed to joint work:

I think a lot of people at this school, especially when we have more experience tend to just want to do what we're doing and not consider that there are other ways of improving upon that.

The expert interviewee echoed this sentiment, noting, "Some older teachers can get kind of stuck and how you reopen that I don't know." She described that she had observed teachers with more than 10 years of experience being less willing to collaborate than teachers with less than 10 years of experience. These observations coincided with the characteristics of the different phases in a teacher's career life cycle, as described by Steffy et al. (2000). Newer or apprentice teachers were acutely in need of support and mentorship and so necessarily engaged their peers in collaborative settings. A professional teacher found renewal, inspiration, and support in peer interactions and started to build the confidence necessary to honestly reflect and engage in dialogue with peers. An expert teacher often served in leadership positions and possessed a zeal for self-improvement. In contrast, a distinguished teacher needed professional challenges in order to continue to grow. The distinguished teacher may not have had an intrinsic need to collaborate unless engaged in some kind of professional challenge (Steffy et al., 2000). While the "older" teachers or those with more than 10 years of experience who were mentioned above may not have fit the characteristics of the distinguished teacher (who was an exceptional practitioner), it was important to consider how the more veteran or advanced practitioners could be encouraged to actively engage in collaboration.

The expert interviewee also explained that she collaborated very well with three of the five other members of her department not only because they had been working together for several years but also because of similar personality types:

So working with some of the teachers who have either been here longer or are kind of set in their ways, that collaborative aspect wasn't as strong. Part of it is just personality . . . At the same time, any time there is a willingness to work on things, I think that really helps a lot.

The expert teacher explained that, once a veteran teacher approached her with questions about her practice, this opened up the lines of communication for collaboration. The apprentice interviewee noted:

When we have more time in the department to kind of show what we have been doing and share our expertise, then more teachers were more receptive, there was more of a trade going when we can all bring something.

Thus, posing questions and having/taking time to share expertise were two ways in which interviewees noted that participants could become more committed to the work.

Although mean observation scores were lower than survey scores for the four statements related to effective communication norms and collaborative work, observation data underscored a strong degree of commitment to departmental collaboration as well as a variability of participant commitments. The mean score for statement 1, "Norms that enable effective communication are in place," was 2.833 ($SD = .408$). For this statement, five departments were rated "applying," and one was rated as "emerging," indicating that effective communication norms were in place in all but one department. The mean score for statement 2, "When meeting

as a learning team, our work together is owned by every member of the team,” was 2.583 ($SD = .492$). Two departments were ranked as “emerging,” one as “emerging/applying,” and three as applying. There was variability among departments with respect to each member of the team taking ownership over the work. The mean score for question nine, “Team members not only promote but fully participate in each stage of the Collaborative Inquiry cycle,” was 2.167 ($SD = .753$). One department was rated as “beginning,” three were rated as “emerging,” and two were rated as “applying.” This score was the fifth lowest mean scores of all statements on the observation tool; promoting full participation for all department members was a growth area. The mean score for question 13, “Our work involves examining our own and each other’s practice was 2.5 ($SD = .548$). Three departments were ranked as “emerging,” and three as “applying,” which shows that not all departments were engaged in examining department members’ teaching practice.

Surveys, focus groups, interviews, and observations confirmed that strong communication norms were in place in the majority of departments, that strong collaborative work was occurring in departments, and that there was a good, though inconsistent, degree of participant commitment to collaborative work. Participant observations were in line with DuFour and Fullan’s (2013) and Lieberman and Miller’s (2008) assertion that commitments deepen over time. They also affirmed DuFour and Fullan’s (2013) contention that individuals will commit to learning community work after having experienced the results of successful collaboration. In addition, all data collection methods demonstrated that some department members were reticent to commit to collaborative work, and interviewees noted that those hesitant to commit were often veteran teachers. It is important to consider how to engage

veteran teachers since collaboration does not enact change in the absence of participant commitment. Lieberman and Miller (2008) argued that it is a group's commitments that impel it to take action and enact change, while DuFour et al. (2008) asserted that commitments are essential to inclining community members toward action and solution orientation. Lennox Charter High School should consider how to inspire commitment from all department members in order to render maximal benefit from departmental collaboration.

Capacity

Similar trends developed around the theme of capacity. The theme of capacity suggested that members' capacity to engage in learning communities grew as commitments developed. Members develop the capacity to make connections between their learning, their teaching practice, and the impact these have on students (Lieberman & Miller, 2008). Data from surveys, focus groups, interviews, and observations suggested that, to an extent, departments had developed the capacity to analyze the impact of teaching practice on student learning. Participants noted the need to limit the scope of department work in order to maintain or increase the capacity of departments to achieve their goals. Additionally, interview participants noted that capacity could only be maximized when department members have ownership over the goals of department work. They also cited the reticence of veteran teachers as a factor that limited departmental capacity. Finally, observations and Interviews revealed that teachers were not regularly using data during departmental collaboration.

Survey questions linked to department capacity were all highly rated. For the most part, participants perceived departments to be highly functioning. The mean score for question six, "Group members consistently use data to reflect," was 3.400 ($SD = .598$), indicating that the

majority of respondents scored collaboration between a 3 and a 4 on a 4-point scale. This statement had the second highest mean score of any on the survey. The mean score for question seven, “Team members are experimenting with new teaching ideas in the classroom and reflecting on how well they are working,” was also notably high at 3.200 ($SD = .677$). Nine respondents ranked this statement as “applying,” while seven ranked it as “innovating.” Interestingly, ratings for question 13, “Our work involves examining our own and each other’s practice,” were lower than the first two questions linked to department capacity. The mean score was a 2.975 ($SD = .617$), indicating that most respondents ranked collaboration as “applying” on this statement. The mean score for question 14, “We use practice to discover strategies that work,” was 3.200 ($SD = .523$), indicating that the majority of respondents ranked collaboration as “applying” on this statement. The mean score for question 16, “Work is connected to and impacting the work of the professional learning community and wider school improvement efforts,” was a 3.125 ($SD = .510$). Statements linked to department capacity were highly rated; each was among the 10 highest rated statements on the survey.

In focus groups, participants described a belief in the capacity of departments to engage in meaningful collaboration. In both focus groups, participants mentioned the Video Analysis protocol as an example of departmental capacity to engage in collaborative work that benefits students. Participants spoke to the importance of limiting the goals of collaborative work and allowing time for follow-through in order to maintain or improve the capacity of departments:

We have to do one specific thing and then we just need to make sure we’re tracking in and keeping on top of it so it’s not just another thing we said we were going to do but never followed up on.

Less is more . . . less of all the different strategies and just kind of focus on what's our bread and butter.

Participants in focus group two expressed confidence in the capacity of department members and expressed that Collaborative Inquiry is present “to a great degree.” Members of this focus group commented on the necessity of limiting goals in order to maximize capacity. One participant mentioned that Collaborative Inquiry was present only when departments have a narrow focus on which they follow through:

When we really fully take something on like that, then we are doing [Collaborative Inquiry] . . . but when we're not really looking at what students have done, then we're not.

The issue of participant willingness also arose in both focus groups as an element affecting department capacity. One participant described willingness as something that developed over time:

The longer you work together the more comfortable you feel like helping each other and developing things together.

In discussing participant willingness, focus group members commented that people were more committed to collaboration when they saw the results of the collaborative work and/or the capacity of their fellow department members, for example, when a 12th-grade history teacher saw what students had learned in 10th- and 11th-grade history classes.

Similar themes arose in the interviews. Interviewees commented on the importance of relationships in building trust and capacity for collaborative work. They also echoed the sentiment expressed in the focus groups that capacity for collaboration develops over time. The

expert and professional teachers both mentioned that veteran teachers were the least likely to engage fully in collaboration. The professional teacher also commented that sometimes close relationships between teachers inhibited collaboration and kept conversations “safe.” All interviewees noted that, to some extent, Collaborative Inquiry was present in their departmental collaboration time. The professional teacher described a “Real sense of working together and feeling like we can support each other.” He also stated that, although there was strong collaboration in his department, he believed that there should be more analysis of evidence of practice, such as video of teaching practice. The distinguished teacher commented similarly:

I feel that’s missing sometimes – the ability to really take the time to sit down and really look at whatever data is that we’re using to make those conclusions.

Observation data confirmed that analysis of data were not a common practice in departmental collaboration. Accordingly, this is an area of focus that Lennox Charter High School could use to improve Collaborative Inquiry.

Interviewees all agreed that allowing departments to set their own goals could assist with participant willingness and build capacity in teams. The apprentice, expert, and professional teachers all commented that an increased amount of structure (such as agreed-upon objectives for all department meetings, requirements of evidence collection, or presentations of department goals and results) could improve professional collaboration, but that too much structure would hinder collaborative work. The expert, distinguished, and apprentice teachers all noted that department goals should be set by departments, and the distinguished teacher commented on his lack of investment in unrealistic district initiatives leading to a sense of apathy:

You get frustrated and you just kind of don't care I guess. It kind of leads to this apathy about it's not possible so why should I care.

This comment shed light on participant observations that veteran teachers were sometimes less willing to collaborate than less experienced teachers. Perhaps veterans felt unmotivated to participate in collaboration when and if they did not feel like they had shaped the goals for department work time. Steffy et al. (2000) contended that a distinguished teacher needed to be challenged in order to continue to grow. While not all veteran teachers were distinguished teachers, it is worth considering how to provide experienced practitioners with the kinds of professional challenges that would engage them in professional collaboration. The expert teacher noted the importance of strong department leadership to building capacity. The way that department chairs communicated about and set department goals may have had implications for the level of investment that veteran teachers felt. Perhaps veteran teachers should help drive the goal setting within their departments.

While statements related to department capacity were rated highly on the survey, they received lower scores on observations. The mean score for question six, "Group members consistently use data to self-assess and reflect," was 1.5 ($SD = .837$), which was the second lowest rating of any on the observations and 1.900 points lower than the mean survey score. This trend continued with the other statements linked to capacity. The mean score for question seven, "Team members are experimenting with new teaching ideas in the classroom and reflecting on how well they are working" was 2.833 ($SD = .408$), and only .367 points lower than the mean survey score. The mean score for question 13, "Our work involves examining our own and each other's practice," was 2.5 ($SD = .548$), which was .475 lower than the mean survey

score. The mean score was question 14, “We use practice to discover strategies that work,” was 2.583 ($SD = .492$), and .617 points lower than the mean observation score. The mean score for question 16, “Work is connected to and impacting the work of the professional learning community and wider school improvement efforts,” was 2.333 ($SD = 1.033$), and .792 lower than mean survey scores. While observations revealed that departments were discussing classroom practice and teaching ideas, there was a lack of evidence-based discussion and reflection. It is possible that this comment from a veteran teacher in the first focus group explained the disconnect between observation scores about data/evidence and teacher perceptions as expressed on the survey:

As a veteran teacher I don’t think of numbers . . . I just think of how my class went . . . growth is with their personalities . . . then I do reflect . . . did the intervention help with their behavior.

Observations were in line with this comment, revealing teacher conversations about perceptions of classroom practice but not examinations of evidence. This was an area of collaborative practice that can be strengthened.

Interestingly, Ingram (2004) argued that teachers are more likely to develop the capacity to use and analyze data systematically when they were working in groups and that, outside of groups, teachers were more likely to rely on intuition and anecdotes. At Lennox Charter High School, however, participants seemed to be relying on intuition within collaborative groups. School leaders and department leaders need to work to build capacity around data and evidence analysis. Since teacher work in PLCs can help educators build the capacity to transform teaching

and learning for teachers and students (Lieberman & Miller, 2008), it is important that Lennox Charter High School invest in purposefully increasing capacity.

Participant comments about the importance of teachers choosing the goals of collaboration aligned with DuFour and Marzano's (2011) contention that educators must commit to a shared mission in order to maximize the impact of collaborative work. In the absence of these commitments, collaboration is not capacity building and can reinforce the status quo, which, in some cases, seemed to be occurring with veteran teachers at Lennox Charter High School. Because teacher commitments to norms, each other, and student learning are what allow groups to build the capacity to transition from "story swapping" to productive collaboration (Young, 2006), it is important that Lennox Charter High school explore and engender participant commitments in order to maximize the collaborative capacity of departments. Staff could expect this work to be challenging. Fullan et al. (2009) noted that building group capacity is challenging because it involves working together in new ways.

Balancing Content and Process

Schools engaged in learning community work must determine how to deepen subject matter knowledge while remaining mindful of the processes that keep communities healthy. Teachers best develop new knowledge when content is balanced with community; when communities acknowledge that human resources are essential and put relationship building on the agenda (Lieberman & Miller, 2008). Educators must commit both to ideas and to relationships between community members.

Participants ranked survey statements linked to the theme of process highly. The mean score for question one, "Norms that enable effective communication are in place," was a 3.275

($SD = .550$), indicating that the majority of participants scored this statement between a 3 and a 4 on a 4-point scale. This was the third highest rated statement on the survey. The mean score for question five, “Routines that encourage and enable individuals to consider and reflect on solutions to their problems of practice are in place,” was a 3.050 ($SD = .686$), indicating that the majority of participants scored this statement between a 2.5 and a 3.5 on a 4-point scale. Although the ratings were variable, most respondents ranked collaboration as “applying” on this statement.

Statements linked to the theme of content were also rated highly. Statements linked to the themes of content and process were all in the 10 highest rated statements of the 20 on the survey. The mean score for question 17, “Analysis of relevant and current data is deemed important and is an ongoing priority for the team,” was a 3.200 ($SD = .616$), indicating that most respondents ranked collaboration as “applying” on this statement. The mean score for question 18, “The team considers teaching practices and determines approaches that are successful and those that need to be changed,” was 3.000 ($SD = .562$). Fourteen respondents ranked collaboration as “applying” on this statement, and three ranked it as “innovating.” The mean score for question 20, “Current student learning data is collaboratively examined and provides a basis for considering next steps for the team’s inquiry,” was a 3.075 ($SD = .520$), indicating that the majority of participants ranked this statement between a 2.5 and a 3.5 on a 4-point scale. Fourteen participants ranked the statement as “applying,” and three ranked it as “innovating.”

Focus group feedback underscored the importance of relationships to strong collaborative work. One of the participants in the first focus group noted that, “A lot of relationship building is probably the key to any type of collaboration.” Members from both focus groups commented

that the longevity of the department team contributed to the quality of collaboration. A member of the first focus group put it this way:

I think a lot of it depends on the continuity of the team too in the department. The longer you work together the more comfortable you feel like helping each other and developing things and collaborating.

And a member of the second group noted, “It takes time to get to know a group of people and find value in the process of sitting down together and working on different things.”

Members of both focus groups noted that they found value in departmental collaboration. One participant noted that he found value in sitting together to talk about common problems and solutions. Another noted that he appreciated that the focus of collaboration time was not rigid, and that he felt like he was “on the same page” with his team members. Interestingly, both focus groups struggled to name data sources that were used during department time as well as examples of evidence of practice that were discussed/examined during department time. In talking about a collaborative conversation about literacy practices, one participant stated, “I don’t know if it went anywhere but we had a good conversation.” Interviews reinforced the idea that the process aspect of collaborative work was strong; teachers enjoy positive, productive relationships with their department peers. However, the content aspect of collaborative work seemed to be lacking. Participants did not describe robust data analysis or evidence-based conversations.

Interviews reinforced this phenomenon. Interview participants noted the positive process aspects of collaborative work, describing productive collaborative relationships with department members while most noted a lack of the evidence-based or databased conversations, which

would allow departments to truly assess the impact of their practice. The professional interviewee noted that people trust each other and have more openness to work with each other.

The apprentice and expert interviewees commented that meaningful collaboration hinged on strong relationship building. Similarly, the distinguished interviewee stated that the quality of collaboration depended on “Relationships and willingness to compromise.” This participant said the following in trying to describe how departmental collaboration at Lennox Charter High School could be improved:

I think that maybe something here within the Collaborative Inquiry that is missing to some degree could be assessing the impact of our actions and actually taking the time to...look at how what they have tried to implement in their classrooms has translated into student work.

Other interviewees made similar observations. The professional teacher noted that departments needed “More consistent communication as far as seeing if the things we are talking about are actually happening in the classroom.” This participant also described a phenomenon of teachers protecting each other about “Things that should probably be taken more seriously.” In this way, he described the trusting relationships as, in some ways, harmful to collaboration. A teacher in the professional phase of his career needs collegial support in order to renew himself (Steffy et al., 2000). The professional interviewee expressed that he, in effect, needed more communication and commitment from his colleagues.

The expert interviewee had interesting recommendations for collaborative practice. She noted that Collaborative Inquiry was present in her department when the department focused on one or two goals and collected evidence of those goals. She also suggested that departments

focus on “the interpersonal stuff” in the beginning of the year and then “hone in on one or two goals for the rest of the year.” Additionally, she said that members needed timely face-to-face reminders to follow through on evidence collection and data gathering. Finally, in response to a question about how to maximize instructional time, she stated: “I think maybe then just really purposefully choosing department heads because a lot of it does come from who is doing the leading.” These recommendations combined with other interviewee input describe clear ways in which the content aspect of professional collaboration could be improved.

Observations similarly revealed growth areas in the content aspect of professional collaboration. While observation ratings for statements linked to the theme of process were highly similar to survey ratings (in the six highest rated statements), observation ratings for statements linked to the theme of content were significantly lower than survey ratings (in the six lowest rated statements). The mean score for question one, “Norms that enable effective communication are in place,” was 2.833 ($SD = .408$), indicating that most departments were rated between a 2.5 and a 3.5 on a 4-point scale. Five departments were rated “applying,” and one was rated as “emerging.” The mean score for question five, “Routines that encourage and enable individuals to consider and reflect on solutions to their problems of practice are in place,” was 2.667 ($SD = .516$), indicating that the majority of departments were scored between a 2 and a 3 on a 4-point scale. Two departments were rated as “emerging” and four as “applying” for this statement. In almost all departments, effective communication was evident. No disrespectful or subversive communication was observed. In most departments, most group members “owned” the work and actively participated in discussion and decision making.

Disagreement was not observed. Rather, participants posed questions and came to conclusions as a group. The theme of process was strongly evident in department collaboration.

The theme of content was not strongly evident in department practice. The mean observation scores for the “actions informed by data” section of the survey were the lowest of any of the five sections. The mean score for question 17, “Analysis of relevant and current data is deemed important and is an ongoing priority for the team,” was 1.5 ($SD = .837$), indicating that scores were variable. Four departments were rated as “beginning,” one as “emerging” and one as “applying.” The mean score for question 18, “The team considers teaching practices and determines approaches that are successful and those that need to be changed,” was 2.167 ($SD = .753$), indicating that scores were variable. One department was rated as “beginning,” three were rated as “emerging,” and two as “applying.” The mean score for question 20, “Current student learning data is collaboratively examined and provides a basis for considering next steps for the teams inquiry,” was 1.5 ($SD = .837$), indicating that responses were variable. Four departments were rated as “beginning,” one as “emerging,” and one as “applying.” There was minimal evidence of departments using evidence and data to inform their actions. Additionally, there was a difference between teacher perceptions of evidence use and observer assessment. Survey and observation scores were significantly different for all statements under the theme of “actions informed by evidence,” with differences ranging from .833 to 1.900. Clearly, Lennox Charter High School could improve how evidence analysis informed the content aspect of collaborative work.

The six characteristics of a PLC, which include the process of Collaborative Inquiry, suggest a conceptual framework for navigating the theme of balancing content and process.

According to Lieberman and Miller (2008), teachers can best develop new knowledge when content is balanced with community. PLCs must simultaneously prioritize deepening the subject matter knowledge of participants and concentrate on the processes that keep communities alive. At Lennox Charter High School, the process aspect of collaborative work was strong within learning communities. It was the content aspect that needs to be strengthened; specifically the use of data or evidence.

In an embedded-systems approach to examining teacher data use in four schools, Young (2006) found that a group's process, including norms of interaction, leadership, and agenda setting, determined whether or not participants engaged in data analysis and meaningful discussion of content. The norms of a group's collaborative process could legitimize joint analysis of student work and data and squelch the exchange of war stories (Young, 2006). This research suggested that Lennox Charter High School should consider reexamining norms, leadership, and agenda setting. While collegial relationships were evident to the researcher as well as the participants, perhaps departments needed to deepen their trust in order to wholly engage in data analysis. It was also possible that department chairs needed more training in agenda setting and group facilitation. In a narrative case study of a group of 12 professional development providers, Nelson et al. (2008) concluded that two important decisions allowed the group to function as a learning community: the use of protocols to examine data (content) and the construction and maintenance of norms for collaboration (process). Lennox Charter High School could consider the use of protocols to strengthen department data analysis as well as the content aspect of collaborative practice.

Research Questions

The purpose of this study was to investigate teacher perceptions of Collaborative Inquiry as well as the elements deemed most important for Lennox Charter High School to create and/or maintain Collaborative Inquiry embedded in a PLC during departmental collaboration time. This mixed-methods case study sought to answer the following questions:

- What are teachers' perceptions of Collaborative Inquiry embedded in a Professional Learning Community during departmental collaboration time at Lennox Charter High School?
- What are the elements deemed most important for Lennox Charter High School to create and/or maintain Collaborative Inquiry embedded in a Professional Learning Community during departmental collaboration?

In order to answer the research questions, data were collected through survey administration, focus groups, interviews and observations.

Answering the Questions

Research question one. Teachers perceived that, to an extent, Collaborative Inquiry embedded in a Professional Learning Community was present during departmental collaboration time at Lennox Charter High School. Results from surveys, focus groups, and interviews showed that most participants perceived most elements of Collaborative Inquiry to be present during departmental collaboration. Participants most commonly perceived the data analysis and “actions informed by evidence” aspects of Collaborative Inquiry to be missing from departmental collaboration. Observations underscored that the “actions informed by evidence” aspect of Collaborative Inquiry was the most commonly absent element. Additionally,

observations revealed that the other aspects of Collaborative Inquiry were, for the most part, present in the collaboration meetings for most departments.

Although there are aspects of collaborative practice that needed to be strengthened, Lennox Charter High School was positioned to advance social justice by implementing Collaborative Inquiry within a PLC. Lennox Charter High School served a student population of which 94% received free or reduced lunch and all were students of color. As the gap between high-achieving students and struggling students grows in our country (DuFour & Fullan, 2013), and students of color and students eligible for free or reduced lunch lag behind their White and more affluent peers in achievement and graduation rates (Dufour & Marzano, 2011), educators in schools like Lennox Charter High School must recognize the inadequate and unjust outcomes of American schools. At a time when the link between education and lifetime opportunity has never been stronger, there is increasing urgency around excellent and equal educational opportunities for all students (DuFour & Fullan, 2013). Meaningful collaboration in teacher communities can help to advance equitable educational outcomes for all students (Dufour & Marzano, 2011; Lee, & Smith, 1995, 1996; Lee, et al., 1997). Lennox Charter High School could more heavily incorporate evidence and data analysis into professional collaboration in order to implement a more robust model of collaboration and to work more effectively toward equitable educational outcomes for all students.

Research question two. Every student deserves an excellent and academically rigorous education. It is a school leader's ethical and moral responsibility to facilitate an environment in which teachers can work toward assuaging the achievement gap and ensure that each student receives the support he or she needs to succeed. School leaders can advance social justice by

facilitating high-quality teacher collaboration. Bolstering the current model of Collaborative Inquiry embedded in a PLC at Lennox Charter High School will enable the researcher, as the school leader, to advance equitable educational outcomes for all students.

Surveys, focus groups, interviews, and observations revealed specific ways that collaborative practice at Lennox Charter High School could be improved. Lennox Charter High School could create stronger Collaborative Inquiry by bolstering the data analysis and the “actions informed by evidence” aspect of collaborative work. This idea is further explored in the recommendations section. Other elements deemed important for bolstering or maintaining Collaborative Inquiry are: well-trained and carefully chosen department chairs, continuity of teams, limiting the scope of department work to one or two goals, and better engaging veteran teachers in collaborative work.

The complex problems that educators are faced with can only be successfully navigated in collaborative efforts (Bray, 2000; Lieberman & Miller, 2008; McLaughlin & Talbert, 2006). There is no single formula for successful adoption of the CCSS or for closing the achievement gap. But focused Collaborative Inquiry in a PLC can support schools in the intensive collaborative work necessary to tackle the inequities in our education system (Bray, 2000; DuFour et al., 2008; DuFour & Fullan, 2013; DuFour & Marzano, 2011; Lieberman & Miller, 2008; McLaughlin & Talbert, 2006). The researcher has a clear path to improving the implementation of Collaborative Inquiry at Lennox Charter High School.

Significance of Findings

The findings of this study provided Lennox Charter High School with recommendations for improving and maintaining Collaborative Inquiry during departmental collaboration time.

Data collection and analysis revealed key elements for leaders and staff to consider in improving and maintaining Collaborative Inquiry in the future. Since this study gathered data from one school, discoveries and conclusions may not be applicable to other schools.

A choice was made at the outset of this study to focus on departmental collaboration at one school in order to understand the impacts of collaboration in that particular context. Since learning is situated within context and social interaction, one must deeply understand relationships, setting, and other environmental factors in order to understand professional learning in a school (Lave & Wenger, 1991). Accordingly, this study provided insight into the collaboration context at LCHS. The findings uncovered over the course of this study provide ample insights that the researcher can use to maintain, deepen, and improve Collaborative Inquiry at Lennox Charter High School. Although the findings of this study are not necessarily generalizable, they could potentially be useful for other schools seeking to implement meaningful collaboration.

Recommendations for Lennox Charter High School

It is recommended that Lennox Charter High School endeavor to improve the “Actions informed by evidence” aspect of Collaborative Inquiry. Data analysis showed the “process” or relationship aspect of collaboration to be stronger than the “content” aspect of collaboration. Specifically, the evidence/data analysis portion of content exploration needs to be strengthened. School leaders and department chairs need to work to build teacher capacity around data and evidence analysis. Possible ways to do this include training department leaders in data analysis at the beginning of the year and using data analysis protocols in departmental collaboration. Nelson et al. (2008) argued that the use of protocols strengthens data analysis conversations.

Further recommendations to improve both the data/evidence analysis aspect of collaboration as well as the overall quality of collaboration include purposefully choosing department chairs and providing a forum in which departments share the work they are doing and the data they are collecting/analyzing. Finally, it is recommended to limit the scope of collaborative work by training department chairs to collaboratively create one or two goals and remain focused on gathering and analyzing evidence of these goals throughout the school year. Young (2006) asserted that a group's norms, leadership, and agenda setting determine whether or not there is data analysis and meaningful discussion of content. It is recommended to train leaders in creating norms and agendas in order to fully maximize the power of departmental collaboration at Lennox Charter High School.

It is additionally recommended to provide departments with structure in the form of recommendations and tools but it is clear that imposing too much structure could hamper professional collaboration. While participants in the study celebrated the autonomy of their departments, they commonly mentioned the potential benefits of increased structure in the form of protocols and a recommended trajectory for department collaboration throughout the school year. Participants additionally lamented district mandates. Increased structure at the school site should not be communicated as a mandate, but rather as recommendations to enhance department collaborative practice.

Data collection additionally revealed the value of having continuity in department teams. Teachers observed that having sustained time to work together as a team improved the quality of collaboration. Lennox Charter High School should seek to retain effective teachers in order to have longevity on department teams. Finally, data overwhelmingly showed that some members

were less willing to collaborate than others, and that those less willing were often veteran teachers. Interestingly, while the quality of collaboration increased as teams spent time working together, some experienced teachers also become less engaged in collaborative work over time. Lennox Charter High School should seek to more deeply engage veteran teachers in collaborative work so that collaborative teams have longevity and all participants remain engaged.

Departments at Lennox Charter High School were composed of teachers in different phases of their careers. While apprentice, professional, and expert teachers seemed to express similar perceptions and needs with respect to professional collaboration, they also identified that the more experienced practitioners in their departments tended to be the least engaged. This phenomenon was expressed as a concern since teachers at these stages of their careers found collaboration with their peers to be sustaining (Steffy et al., 2000). The distinguished interviewee felt strongly that district priorities and initiatives were not realistic or productive and cited this as a factor leading to disinvestment in collaboration. Since more experienced practitioners need challenges to keep them engaged in professional growth, it is important that the interests and growth areas of these teachers are entertained in professional collaboration.

Distinguished teachers, in particular, need support from school administrators to engage in continual professional development (Steffy et al., 2000). School leaders at Lennox Charter High School should discuss professional aspirations with experienced practitioners and help to shape professional collaboration in a way that will challenge those with experience while enriching educators with less experience. It would be prudent to explore the idea of allowing distinguished educators to collaborate with other distinguished educators. This concept could be

challenging to implement, considering that departments at Lennox Charter High School were composed of three to seven teachers, and there may not have been more than one distinguished educator in each department. It would be wise to ask distinguished practitioners if they would prefer to collaborate with department peers or to pursue professional growth goals with other educators in similar career phases.

This study produced multiple recommendations for Lennox Charter High School to improve professional collaboration. As the principal of the school, the researcher will facilitate the implementation of these recommendations. The researcher will gather input from assistant principals, teacher leaders, and all teachers in order to determine an action plan.

First, the researcher will present study findings to the two assistant principals at Lennox Charter High School in order to discuss which recommendations should be prioritized and how findings should be presented to staff members. The researcher will use this input to plan a professional development session in May, where teachers will be presented with general study findings and recommendations from the study. In this session, teachers will be able to provide feedback on school-wide priorities for professional development and professional collaboration for the coming school year. The researcher will use staff feedback to plan the summer teacher leader retreat where administrators and department chairs will analyze teacher feedback as well as study recommendations to formulate strategic instructional goals for the coming school year. During this teacher leader retreat, the researcher will discuss the imperative that Lennox Charter High School bolster the data analysis aspect of Collaborative Inquiry. The group will discuss how to best engage department members in robust data analysis as well as whether department teams need to address mindsets around data or need tools/protocols for making sense of data.

After gathering input from teacher leaders and assistant principals, the researcher will create the professional development and professional collaboration calendar for school year 2016–2017. This calendar will include general guidance for how departments can implement recommendations from this research based on feedback from teachers, department chairs, and administrators. This calendar will also include two professional development sessions, over the course of the school year, where the staff at Lennox Charter High School can discuss the quality of teacher collaboration. This discussion will include the ways in which department teams have focused on evidence and data analysis as well as action steps for teachers and administrators to continually improve the quality of professional collaboration at Lennox Charter high School.

The researcher will use the Carnegie Foundation’s notion of improvement science and, specifically, its model of Networked Improvement Communities (NICs), to engage department teams in this continuous improvement effort. The foundation contends that NICs are the most effective and efficient way to organize improvement efforts. NICs have a problem-solving focus and work to test and refine potential research-based solutions in a disciplined way (Bryk, Gomez, Grunow, & Lemahieu, 2015). This model will support the Collaborative Inquiry cycle already present at Lennox Charter High School and help department teams to focus on specific areas of improvement.

Recommendations for Policy

The above recommendations concern how Lennox Charter High School can use information from this study to enhance departmental collaborative practice at the school site. Over the course of data collection, analysis, and triangulation for this study, there were three

areas in which data overwhelmingly underscored existing research concerning professional collaboration. These areas comprise recommendations for policy.

First, it is recommended that schools seeking to implement Collaborative Inquiry consider the importance of balancing content exploration with the processes that keep communities healthy and sustain relationships. Data collection overwhelmingly underscored Lieberman and Miller's (2008) contention that these two factors must be balanced in order for meaningful collaboration to occur.

Next, it is recommended that participants will become increasingly committed to collaborative work when they see the results of the work. Again, data collection over the course of the study overwhelmingly confirmed this contention of Lieberman and Miller (2008). As such, leaders can consider engaging participants in productive collaborative work before expecting groups to be committed to it.

Finally, it is recommended that those seeking to implement Collaborative Inquiry find ways to commit to the longevity of their teams. This research clearly demonstrated that capacity for collaboration develops over time (Lieberman & Miller, 2008). Anything leaders can do to retain effective staff members can increase the quality and impact of professional collaboration.

Recommendations for Future Research

Future research could investigate Collaborative Inquiry in different contexts in order to provide school leaders with insight into implementing collaborative structures in a variety of contexts. It could be illuminating to conduct a study at a high-performing school as well as a low-performing schools in order to explore the different contexts and school site needs. Additionally, a future study could be conducted at a traditional public school with a larger

population of veteran teachers in order to explore the characteristics and professional needs of this group of teachers.

Future research at Lennox Charter High School could investigate teacher perceptions of data as well as techniques for building teacher capacity around data analysis. It could be additionally useful to investigate veteran teachers' perceptions of departmental collaboration in order to ascertain the conditions under which those teachers would create commitments to collaborative work.

Summary

The purpose of this study was to examine the presence or absence of Collaborative Inquiry at Lennox Charter High School and to investigate the factors that would help to create or maintain it. Research revealed that Collaborative Inquiry was present at Lennox Charter High School and that several factors could be considered in order to enact a more robust model of it. As the school leader, the researcher could consider these factors in designing professional development and professional collaboration experiences. Additionally, the researcher could consider these factors in selecting and training department chairs.

As the principal, the researcher should consider that Lennox Charter High School's relative weakness with respect to the "Actions Informed by Evidence" aspect of Collaborative Inquiry is a significant growth area for the school. It is important to bolster this element of practice in order to realize a maximally productive model of Collaborative Inquiry.

Learning community work relies on the belief that the necessary knowledge and skills required to move schools and students forward were present at the school site. Teachers don't need external professional development opportunities to best support students; they need to

deeply engage with their peers in a process of Collaborative Inquiry. Thus, it will be important for the researcher to present the findings of the study to the teachers at Lennox Charter High School and to engage them in determining next steps for department work. The process for realizing more robust Collaborative Inquiry at Lennox Charter High School should, of course, be a collaborative one.

Conclusion; a Personal Reflection

The researcher learned a lot over the course of constructing this study, exploring the literature, collecting data, and conducting analysis. Most importantly, the research process uncovered the ways in which professional collaboration can be strengthened at Lennox Charter High School, as well as several methods that can be used to bolster the quality of professional collaboration. Surveys, focus groups, interviews, and observations provided detailed insight into the strengths and weaknesses of the current iteration of Collaborative Inquiry at Lennox Charter High School. Interviews were particularly helpful in providing specific insights for how to make improvements. The interviews were so beneficial, in fact, that the researcher has considered scheduling semistructured one-on-one conversations with teachers every school year in order to get candid feedback about school performance and potential ways to improve.

Lessons learned over the course of this study have already started to inform professional development and collaboration at Lennox Charter High School. The last unit of professional development for teachers was designed by the researcher and a team of teachers to embody the aspects of Collaborative Inquiry work. Special attention was paid to the data collection and analysis aspect of the work and results were excellent. In differentiated groups, teachers either collected student work, observed each other's classes, and collected artifacts, or videoed a

segment of each other's lesson. Groups analyzed the results of their data and then each group presented their findings to the school. Teacher feedback on this unit of professional development was positive and school leaders have observed teachers implementing strategies from this professional development unit in their classrooms.

Study findings overwhelmingly supported ideas extended in the literature, underscoring the importance of Lieberman and Miller's (2008) themes of PLC work. Professional collaboration is a complex process. The themes of content, conflict, commitments, capacity, and balancing content and process are always at play when educators sit down to collaborate. Because of this, there is no formula for ideal implementation. The researcher expects to see these themes at work in professional collaboration at Lennox Charter High School for years to come, and to more deeply understand them every year.

APPENDIX A

WRITTEN PERMISSION TO USE COLLABORATIVE

INQUIRY CONTINUUM SURVEY

From: Binur, Michelle Michelle.Binur@sagepub.com on behalf of permissions (US) permissions@sagepub.com
Sent: Sunday, December 10, 2014 9:18 AM
To: Alyce Prentice
Subject: Permissions inquiry

Dear Alyce Prentice,

Thank you for your request. You can consider this email as permission to use the material as detailed below in your upcoming dissertation. Please note that this permission does not cover any 3rd party material that may be found within the work. We do ask that you properly credit the original source, *Collaborative Inquiry for Educators*. Please contact us for any further usage of the material, including republication.

Best regards,
Michelle Binur

Rights Assistant
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From: Alyce Prentice [<mailto:alyce.prentice@animo.org>]
Sent: Sunday, December 07, 2014 5:13 PM
To: permissions (US)
Subject: Permissions inquiry

To Whom It May Concern,

I am a doctoral student at Loyola Marymount University and am writing a dissertation on Collaborative Inquiry within a Professional Learning Community. I would like to obtain permission to use the Characteristics of Collaborative Inquiry Continuum (Resource J) from Jenni Donohoo's book *Collaborative Inquiry for Educators* as part of my research.

Please let me know who I should contact about this inquiry.

Thank you for your help,

Alyce Prentice
Principal
11044 S. Freeman Avenue
Inglewood, CA 90304
O: 323.565.4420
C: 213.500.9541

APPENDIX B

COLLABORATIVE INQUIRY CONTINUUM SURVEY

Collaborative Inquiry Survey

Thank you for taking the time to complete this survey.

1. For how many years have you worked in education? _____
2. For how many years have you worked at Animo Leadership Charter High School? _____

For each statement, select a place on the continuum that you believe best represents the collaborative work you do with your department members and during professional development.

The continuum includes four stages. Below is a description of each:

Beginning - the statement does not describe the collaborative work you participate in on this campus or the collaborative work you participate in on this campus is in the beginning stages of what is described in the statement

Developing - the statement describes elements that you see developing in the collaborative work that you do

Applying - the statement describes the collaborative work you participate in on this campus

Innovating - the statement describes the collaborative work you participate in on this campus and you have observed or participated in innovations related to the statement

Collaborative

3. Norms that enable effective communication are in place.

Beginning	Developing	Applying	Innovating
-----------	------------	----------	------------

Comments:

- When meeting as a learning team, our work together is owned by every member of the team.

Beginning	Developing	Applying	Innovating
-----------	------------	----------	------------

Comments:

- Decision making authority is dispersed among individuals.

Beginning	Developing	Applying	Innovating
-----------	------------	----------	------------

Comments:

- Diversity of opinion is promoted and evident in our joint work.

Beginning	Developing	Applying	Innovating
-----------	------------	----------	------------

Comments:

Reflective

7. Routines that encourage and enable individuals to consider and reflect on solutions to their problems of practice are in place.

Beginning	Developing	Applying	Innovating
-----------	------------	----------	------------

Comments:

8. Group members consistently use data to self-assess and reflect.

Beginning	Developing	Applying	Innovating
-----------	------------	----------	------------

Comments:

9. Team members are experimenting with new teaching ideas in the classroom and reflecting on how well they are working

Beginning	Developing	Applying	Innovating
-----------	------------	----------	------------

Comments:

10. Thinking is more intentional and explicit based on reflection.

Beginning	Developing	Applying	Innovating
-----------	------------	----------	------------

Comments:

Learning Stance

11. Team members not only promote but fully participate in each stage of the Collaborative Inquiry cycle.

Beginning	Developing	Applying	Innovating
-----------	------------	----------	------------

Comments:

12. Our time together is focused on student learning, professional learning, teaching practice, and/or leading.

Beginning	Developing	Applying	Innovating
-----------	------------	----------	------------

Comments:

13. Team members are open to new ideas and actively seek new information from relevant sources to help inform next steps.

Beginning	Developing	Applying	Innovating
-----------	------------	----------	------------

Comments:

14. Team members find value in the process.

Beginning	Developing	Applying	Innovating
-----------	------------	----------	------------

Comments:

Process Driven by Practice

15. Our work involves examining our own and each other's practice.

Beginning	Developing	Applying	Innovating
-----------	------------	----------	------------

Comments:

16. We use practice to discover strategies that work.

Beginning	Developing	Applying	Innovating
-----------	------------	----------	------------

Comments:

17. We draw on outside ideas in relation to how they relate to our situation.

Beginning	Developing	Applying	Innovating
-----------	------------	----------	------------

Comments:

18. Work is connected to and impacting the work of the professional learning community and wider school improvement efforts.

Beginning	Developing	Applying	Innovating
-----------	------------	----------	------------

Comments:

Actions Informed by Comments

19. Analysis of relevant and current data is deemed important and is an ongoing priority for the team.

Beginning	Developing	Applying	Innovating
-----------	------------	----------	------------

Comments:

20. The team considers teaching practices (in light of student data) and determines approaches that are successful and those that need to be changed.

Beginning	Developing	Applying	Innovating
-----------	------------	----------	------------

Comments:

21. The team considers multiple sources of Comments to gain a well-rounded picture of their inquiry.

Beginning	Developing	Applying	Innovating
-----------	------------	----------	------------

Comments:

22. Current student learning data is collaboratively examined and provides a basis for considering next steps for the team's inquiry.

Beginning	Developing	Applying	Innovating
-----------	------------	----------	------------

Comments:

APPENDIX C

COLLABORATIVE INQUIRY OBSERVATION TOOL

Observation Date: _____

Observation Start Time: _____

Observation End Time: _____

Department: _____

The observer will rate the professional collaboration on the continuum (beginning to innovating) for each listed characteristic and script participant words and actions that serve as evidence for the characteristics.

Collaborative

1. Norms that enable effective communication are in place.

Beginning	Developing	Applying	Innovating
-----------	------------	----------	------------

Evidence:

2. When meeting as a learning team, our work together is owned by every member of the team.

Beginning	Developing	Applying	Innovating
-----------	------------	----------	------------

Evidence:

3. Decision making authority is dispersed among individuals.

Beginning	Developing	Applying	Innovating
-----------	------------	----------	------------

Evidence:

4. Diversity of opinion is promoted and evident in our joint work.

Beginning	Developing	Applying	Innovating
-----------	------------	----------	------------

Evidence:

Reflective

5. Routines that encourage and enable individuals to consider and reflect on solutions to their problems of practice are in place.

Beginning	Developing	Applying	Innovating
-----------	------------	----------	------------

Evidence:

6. Group members consistently use data to self-assess and reflect.

Beginning	Developing	Applying	Innovating
-----------	------------	----------	------------

Evidence:

7. Team members are experimenting with new teaching ideas in the classroom and reflecting on how well they are working

Beginning	Developing	Applying	Innovating
-----------	------------	----------	------------

Evidence:

8. Thinking is more intentional and explicit based on reflection.

Beginning	Developing	Applying	Innovating
-----------	------------	----------	------------

Evidence:

Learning Stance

9. Team members not only promote but fully participate in each stage of the Collaborative Inquiry cycle.

Beginning	Developing	Applying	Innovating
-----------	------------	----------	------------

Evidence:

10. Our time together is focused on student learning, professional learning, teaching practice, and/or leading.

Beginning	Developing	Applying	Innovating
-----------	------------	----------	------------

Evidence:

11. Team members are open to new ideas and actively seek new information from relevant sources to help inform next steps.

Beginning	Developing	Applying	Innovating
-----------	------------	----------	------------

Evidence:

12. Team members find value in the process.

Beginning	Developing	Applying	Innovating
-----------	------------	----------	------------

Evidence:

Process Driven by Practice

13. Our work involves examining our own and each other's practice.

Beginning	Developing	Applying	Innovating
-----------	------------	----------	------------

Evidence:

14. We use practice to discover strategies that work.

Beginning	Developing	Applying	Innovating
-----------	------------	----------	------------

Evidence:

15. We draw on outside ideas in relation to how they relate to our situation.

Beginning	Developing	Applying	Innovating
-----------	------------	----------	------------

Evidence:

16. Work is connected to and impacting the work of the professional learning community and wider school improvement efforts.

Beginning	Developing	Applying	Innovating
-----------	------------	----------	------------

Evidence:

Actions Informed by Evidence

17. Analysis of relevant and current data is deemed important and is an ongoing priority for the team.

Beginning	Developing	Applying	Innovating
-----------	------------	----------	------------

Evidence:

18. The team considers teaching practices (in light of student data) and determines approaches that are successful and those that need to be changed.

Beginning	Developing	Applying	Innovating
-----------	------------	----------	------------

Evidence:

19. The team considers multiple sources of evidence to gain a well-rounded picture of their inquiry.

Beginning	Developing	Applying	Innovating
-----------	------------	----------	------------

Evidence:

20. Current student learning data is collaboratively examined and provides a basis for considering next steps for the team's inquiry.

Beginning	Developing	Applying	Innovating
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Evidence:

APPENDIX D

INSTITUTIONAL REVIEW BOARD APPLICATION

Received _____

LOYOLA MARYMOUNT UNIVERSITY

Human Subjects Research

APPLICATION TO THE LMU INSTITUTIONAL REVIEW BOARD (IRB)

Principal Investigator (P.I.): **Alyce Prentice**

Title of Project: **Creating and Maintaining Collaborative Inquiry: A Case Study of a Professional Learning Community at Lennox Charter High School**

P.I. Type: (check one) Faculty Graduate Undergraduate Other

Department: **Doctoral Program**

Campus Address: _____

Telephone: **(213) 500-9541** E-mail: **alyceprentice@gmail.com**

Faculty Sponsor (if applicable): **Franca Dell'Olio**

Submission: New Renewal Addendum Staff Other Previous IRB#:

For evaluation of your project, indicate involvement of any of the following:

- | | |
|---|---|
| <input checked="" type="checkbox"/> Audio Recording of subjects | <input type="checkbox"/> Non-patient volunteers |
| <input type="checkbox"/> Charges incurred by subjects | <input type="checkbox"/> Minor subjects (younger than 18) |
| <input type="checkbox"/> Deception | <input type="checkbox"/> Mentally disabled subjects |
| <input checked="" type="checkbox"/> Questionnaires | <input type="checkbox"/> Subjects to be paid |
| <input type="checkbox"/> Psychology subject pool | <input type="checkbox"/> Fetal tissue |
| <input type="checkbox"/> Charges incurred by subjects | <input type="checkbox"/> Subjects studied off campus |
| <input type="checkbox"/> Experimental drugs | <input type="checkbox"/> Experimental devices |
| <input type="checkbox"/> Establishment of a cell line | <input type="checkbox"/> Surgical pathology tissue |
| <input type="checkbox"/> Placebos | <input type="checkbox"/> Patients as subjects |
|
 | |
| <input checked="" type="checkbox"/> Filming, photographing, video- or voice recording of subjects | |
| <input type="checkbox"/> Data banks, data archives, and/or medical records | |

- Charges incurred by third party carriers
- Approved drugs for “Non-FDA” approved conditions
- Subjects in Armed Services (Active Duty)
- Prisoners, parolees, or incarcerated subjects
- Pregnant women, human fetuses, and neonates
- Sensitive Topics
- Non-English speaking subjects
- Elderly Subject (over 65)

The principal investigator assures the Committee that all procedures performed under the project will be conducted by individuals legally and responsibly entitled to do so and that any deviation from the project (e.g., change in principal investigatorship, subject recruitment procedures, drug dosage, research methodology, etc.) will be submitted to the review committee for approval **prior** to its implementation.

What do you plan to do with the results? Please provide a brief summary statement below:

I will use the results of this research to ascertain the extent to which teachers perceive there is Collaborative Inquiry in the context of a PLC at Lennox Charter High School (pseudonym) and to determine what elements are deemed necessary for creating and maintaining Collaborative Inquiry in the context of a PLC at Lennox Charter High School. This information will help me, as the principal, to work with the staff at Lennox Charter High School to determine next steps for structuring professional collaboration so that it is maximally beneficial.

Are you applying to a federal, state, foundation or any non-LMU organization for funding? If so, please list the source:

NOTE: Applications and any additional material requested by the IRB will not be processed unless **signed personally** by the principal investigator.

Date	Signature of Principal Investigator (Required)	Name (printed)
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Date	Signature of Faculty Sponsor (Required)	Name (printed)
------	---	----------------

Date	Signature of Department Chair (Required)	Name (printed)
Date	IRB Approval (Signature)	Name (printed)
	IRB Approval Number	

Please deliver to Julie Paterson, Sr. IRB Coordinator, University Hall, Suite 1718 or jpaterso@lmu.edu.

LOYOLA MARYMOUNT UNIVERSITY

IRB Application Questionnaire

All materials must be typed.

1. RESEARCH BACKGROUND

Please describe the purpose of your research. Provide relevant background information and briefly state your research question(s). You may provide relevant citations as necessary. (300 Word Max.)

The purpose of my research is to better understand teacher perceptions of professional collaboration at Lennox Charter High School (pseudonym) and teacher perceptions of how to create and maintain Collaborative Inquiry in the context of a Professional Learning Community. Professional collaboration structures are used widely in schools and better understanding them can support teaching and learning. I will use the results of this research to investigate the current nature of professional collaboration and to determine next steps for structuring professional collaboration so that it is maximally beneficial. My research questions are: 1.) To what extent do teachers perceive Collaborative Inquiry embedded in a Professional Learning Community to be present in departmental collaboration time at Lennox Charter High School? 2.) What are the elements deemed most important for Lennox Charter High School to create and maintain Collaborative Inquiry embedded in a Professional Learning Community during departmental collaboration? Results of this research will be used to make observations and recommendations about effective professional collaboration at the school site.

2. SUBJECT RECRUITMENT

How will subjects be selected? What is the sex and age range of the subjects?
Approximately how many subjects will be studied?

How will subjects be contacted? Who will make initial contact with subjects? Specifically, what will subjects be told in initial contact?

If subjects will be screened, describe criteria and procedures.

Each of the 28 teachers at Lennox Charter High School, a small, urban charter high school, will be invited to participate in the study. Subjects will be male and female from 23 to 64 years old.

Subjects will be contacted during a staff meeting and via email. The researcher will make the initial contact with the subjects during a staff meeting. In the initial contact, subjects will be told that they are asked to participate in a study on teacher perceptions of professional collaboration by completing an online survey and participating in interviews and focus groups. They will also be told that participation in the study is voluntary. Additionally, subjects will be told that the results of the surveys, interviews and focus groups will be used by researchers to make observations and recommendations for effective professional collaboration at the school site.

3. PROCEDURES

Summarize fully all procedures to be conducted with human subjects.

Human subjects will be asked to complete an online survey in an email concerning their perceptions of professional collaboration. After having completed the survey, human subjects will receive an email thanking them for completing the survey.

Human subjects will be contacted by email and invited to participate in interviews and focus groups. It will be explained that the purpose of the interviews and focus groups is to better understand teacher perceptions of professional collaboration and how to create and maintain Collaborative Inquiry in the context of a Professional Learning Community. The researcher will conduct an interview with a teacher from each of four phases in the life cycle of a career teacher outlined by Steffy et al. (2000). The four phases are apprentice, professional, expert and distinguished. The *apprentice* phase typically includes the first two or three years of teaching. The *professional* stage emerges as teachers build confidence in their practice and strong rapport with students. *Expert* teachers achieve an excellence in their craft commensurate with national board certification and *distinguished* teachers are truly exceptional practitioners who make their schools and communities better places (Steffy et al., 2000). The researcher will conduct a focus group for each of the phases. There will be four total focus groups and all teachers at that phase of their careers will be invited to participate. After participating in interviews and/or focus groups, human subjects will receive an email thanking them for completing the survey.

4. RISKS / BENEFITS

What are the potential benefits to subjects and/or to others?

What are the reasonably foreseeable risks to the subjects? (Risks may include discomfort, embarrassment, nervousness, invasion of privacy, etc.) If there are potential risks to subjects, how will they be minimized in advance? How will problems be handled if they occur?

Potential benefits to the subjects include an opportunity to reflect on the elements and quality of the professional collaboration at their school site as well as the opportunity to provide input for recommendations on how to design and implement effective professional collaboration within schools.

Reasonably foreseeable risks include anxiety around providing negative feedback about school site professional collaboration and/or concern about how the researcher, who is the principal of the school, will react to negative feedback.

5. CONFIDENTIALITY

Will subjects be identifiable by name or other means? If subjects will be identifiable, explain the procedures that will be used for collecting, processing, and storing data. Who will have access to data? What will be done with the data when the study is completed? If you are collecting visual images of your subjects please justify this.

Subjects will not be identifiable by name or other means. The researcher will be the only person with access to the data. The data will be analyzed in aggregate form but no individual will be identified. The data will be used to assist the researchers in making observations and potentially offering suggestions to other educators. The data will be presented in the researcher's dissertation defense and in the researcher's dissertation.

6. INFORMED CONSENT

Attach an informed consent form or a written request for waiver of an informed consent form. Include waiver of written consent if appropriate. If your research is being conducted in another language, please include copies of the translated "Informed Consent" or "Waiver of Written Consent" forms.

Informed consent form attached.

7. STUDENT RESEARCH

When a student acts as principal investigator, a faculty sponsor signature is required on the application form.

Signature provided.

8. RENEWAL APPLICATIONS

When the submission is a Renewal Application, include a summary of the research activities during the previous granting period specifically addressing: number of subjects studied and any adverse reactions encountered, benefits which have been derived, any difficulty in obtaining subjects or in obtaining informed consent, and approximate number of subjects required to complete the study.

N/A

9. PAYMENTS

If subjects are to be paid in cash, services, or benefits, include the specific amount, degree, and basis of remuneration.

N/A

10. PSYCHOLOGY SUBJECT POOL

When students from the Psychology Subject Pool (PSP) are to be involved as subjects, permission must be obtained from the PSP prior to running subjects.

Forms are available from the Psychology Office in 4700 University Hall. It is not necessary to inform the IRB of approval from the PSP, however the PSP requires IRB approval prior to permission for using the pool being granted.

N/A

11. QUALIFICATIONS AND TRAINING

Describe the qualifications of, or method of training and supervision afforded student experimenters. This includes past experience, type and frequency of student/sponsor interactions during the experiment, and Human Subjects Protections Training.

The researcher is enrolled in a doctoral program at Loyola Marymount University and has completed the majority of the required coursework, including a quantitative and qualitative methods course. This research will be conducted under the supervision of Dr. Franca Dell'Olio.

12. RANDOMIZATION

Describe criteria for assigning subjects to sub-groups such as "control" and "experimental."

N/A

13. USE OF DECEPTION

If the project involves deception, describe the debriefing procedures that will be used.

Include, verbatim, the following statement in the consent form: "Some of the information with which I will be provided may be ambiguous or inaccurate. The investigator will, however, inform me of any inaccuracies following my participation in this study."

N/A

14. QUESTIONNAIRES AND SURVEYS

Include copies of questionnaires or survey instruments with the application (draft form is acceptable).

If not yet developed, please so indicate and provide the Committee with an outline of the general topics that will be covered. Also, when the questionnaire or interview schedule has been compiled, it must be submitted to the Committee for separate review and approval. These instruments must be submitted for approval prior to their use.

Consider your population. If they are foreign speakers, please include copies in the foreign language.

Questionnaire is attached.

15. PHYSICIAN INTERACTIONS

To ensure that all patients receive coordinated care, the principal investigator is obligated to inform the primary physician (when not the principal investigator) of all studies on his/her patients.

N/A

16. SUBJECT SAFETY

Describe provisions, if appropriate, to monitor the research data collected, to ensure continued safety to subjects.

Since survey, interview and focus group questions assess the perceptions of participants, and since the identity and responses of individual participants will not be disclosed, the experiment protects the safety of participants.

17. REDUNDANCY

To minimize risks to subjects, whenever appropriate, use procedures already being performed on the subjects for diagnostic or treatment purposes. Describe provisions.

N/A

18. COUNSELING

In projects dealing with sensitive topics (e.g., depression, abortion, intimate relationships, etc.) appropriate follow-up counseling services must be made available to which subjects might be referred.

The IRB should be notified of these services and how they will be made available to subjects.

N/A

19. SAFEGUARDING IDENTITY

When a research project involves the study of behaviors that are considered criminal or socially deviant (i.e., alcohol or drug use) special care should be taken to protect the identities of participating subjects.

In certain instances, principal investigators may apply for "Confidentiality Certificates" from the Department of Health and Human Services or for "Grants of Confidentiality" from the Department of Justice.

N/A

20. ADVERTISEMENTS

If advertisements for subjects are to be used, attach a copy and identify the medium of display.

N/A

21. FOREIGN RESEARCH

When research takes place in a foreign culture, the investigator must consider the ethical principles of that culture in addition to the principles listed above.

N/A

22. EXEMPTION CATEGORIES (45 CFR 46.101(b) 1-6)

If you believe your study falls into any of the Exemption Categories listed below, please explain which category(ies) you believe it falls into and why.

- 1) Research conducted in established or commonly accepted educational settings, involving normal educational practices, such as (i) research on regular and special instructional strategies, or (ii) research on the effectiveness of or the comparison among instructional techniques, curricula, or classroom management methods.

- 2) Research involving the use of educational tests (cognitive, diagnostic, aptitude, achievement), if information taken from these sources is recorded in such a manner that subjects cannot be identified, directly or through identifiers linked to the subjects.
- 3) Research involving survey or interview procedures, except where all of the following conditions exist: (i) responses are recorded in such a manner that the human subjects can be identified, directly or through identifiers linked to the subjects, (ii) the subject's responses, if they became known outside the research, could reasonably place the subject at risk of criminal or civil liability, or be damaging to the subject's financial standing, employability, or reputation, and (iii) the research deals with sensitive aspects of the subject's own behavior, such as illegal conduct, drug use, sexual behavior, or use of alcohol.

All research involving survey or interview procedures is exempt, without exception, when the respondents are elected or appointed public officials, or candidates for public office.

- 4) Research involving the observation (including observation by participants) of public behavior, except where all of the following conditions exist: (i) observations are recorded in such a manner that the human subjects can be identified, directly or through the identifiers linked to the subjects, (ii) the observations recorded about the individual, if they became known outside the research, could reasonably place the subject at risk of criminal or civil liability, or be damaging to the subject's financial standing, employability, or reputation, and (iii) the research deals with sensitive aspects of the subject's own behavior such as illegal conduct, drug use, sexual behavior, or use of alcohol.
- 5) Research involving the collection or study of existing data, documents, records, pathological specimens, or diagnostic specimens, if these sources are publicly available or if the information is recorded by the investigator in such a manner that subjects cannot be identified, directly or through identifiers linked to the subjects.
- 6) Unless specifically required by statute (and except to the extent specified in paragraph (1)), research and demonstration projects which are conducted by or subject to the approval of the Department of Health and Human Services, and which are designed to study, evaluate, or otherwise examine: (i) programs under the Social Security Act or other public benefit or service programs, (ii) procedures for obtaining benefits or services under those programs, (iii) possible changes in or alternatives to those programs or procedures, or (iv) possible changes in methods or levels of payment for benefits or services under those programs.

Please deliver to: Julie Paterson, IRB Coordinator, University Hall, Suite 1718 or
jpaterso@lmu.edu.

LOYOLA MARYMOUNT UNIVERSITY

Informed Consent Form

Note: This form is only a template and is invalid without information particular to a proposed research study. It is the responsibility of the Principle Investigator (PI) to complete all blanks prior to submission.

Date of Preparation 4/1/15

Loyola Marymount University

Creating and Maintaining Collaborative Inquiry: A Case Study of a PLC at Lennox Charter High School

- 1) I hereby authorize Alyce Prentice, doctoral candidate, to include me in the following research study: Creating and Maintaining Collaborative Inquiry: A Case Study of a PLC at Lennox Charter High School.
- 2) I have been asked to participate on a research project which is designed to measure teacher perceptions of professional collaboration at Lennox Charter High School (pseudonym) and which will last for approximately four months.
- 3) It has been explained to me that the reason for my inclusion in this project is that I am a teacher at Lennox Charter High School.
- 4) I understand that if I am a subject, I will complete a survey that will take approximately fifteen minutes to finish and/or participate in a focus group and/or interview lasting approximately one hour.

The investigator will use survey, interview and focus group responses to make observations and recommendations about school site professional collaboration.

These procedures have been explained to me by Alyce Prentice, doctoral candidate.

- 5) I understand that, if I participate in an interview or focus group, I will be audiotaped in the process of these research procedures. It has been explained to me that these tapes will be used for teaching and/or research purposes only and that my identity will not be disclosed. I have been assured that the tapes will be destroyed after their use in this research project is completed. I understand that I have the right to review the tapes made as part of the study to determine whether they should be edited or erased in whole or in part.
- 6) I understand that the study described above may involve the following risks and/or discomforts: discomfort around providing negative feedback about school site professional collaboration.
- 7) I also understand that the possible benefit of the study is an opportunity to reflect on the elements and quality of the professional collaboration at my school site as well as the opportunity to provide input for recommendations on how to design and implement effective professional collaboration within schools.
- 9) I understand that Alyce Prentice who can be reached at alyce.prentice@animo.org will answer any questions I may have at any time concerning details of the procedures performed as part of this study.
- 10) If the study design or the use of the information is to be changed, I will be so informed and my consent reobtained.
- 11) I understand that I have the right to refuse to participate in, or to withdraw from this research at any time without prejudice.
- 12) I understand that circumstances may arise which might cause the investigator to terminate my participation before the completion of the study.
- 13) I understand that no information that identifies me will be released without my separate consent except as specifically required by law.
- 14) I understand that I have the right to refuse to answer any question that I may not wish to answer.
- 15) I understand that if I have any further questions, comments, or concerns about the study or the informed consent process, I may contact David Hardy, Ph.D. Chair, Institutional Review Board, 1 LMU Drive, Suite 3000, Loyola Marymount University, Los Angeles CA 90045-2659 (310) 258-5465, david.hardy@lmu.edu.
- 16) In signing this consent form, I acknowledge receipt of a copy of the form, and a copy of the "Subject's Bill of Rights".

Subject's Signature _____ Date _____

Witness _____ Date _____

LOYOLA MARYMOUNT UNIVERSITY

Experimental Subjects Bill of Rights

Pursuant to California Health and Safety Code §24172, I understand that I have the following rights as a participant in a research study:

1. I will be informed of the nature and purpose of the experiment.
2. I will be given an explanation of the procedures to be followed in the medical experiment, and any drug or device to be utilized.
3. I will be given a description of any attendant discomforts and risks to be reasonably expected from the study.
4. I will be given an explanation of any benefits to be expected from the study, if applicable.
5. I will be given a disclosure of any appropriate alternative procedures, drugs or devices that might be advantageous and their relative risks and benefits.
6. I will be informed of the avenues of medical treatment, if any, available after the study is completed if complications should arise.
7. I will be given an opportunity to ask any questions concerning the study or the procedures involved.
8. I will be instructed that consent to participate in the research study may be withdrawn at any time and that I may discontinue participation in the study without prejudice to me.
9. I will be given a copy of the signed and dated written consent form.
10. I will be given the opportunity to decide to consent or not to consent to the study without the intervention of any element of force, fraud, deceit, duress, coercion, or undue influence on my decision.

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