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The Role of Professional Learning Communities in Developing and Using Common Formative Assessments

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LOYOLA UNIVERSITY CHICAGO

THE ROLE OF PROFESSIONAL LEARNING COMMUNITIES IN DEVELOPING AND USING COMMON FORMATIVE ASSESSMENTS

A DISSERTATION SUBMITTED TO THE FACULTY OF THE GRADUATE SCHOOL OF EDUCATION IN CANDIDACY FOR THE DEGREE OF DOCTOR OF EDUCATION

PROGRAM IN CURRICULUM AND INSTRUCTION

BY DIANE GMITRO BETTS

CHICAGO, ILLINOIS

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ABSTRACT

The goal of professional learning communities (PLC) is for teachers to come together to discuss and examine student learning and ultimately to make instructional changes that can lead to improved student learning. The formative use of assessments that are commonly agreed upon by this community of teachers is believed to enhance their improvement efforts. This study used a multi-case study qualitative approach to examine how elementary teachers working within a PLC apply the tenets and utilize the structure of DuFour, DuFour, Eaker and Many’s (2006) PLC model to develop and use common formative assessments as a means for improving learning. Information gained from teacher surveys, interviews and observations of PLC meetings revealed that a collaborative culture, a shared vision that focuses on ensuring the learning of all students and a results orientation were the most prevalent tenets that influenced the teams’ work and their ability to use assessments to improve students’ learning. The teams varied in the extent they directly addressed the questions in DuFour et al.’s model but both teams paid considerable attention to a discussion of student learning and which students required extra support. The development and use of common formative assessments was a part of each team’s PLC efforts but teachers also used other information about student learning to determine instructional changes.

Results from this study support the theoretical proposition that the greater the internalization and application of PLC tenets and utilization of guiding questions, the
higher the frequency and effectiveness of a team’s ability to develop and use common assessment results formatively. This study’s findings reinforce current literature and research regarding the importance PLCs and the formative use of assessment data can have on teachers’ efforts to improve their instruction and ultimately their students’ learning.
CHAPTER I
INTRODUCTION

The cry for educational improvement has predominated much of the educational literature for the past 20 years. “Most of the basic underlying assumptions and key ingredients of the teaching and learning process are being examined” (Stiggins & Conklin, 1992). A growing body of research supports the claim that the effectiveness of the classroom teacher can have a significant impact on student learning and achievement (Darling-Hammond, 2000; McCaffrey, Lockwood, Loretz & Hamilton, 2003; Sanders & Rivers, 1996; Wenglinsky, 2002; Wright, Horn & Sanders, 1997) and that it is the daily, classroom level curricular and instructional decisions that teachers make that affect student learning most directly (Joyce & Showers, 2002; Stigler & Hiebert, 1999; Wenglinsky, 2000, 2002). Thus, if we are to improve student learning, we must help teachers improve their instructional practice and the instructional decisions they make on a day-to-day basis.

Strong professional development and support is required to help teachers examine and change their instructional practice and confidently make effective instructional decisions within the increased demands and complexity of teaching the diverse range of students found in classrooms today. Professional development must provide teachers with more than just the typical one shot “sit and get” workshop model of staff development that merely focuses on teachers’ acquisition of new knowledge but fails to
help teachers apply new knowledge in the classroom. Professional development must also break the mold of isolationism in which teachers typically work on their own to determine what to teach, how to teach, how to assess student learning and how to intervene and change instructional practices when necessary. Thankfully, a paradigm shift has been occurring in the last fifteen years regarding both the philosophical framework and structure of professional development (Hawley & Valli, 1999; Sparks & Hirsch, 1997). Broadly speaking, the new paradigm advocates for professional development that is a “shared public process; promotes sustained interaction; emphasizes substantive, school-related issues; relies on internal expertise; expects teachers to be active participants; emphasizes the why as well as how of teaching; articulates a theoretical research base; and anticipates that lasting change will be a slow process” (Collinson, 1996, p. 134).

In response to this new view of professional learning, professional learning communities (PLCs) have emerged as a model that supports the acquisition of new knowledge as well as the actual implementation of new assessment and instructional practices in the classroom through the process of collective inquiry. Richard DuFour, one of the leading authors on the subject, defines a professional learning community as “an organization composed of collaborative teams whose members work interdependently to achieve common goals linked to the purpose of learning for all” (DuFour, DuFour, Eaker & Many, 2006, p. 3). Key features of a professional learning community include a shared vision, a collaborative culture, a focus on learning rather than teaching, collective inquiry, an action orientation, a focus on results, and a mindset
of continuous improvement. While collaboration is essential for a team of teachers to function as a professional learning community, it is the focus on actual results of student learning that distinguishes professional learning communities from other collegial and collaborative groups of teachers that come together to discuss curriculum and instruction (DuFour et al., 2006).

If professional learning communities are to focus on results and not just instructional intentions or practices, then the teachers working in a PLC need access to accurate measures of student learning that are timely and tied to the actual curriculum. Standardized tests cannot provide this information because they often do not measure the actual “taught” curriculum and are administered too infrequently. Even teacher developed end of unit/chapter tests and projects come too late in the learning cycle for a teacher or student to use the information gained from the assessment to make changes. Only formative assessments that are used as learning is occurring rather than at the end of a learning cycle, can provide the critical data that can be used to help teachers and/or students make mid-course corrections (Black & Wiliams, 1998b; Stiggins, 1998).

Experts in the field contend that formative assessment represents one of the most powerful instructional tools available to a teacher or school for advancing achievement levels (Gusky, 2007; Stiggins, 2005; Stiggins & DuFour, 2009; Wiliam, 2007).

We could leave teachers to incorporate formative assessment practices in isolation or we could encourage teachers to work together within the structure of a professional learning community to develop common formative assessments and analyze and use the results to improve instruction and ultimately student learning. Common formative
assessments represent a powerful means for schools to increase the use of formative assessment and use the results to improve learning at a systems level. DuFour, DuFour and Eaker (2004) provide the following definition of common formative assessments and describe how results can be used to improve instruction and ultimately student learning. Common assessments are created collaboratively by a team of teachers responsible for the same grade level or course and administered to all students in that course or grade. They are used frequently throughout the year to identify (1) individual students who need additional time and support for learning, (2) the teaching strategies most effective in helping students acquire the intended knowledge and skills, (3) areas in which students generally are having difficulty achieving the intended standard, and (4) improvement goals for individual teachers and the team. Doug Reeves (2006) further states the purpose of common formative assessments is to provide information for teachers to use in instructional decision-making and to deliberately align powerful instructional and assessment practices. The potential for scaling up the use of formative assessment practices across all teachers in a school and collaboratively using formative assessment at a systems level vs. just the individual teacher classroom level is believed to have profound effects on student achievement (DuFour & Stiggins, 2009: Popham, 2008).

The philosophy, focus, structure and collaborative nature of professional learning communities align well with the goal of increased use of common formative assessments as a means for improving student learning. Many experts believe that the deliberate use of professional learning communities can help schools more effectively develop and utilize common formative assessments, therefore redefining the role of assessment in
school improvement (Ainsworth & Viegut, 2006; DuFour et al., 2006; Stiggins & DuFour, 2009; Wiliam, 2007).

**Purpose of Study**

The purpose of this dissertation study is to examine how teachers working within a professional learning community apply the tenets and utilize the structure of a PLC to develop and use common formative assessments as a means for improving student learning.

**Improvement of Learning Through Assessment**

Assessment plays a vital role in the improvement of student learning. If we are to improve student learning, we must have a way to measure if, how much, and in what areas students are learning, or more importantly not learning.

Assessment has always played a key role in the complex process of teaching and learning and is typically seen as the endpoint coming at the end of a linear process that occurs in the sequential order of plan, teach, assess (Stiggins, 1998). In this model, assessment is used in an evaluative or summative manner to judge how well the learner has done in relation to the intended learning outcomes. At the end of the chapter, unit, or semester, the instructor provides a final judgment, grade or other measurement result to the learner and then instruction typically moves on to the next topic. Assessment used in this way has been the predominant form used for many years.

Beginning with the birth of the first national college admission testing programs (ACT and SAT) in the 1940s, standardized tests with their emphasis on reliability and validity pushed assessment in a different direction. Assessment could now be used to
compare large groups of students. Other commercially available norm-referenced tests began to be used in the 1950s and 1960s followed by state assessments in the 1970s and subsequent national and international assessments. This explosion in the use of commercially developed tests was based on the belief that they provided carefully articulated standards of assessment quality and produced the most accurate scores of student learning possible (Stiggins, 2001). Standardized tests, both norm-referenced and the many statewide criterion-referenced testing programs, have played a major role in the emphasis on accountability witnessed both nationally and globally since the 1980s (Stiggins, 1998). Test scores, are viewed as indicators of the health of educational systems. The passage of the No Child Left Behind (NCLB) legislation in 2001 fortified this viewpoint and has added the dimension of consequences attached to schools that fail to reach predetermined results on state tests. Assessment used in this way is viewed as a driver or stimulus for educational improvement through its heavy reliance on assessment results for public accountability purposes (Stiggins, 1998).

While the perceived value and frequency of administration of standardized tests has grown substantially in the past 25 years, the data from such tests does not indicate these tests have resulted in improved student learning. Data from state tests such as the ISAT, national tests (NAEP) and international tests (TIMMS) reveal limited improvement in student achievement over time (Illinois Interactive Report Card, 2011; National Center for Education Statistics, 2008 & 2009). Standardized tests and end of course assessments are both summative in nature or assessments of learning in that they examine learning as an end product – what students did or did not learn. Summative
assessments alone won’t improve student learning, they merely measure it.

Beginning in the late 1990s, a different view of assessment, known as formative assessment or assessment for learning which examines learning as it is occurring began to be examined as a means for improving student learning. Defined by Black, Harrison, Lee, Marshall and Wiliam (2004) to be “any assessment for which the first priority in its design and practice is to serve the purpose of promoting students’ learning” (p. 2), formative assessment is undertaken to provide feedback to the teacher and/or student that can be used to modify the teaching and learning activities taking place. As such, it differs from summative assessment of learning that is primarily designed to serve the purposes of accountability, ranking, or certifying competence or achievement against established standards.

“The true value of assessment is its ability to help educators make accurate and timely inferences about student progress so that they can modify instruction accordingly” (Ainsworth, 2007, p. 80). This supposedly simple statement is what makes formative assessment such a powerful tool for improving student learning. Formative assessment provides data from which to make decisions and take action while learning is still occurring. Black and Wiliam (1998b) compare the data gained from formative assessment to the data contained in a black box of an airplane. Reeves (2000) makes the analogy of data gained from a formative assessment to the data gained from a physical exam. Both analogies point to the potential to use information about what is currently occurring to make mid-course adjustments. Teachers can use the data they are receiving.
from their students to make adjustments in instruction and provide descriptive feedback that will help students make adjustments in their learning.

Frequent monitoring of student learning is an essential element of effective teaching and good teachers use a variety of formative assessment strategies to check for student understanding. However, while the ongoing assessment of students by individual teachers is a necessary condition for improved learning, combining this practice with the use of common formative assessments creates a powerful synergy for improvement (DuFour et al., 2006). Common formative assessments, as referred to in this study, are a sub-set of formative assessment. As such they fit the definition of assessments for learning and provide information to be used as feedback to modify teaching and learning activities while learning is occurring. What distinguishes them from all types of formative assessments is that they are collaboratively designed, administered, scored and analyzed by a team of teachers responsible for the same curriculum. Experts in the field of assessment and school improvement agree that the creation and use of frequent, common, high-quality formative assessments by teachers who are working collaboratively to help a group of students develop agreed upon knowledge and skills is a powerful strategy for improving student learning (Reeves, 2004; Schmoker, 2003; Stiggins, 2005). According to Ainsworth and Viegut (2006) common formative assessments provide:

- Consistent expectations within a grade level, course, and department regarding standards, instruction, and assessment practices.
- Regular and timely feedback regarding student attainment of the most critical learning standards.
- Multiple-measure assessments that allow students to demonstrate their understanding in a variety of formats.
- Agreed-upon criteria for proficiency to be met within each individual classroom, grade level, and school.
- Deliberate alignment of classroom, school, district, and state assessments to better prepare students for success on state assessments.
- Predictive value as to how students are likely to do on each succeeding assessment in time to make instructional modifications.
- Ongoing collaboration opportunities for grade-level, course, and department teachers.

DuFour et al. (2006) also attests to additional benefits of common formative assessments and believe they:

- Are more efficient than assessments created by individual teachers.
- Are more equitable for students.
- Can determine whether the guaranteed curriculum is being taught and more importantly learned.
- Can inform the practice of individual teachers.
- Can help to build a team’s capacity to improve its program.
- Can help to facilitate a systematic and collective response for students who are struggling.
Improvement of Learning Through Professional Learning Communities

If common formative assessments hold the potential for being “one of the most powerful, high-leverage strategies for improving student learning” (DuFour et al., 2006, p. 55), we must help schools that are dealing with massive amounts of change effectively develop and use common formative assessments to improve student learning? Effective professional development and support is needed to make this a reality.

The professional learning community model as currently described by DuFour et al. (2006) embodies the necessary philosophical tenets and structure to provide the level of professional development and support needed for actual change in teacher practice and ultimately student learning to occur. The answer to why the professional learning community model works can be found in the fundamental principles and tenets of the model.

Collaborative Culture

Working in a professional learning community is a collaborative endeavor that breaks the prevailing isolating “cellular structure” (Lortie, 1975) of most schools in which each teacher assumes responsibility for his or her own learning, and the learning of his or her students. Collaborative teams are used to develop the team’s and the school’s collective capacity to learn and to work together to achieve the fundamental purpose of the school – high levels of learning for all students (DuFour, DuFour & Eaker, 2005).

Learning is not left up to the individual and is not done in isolation. Teachers and leaders learn from one another and thus create momentum for continuous learning and improvement. In order to create the conditions for teachers to learn from one another, it
is essential for the group to build trust in one another and in the professional learning community process.

**Shared Vision and Goals**

In a professional learning community, teachers and leaders alike come together to collectively describe and commit to what they seek to create (DuFour & Eaker, 1998). They develop a shared purpose and pursue a collective goal for their team or school rather than individuals pursuing individual interests and agendas. Teachers working in a PLC discuss and define their views about children and children’s ability to learn and the responsibility of everyone in the school to ensure that all students learn at high levels.

**Focus on Learning**

Ensuring that all students are learning, not simply being taught, distinguishes a professional learning community from other groups of teachers who work together in a collegial manner to discuss instructional practice (DuFour et al., 2006). PLCs establish and maintain a clear and consistent focus on what they want their students to learn as opposed to just focusing on what they will teach.

**Focus on Results**

The continuous quest for improvement is a powerful stimulant in a learning community and is grounded in a clear and consistent focus on evaluating evidence of student learning. Professional learning communities judge their effectiveness on the basis of actual results, rather than intentions or actions and embrace data as an essential tool in their process of collective inquiry (DuFour & Eaker, 1998).
Collective Inquiry and Action Orientation

The process of collective inquiry and reflective dialogue drives the learning process in a PLC. Teachers work together to critically examine and reflect on current reality and to question how they can improve learning for all students. Learning becomes job embedded. The source of professional learning is not generated from just external sources as in the old paradigm of professional development, but comes from within. As DuFour (2004) explains, “the best professional development occurs in the context of the workplace rather than the workshop” (p. 63). Teachers work together to address the issues and challenges in student learning that are relevant to them. Members of a PLC understand that learning always occurs in the context of taking action and that through experimentation (even failed experimentation), new knowledge is gained.

In addition to philosophical tenets that ground the work of PLCs as a means for improving teacher knowledge and practice, DuFour et al.’s (2006) PLC model provides guiding questions that schools can use to structure their work. According to DuFour et al. teachers working in a PLC are guided by four key questions:

1. What do we want students to learn?
2. How will we know when they have learned?
3. How will we respond when some students don’t learn?
4. How will we respond when some students already know?

In a professional learning community, teachers who are responsible for teaching the same grade level or course work together on an ongoing basis to develop curriculum that delineates the essential knowledge and skills each student is expected to learn in a
given unit, period of time, etc. Discussions also focus on the evidence that will be used to determine if learning has occurred resulting in the creation and use of common formative assessments. Teachers in the PLC are all responsible for administering the common assessments and analyzing results together to identify areas of curriculum that need strengthening or more focus; identify strengths and weaknesses in teaching practices; and identify individual or groups of students who need additional support or alternative interventions. Teachers address the third and fourth guiding questions and help each other develop and implement instructional strategies and plans for meeting the learning needs of all students. Teachers then implement these plans, continue to collect and analyze assessment data and adjust their instruction in light of these results. This continuous cycle of improvement can be seen in Figure 1 below. The organizational philosophy and structure of a PLC that promotes this continuous cycle of analysis and refinement is what drives changes in teacher practice and ultimately improvements in student learning (DuFour, 2005; DuFour & Eaker, 1998).

**Theoretical Framework**

The professional learning community model stemmed from organizational change literature in the business world and the capacity of organizations to learn as defined by Senge in *The Fifth Discipline: The Art and Practice of the Learning Organization* (1990). Senge’s concept of a learning organization outlines a comprehensible framework for groups to utilize as they attempt to work together to learn, grow and change. The five disciplines of Senge’s learning organization (Personal Mastery, Mental Models, Shared Vision, Team Learning, and Systems Thinking) are similar in nature to DuFour and
Eaker’s (1998) basic characteristics of a professional learning community: Shared mission, vision and values; Collective inquiry and action orientation; Collaborative teams; Commitment to continuous improvement; and Results orientation.

Figure 1. PLC Continuous Cycle of Improvement

Rick DuFour (1998) took the concept of the learning organization as a model of professional development one step further. He argued that, rather than treating professional development as a distinct and separate entity or area of focus, as has commonly been the case, teacher improvement should be approached as a natural part of teacher work. “Within this model, a school leader addresses teacher improvement
tangentially, encouraging actions such as teacher collaboration, dialogue, and reflection through organizational structures and expectations rather than through formalized and scheduled professional development experiences” (Parry, 2007, p. 3).

Professional learning communities are built on a theory of learning as inquiry and reflect a constructivist theory of learning. “Constructivism recognizes learning as the process of making sense of information and experiences. Learning constructively requires an environment in which learners work collegially and is situated in authentic activities and contexts” (Hord, 2009, p. 41). Professional learning communities take into account the social context of learning and are grounded on the assumption that knowledge is situated in the day-to-day lived experiences of teachers and best understood through critical reflection with others who share the same experience (Vescio, Ross & Adams, 2008). Through collective inquiry, teachers are engaged in authentic learning opportunities that help them examine evidence of student learning and collaboratively develop solutions to real world problems.

The use of formative assessments also fits within a constructivist theory of learning. The concept of formative assessment is built on the central idea that learning is dynamic and can be altered through feedback. Formative assessments provide not only the teacher but also the student with feedback that can be reflected upon and used to accommodate, assimilate or reject current learning in order to construct new ideas, models, and structures that promote further learning.
Overview of Research

Empirical research exists to support the use of formative assessment practices in general and the more specific use of common formative assessment as a means for improving student learning. Likewise, research examining and supporting the use of professional learning communities as an effective model of professional development that leads to improved student learning also exists. What this study will attempt to do that is missing from the educational research field, is examine the relationship between professional learning communities and common formative assessments as a specific means for improving student learning.

Formative Assessments

Two separate but related themes dominate the research connected with formative assessment: the effect formative assessment can have on student learning, and how professional development can be used to promote the use of formative assessment. Use of formative assessment that is designed to promote students’ learning, not merely check it, is believed to benefit student achievement (Black & Wiliam 1998b; Stiggins 2004). In a comprehensive meta-analysis of available research, Black and Wiliam (1998a) found that innovations that include strengthening the practice of formative assessment produce significant and often substantial gains in student learning.

Empirical knowledge examining the effect of common formative assessments on student achievement is just beginning to be gathered and is therefore, more limited. Fisher and Frey’s (2007, 2008, 2009) case studies in schools in the San Diego area revealed improved learning results when common formative assessments were utilized.
In particular, these studies demonstrated positive results when teachers worked collaboratively to develop pacing guides and common formative assessments and then used the data from the assessments to conduct item analysis and develop adjustments to their instruction. They also found that use of a collaborative protocol for developing and using common assessments revealed development of greater depth of understanding of content standards, greater understanding of student thinking and better ability to intervene when students do not understand.

Empirical research studies investigating professional development associated with the use of formative assessment practices is limited. Schneider and Randel (2009) analyzed a number of experimental and quasi-experimental studies involving professional development and the use of formative assessment practices. They found that “professional development must be sustained over time in order to make changes in teacher knowledge and practice” and if not sustained, it will be “unlikely to influence student achievement” (p. 262). Common characteristics of professional development that appear to be linked to improvements in teacher practice include administrative support, individualization of teacher’s learning goals, content knowledge, time, collaboration, coherence and active learning (Schneider & Randel, 2009). This supports previous recommendations from Black, Harrison, Lee, Marshall and Wiliam (2003), Stiggins (1998), and Stiggins and Conklin (1992) regarding professional development aimed at developing and implementing formative assessment practices.

While no quantitative studies exist relating specifically to the professional development needed to promote the development and use of common formative
assessments, insights gained from these previous examinations of formative assessments align well with the fundamental principles inherent in use of professional learning communities as a form of professional development. Ainsworth and Vieght (2006); DuFour et al. (2006); DuFour and Stiggins (2009); and Fisher and Frey (2009, 2007) all advocate the development and use of common formative assessments within professional learning communities. The ongoing, collaborative and active nature of professional learning communities, in theory, should lead to changes in teacher knowledge and practice and ultimately student learning.

**Professional Learning Communities**

An abundance of literature regarding the concept of professional learning communities as a model for effective professional development and learning can be found (DuFour, 2004; DuFour & Eaker, 1998; DuFour, Eaker & DuFour, 2005; Hord, 1998). A majority of the empirical research that has been conducted to date on professional learning communities has primarily focused on the important characteristics of PLCs and their potential impact on student learning. However, if the theoretical tenets that ground PLCs as an effective professional development model are to ultimately make a difference, the fundamental purposes of PLCs (improved teaching and learning) must be directly explored and proven.

Vescio et al. (2006) reviewed empirical research that has been conducted on the impact of PLCs on teaching practice and student learning. Collective results of these studies suggest that well-developed PLCs have positive impact on both teaching practice and student learning. A structured focus on student learning and the development of a
collaborative culture appears to be highly correlated with these positive results. Similar findings were substantiated by Suppovitz and Christman (2003) in their study of learning communities in Cincinnati and Philadelphia. Little research, however, can be found to indicate how PLCs actually work and use the characteristic tenets to improve student learning.

If PLCs are to improve student learning, they must first examine it. Therefore, an essential component of the PLC’s work is the examination of evidence of student learning. Research on how assessment results are used in PLCs is scarce. The coherence and similarity of contextual attributes between formative assessment and professional learning communities was studied by Birenbaum, Kimron, Shilton and Shahaf-Barzilay (2010). Both processes according to these researchers are fundamentally processes of inquiry. The five phases of formative assessment identified by these authors (Planning, Evidence Collection, Interpretations, Utilization, and Evaluation) in many ways parallel the four guiding questions of DuFour et al.’s (2006) PLC model. In the Birenbaum et al. (2010) qualitative study, they examined the qualitative level of a PLC group with how the group perceived and engaged in formative assessment practices and found that more advanced professional learning communities engaged in better quality formative assessment practices. While this study supports the link between use of PLCs and use of formative assessments, it did not examine or decipher the dynamic processes through which assessment practices are constructed and used.

How does a PLC actually operate to construct common formative assessments and use the data to improve instruction and consequently learning is an area that requires
further research. Common formative assessment is a fundamental and crucial component of a PLC’s existence and work (DuFour et al., 2006). It answers the second question in DuFour et al.’s model (How will we know when each student has mastered the essential learning targets?) and therefore guides the subsequent changes in teacher practice that can lead to gains in student achievement. Understanding how groups of teachers apply the tenets and structure of a PLC to actually develop, analyze and use common formative assessment data to guide instructional improvement is essential if we are to help teachers improve student learning.

Relevance of Study

The push for improved student learning is a critical challenge that faces all schools and educators today. In order to face this challenge, schools are examining and working to improve all three domains of student learning: curriculum, instruction and assessment with assessment receiving perhaps the most intense scrutiny. This dissertation study is intended to help educational practitioners who are currently looking for ways to work more collaboratively to improve instruction and ultimately student learning through the examination and use of student assessment results. It brings together several current and important ideas for instructional improvement: use of data-based decision-making, common formative assessment, differentiated instructional interventions in response to data, and professional learning communities.

This study is very timely in light of the Response to Intervention (RTI) initiative now mandated in all schools across our nation. A significant requirement of this initiative is systems or school level assessment of student learning through common benchmark
assessments and progress monitoring. Assessment used for this purpose is based on the belief that frequent assessment of a student’s learning on key skills and concepts must be undertaken and the results used to make decisions regarding the need for additional support or differentiation in a student’s learning.

For the purposes of RTI and the call for improved student achievement to be realized, it is important that common assessments are developed and formatively used that link directly to the essential learning standards students are being expected to obtain. The creation and use of common formative assessments can address this need and support a system’s level use of assessment.

The key to improved learning is through improved instruction. By carefully analyzing how teachers work together collaboratively in a PLC to develop relevant common assessments that provide useful data and then in turn analyze this data and share ideas for instructional adjustments and interventions, powerful insights are gained that can help other educators engage in similar professional development and improvement efforts. This study provides valuable lessons that can help other schools and groups of teachers who are striving to utilize professional learning communities and common formative assessments as a means for improving student learning.

**Research Questions**

The questions that guided this research include:

1. How do the underlying philosophical tenets of a PLC help elementary teachers develop common formative assessments, analyze and then use the results from such assessments as a means for improving student learning?
2. How do elementary teachers use the four guiding questions in DuFour, et al.’s (2006) professional learning community model to develop common formative assessments, analyze their results and use this information to make instructional adjustments that aid student learning.

**Methodology**

Conducting experimental design studies to more fully understand the relationship and perhaps any causal connections between the use of PLCs and the development and use of common formative assessments would be difficult (Schneider & Randel, 2009). A qualitative case study approach that allows the researcher to intensely study the depth and breadth of teachers’ work relating to assessment within a professional learning community provides more insightful and useful information for educational practitioners and researchers alike. Yin (1994) asserts that case studies add to our knowledge related to “individual, organization, social and political phenomena…the case study allows an investigation to retain the holistic and meaningful characteristics of real-life events” (p. 14), including organizational processes. A case study approach was used in this dissertation to learn from the real life experiences of teachers in order to determine if certain factors in the philosophy or structure of the PLC appear to support the development and use of common formative assessments.

This study involved a qualitative multi case study approach that examined two elementary schools that utilize PLCs as a means of continuous improvement and have developed and report to use common formative assessments for the purposes described.
Definition of Terms

Summative Assessment

Summative assessments typically occur after a learning cycle of a particular learning unit or goal has occurred. The evidence gathered from the assessment is used to judge a student’s learning against set standards of performance and competence or against the performance of other students. Summative assessments are typically used to assign grades, rank students or certify competence. End of unit tests, standardized tests, criterion referenced tests and even homework or student learning projects that are used to determine final grades are examples of summative assessments. Opportunities for teachers to use the evidence to adapt current instruction or for students to receive feedback that they can use as their learning is occurring are absent in summative assessments.

Formative Assessment or Assessment for Learning

An assessment can be considered formative if its primary purpose in both its design and use is to serve the purpose of promoting students’ learning (Stiggins, 2004). Formative assessment practices provide feedback to the teacher and the student regarding performance and learning. Observations of students, classroom discussions, student questioning, examination of student work, use of exit slips, quizzes and other tests are examples of potential formative assessment practices. Such assessment practices become formative when the evidence gained is actually used to adapt instruction in order to better meet student needs. Formative assessments occur while the learning of a particular learning goal or target is occurring.
Common Formative Assessment

Common formative assessments are formative assessments that are collaboratively determined or developed by a team of teachers that are responsible for teaching the same grade level or course. Teams administer these assessments to all students in the grade or course and use the results for the purpose of checking, analyzing and responding to student learning of essential pre-determined learning targets. Common formative assessments are used to identify:

- individual students who need more time or support for learning.
- areas in which students are generally having more difficulty achieving the intended objective.
- teaching strategies that prove to be most effective in helping students acquire the intended knowledge or skills.
- instructional improvement goals for the team or an individual teacher.

Professional Learning Community

Professional learning communities are a model for staff development/professional improvement in which the teachers in a school and its administrators come together on an ongoing basis to collaboratively seek and share learning and then act on what they learn. The goal of their actions is to enhance their effectiveness as professionals so that students benefit (SEDL, 2011). Key features of a professional learning community include a collaborative culture, a focus on learning rather than teaching, a focus on results, and a mindset of continuous improvement.
Response to Intervention (RTI)/ Multi-Tiered System of Support (MTSS)

Response to Intervention or a Multi-Tiered System of Support is a method for supporting student learning that integrates assessment and intervention within a multi-level system to maximize student achievement and to reduce behavior problems (National Center on Response to Intervention, 2011). Schools periodically assess all students on key skills, identify students at risk for poor learning outcomes, provide evidence-based interventions, monitor progress and adjust the intensity and nature of those interventions depending on a student’s responsiveness. RTI, as it will be referred to throughout the remainder of this dissertation, utilizes a collaborative problem solving approach to identify student needs, determine appropriate interventions and monitor progress.

Differentiated instruction

Differentiated instruction, according to Carol Ann Tomlinson (as cited by Ellis, Gable, Greg, & Rock, 2008, p. 32), is the process of “ensuring that what a student learns, how he/she learns it, and how the student demonstrates what he/she has learned is a match for that student’s readiness level, interests, and preferred mode of learning.” A teacher uses a variety of assessment techniques both informal and formal to determine a student’s learning needs, strengths, interests, and learning styles and then formatively uses this information to make instructional decisions that will benefit the student’s learning.
CHAPTER II
LITERATURE REVIEW

The review of literature presented in this chapter provides theoretical as well as empirical information on the two related but separate educational themes upon which this dissertation is grounded: (a) professional learning communities as a form of professional development and means for improvement; and (b) the use of formative assessments as a tool for improving student learning. The theoretical framework that ties these constructs together and on which this study is based is reviewed. The literature and research for each theoretical construct is then presented separately followed by a review of what has been theorized and studied about the relationship of how PLCs relate to and help teachers to develop and use common formative assessments.

Theoretical Framework

Both professional learning communities and the use of common formative assessment reflects a constructivist theory of learning. As such, the professional learning of educators as well as student learning is not fixed but rather a dynamic, continuous process in which feedback, social interaction and active engagement play an essential role. According to Murphy (1997), in the constructivist perspective, knowledge is actively constructed by the individual through his interactions with his environment in an attempt to make sense of the world. Hord (2009) elaborates further by stating that “Learning constructively requires an environment in which learners work collegially and
is situated in authentic activities and contexts” (p. 41). Three central ideas regarding learning emerge from a constructivist perspective and can be applied to the professional learning of adults operating in a professional learning community as well as learning of students who work within an instructional environment that utilizes formative assessment practices: (1) Learning as inquiry; (2) Learning as a process of continuous improvement; and (3) Learning as a dynamic social process.

Use of professional learning communities as a means of adult learning differs from more traditional models of professional development that have focused on transferring a fixed set of skills and knowledge regarding effective teaching to teachers in a passive and hierarchal manner. These models are based on the assumption that the goal of professional development is to convey to teachers “knowledge FOR practice” (Cochran-Smith & Lytle, 1999). Knowledge in these models is typically generated and held by university researchers or outside consultants. Teachers passively learn from these outside experts and are then expected to independently implement the knowledge in their classroom. Experts in the study of effective professional development believe that this form of professional development seldom results in actual results or change at the classroom level (Easton, 2005; Fullan, 1991; Hawley & Valli, 1999). The learning experience is disjointed from the day-to-day realities of the classroom, assumes the same instructional answer will apply to all classroom situations; and leaves the teacher, to assimilate and try to apply any new ideas in isolation (Easton, 2005). This form of professional development also fails to reflect the research and growing body of knowledge that has been generated on how and why people learn. “What everyone
appears to want for students – a wide array of learning opportunities that engage students in experiencing, creating, and solving real problems, using their own experiences, and working with others, is for some reason denied to teachers when they are learners” (Lieberman, 1995, p. 591).

Professional learning communities, on the other hand, are built on a theory of learning as inquiry and supports Perkins’ (2004) four “knowledge arts” (creating, communicating, organizing and acting on knowledge). According to Sparks (2005), effective professional development promotes the extension of these knowledge acts to teachers allowing “teachers to create knowledge about teaching and learning, communicate it to one another, organize it within themselves and for others to make it more meaningful and accessible, and act on that knowledge for the purpose of improving student learning” (pp. 9-10). Professional learning communities take into account the social context of learning and are grounded on the assumption that knowledge is situated in the day-to-day lived experiences of teachers and best understood through critical reflection with others who share the same experience (Vescio, Ross & Adams, 2008). Through collective inquiry, teachers are engaged in authentic learning opportunities that help them examine evidence of student learning and collaboratively develop solutions to real world problems. Cochran-Smith and Lytle (1999) describe this as “knowledge OF practice” and stress the active, generative nature of knowledge building inherent in the work of a professional learning community.

The professional learning community model reflects a constructivist theory of learning. “Constructivism recognizes learning as the process of making sense of
information and experiences. Learning constructively requires an environment in which learners work collegially and is situated in authentic activities and contexts” (Hord, 2009, p. 41). The six principles of constructivism identified by Burns, Menchaca, and Dimock (2001) are closely connected to the concepts and dimensions of the professional learning community: (1) Learners bring unique prior knowledge, experience and beliefs to any learning situation; (2) Knowledge is individually constructed through a variety of authentic experiences and contexts; (3) Learning is active and reflective; (4) Learning is a developmental process of accommodation, assimilation or rejection to construct new ideas, models, structures, etc.; (5) Learning involves social interaction and involves reflection, collaboration, negotiation, and shared meaning; and (6) Learning is internally controlled and mediated by the learner.

Likewise, schools that believe in and employ formative assessment practices also view learning from a constructivist perspective. The concept of formative assessment is built on the central idea that learning is dynamic and can be altered through feedback. Assessment provides feedback and serves as a tool for self-analysis and continuous improvement for teachers and students alike. This feedback allows the teacher or student to accommodate, assimilate or reject current teaching or learning practices in order to construct new ideas, models, and structures that promote further learning. According to Roos and Hamilton (2005), the feedback from formative assessment “operates within the learner (where am I?), between learners (where are we?) and between a teacher and a learner (where do you want to go from here?). Assessment is therefore part of the mediation of teaching and learning. Monitoring is reflexive, mutual and reciprocal; and
the resultant internal and external exchanges foster human development” (p. 17).

Similar to Roos and Hamilton, Sheppard (2000) also identifies formative assessment with a constructivist theory of learning. Sheppard suggests that summative assessments fit well within earlier theoretical frameworks in which conceptions of scientific measurement were closely aligned with traditional beliefs about learning within a scientific behaviorist model of schooling. However, in a constructivist paradigm of teaching and learning, assessment practices becomes more student centered (Sheppard, 2000) and become an integral and ongoing aspect of the teaching and learning cycle (Hattie & Jaeger, 1998).

Use of formative assessment and particularly the use of commonly developed formative assessments align with Edward Deming’s theory of continuous improvement (Warwick, 1995) that also is built on a constructivist theory of learning. Teachers working from a theoretical framework of formative assessment frequently seek quality assurance on student learning, carefully analyze this data collaboratively to determine where improvements can be made and then act on this data in an effort to improve student learning. Feedback information is used to construct new knowledge and ideas. The ongoing cycle of continuous improvement embedded in the development and use of common formative assessments follows a similar path as the Plan, Do, Study, Act sequence that is at the core of Deming’s model and closely mirrors the cycle of professional learning that forms the core of collective inquiry in a PLC. Members of a professional learning community work together in a social learning process to analyze data from formative assessments and use such information as powerful feedback
information that can be used to adjust instruction and improve learning.

**Professional Learning Communities**

**Why Professional Learning Matters**

“Good teaching is not an accident” (Mizell, 2010, p. 18). Writing for Learning Forward (formerly the National Staff Development Council), Mizell goes on to say that, “effective teaching is the result of study, reflection, practice and hard work. A teacher can never know enough about how a student learns, what impedes the student’s learning, and how the teacher’s instruction can increase the student’s learning. Professional development is the only means for teachers to gain such knowledge” (p. 18). Stemming from the research of Darling-Hammond (2000), McCaffrey, Lockwood, Loretz and Hamilton (2003), Sanders and Rivers (1996), Wenglinsky (2000, 2002), Joyce and Showers (2002), Wright, Horn and Sanders (1997), professional development is built on the premise that to improve student learning, we must improve teaching practice. Helping teachers to rethink and improve instructional practice is no simple task and necessitates intense, clearly focused and on-going professional learning and work (Wiliam, 2007).

**Key Ingredients of Effective Professional Development**

In order to result in improved student learning in the classroom, professional development should align the needs of the teachers with the needs of their students. Effective professional development enables educators to develop the knowledge and skills they need to address students’ learning needs (Mizell, 2010). But professional development must do more than just help teachers to merely acquire new skills and
knowledge (Vescio et al., 2008) or as Cochran-Smith and Lytle (1999) refer to it as gain knowledge FOR practice. Teachers must be supported in translating new knowledge into actual classroom practice and examining the impact specific instructional practices have on student learning; thereby increasing their knowledge OF practice (Cochran-Smith & Lytle, 1999).

Darling-Hammond and Richardson (2009) posit three key ingredients of high quality professional development: (1) its content must be centered on student learning, (2) its context must be coherently integrated with school improvement, and (3) its design must support active, sustained learning. A fourth key ingredient called for by Hawley and Valli (1999); Little (1999), and the former National Staff Development Council (2001) is a focus on collaborative problem solving and inquiry. Examining these essential ingredients more closely provides insight into why they help to meet the goal of all professional development: improved student learning.

Professional development that focuses on student learning and achievement can have strong positive effects on instructional practice and help teachers develop and refine the pedagogical skills necessary to meet the learning needs of students. Developing deep pedagogical content knowledge necessary to teach the identified curriculum has been found to be a focus of successful professional development efforts (Saxe, Gearheart & Nasir (2001). Another way to conceive of this focus is to analyze what students need to know and be able to do and then work backward to analyze the knowledge, skills and attitudes required of staff members if these student outcomes are to be realized (Sparks & Hirsh, 1997). By enhancing teachers’ knowledge and skills, improving their instructional
strategies, and providing them with the ability to apply and deliver instructional strategies appropriately, schools are providing teachers with the tools they need to help all children succeed in school (Blankenstein et al., 2008).

Professional development, however, cannot stop at just developing pedagogical knowledge. It should also be driven by analyses of the differences between standards for student learning and actual student performance (Hawley & Valli, 1999). By analyzing assessment results, teachers can identify learning needs and strategically change their instructional practice accordingly to get better results (Fullan, 2000). Little’s (2000) investigation of professional development found that even when teachers are learning together collaboratively, a focus on examining achievement results is often lacking.

“Professional development is more effective when schools approach it not in isolation (as in the traditional one-shot workshop) but rather as a coherent part of a school reform effort” (Darling-Hammond & Richardson, 2009, p. 47). Professional development that brings teachers together in a collaborative manner as part of a school wide approach to continuous improvement can improve the knowledge and skills of all staff members, not just a few teachers, so that all students, have access to high-quality instruction (Blankstein et al., 2008; Darling-Hammond & McLaughlin, 1995; Hord, 1997).

The design of professional development must support active, sustained learning for improvements in student learning to occur. Effective professional development promotes active participation and a more constructivist approach to learning (Sparks & Hirsch, 1997). It should also reflect the social context of learning and involve a more
collaborative approach in which teachers work together to make sense of the teaching/learning process incorporating the context of their own classroom into the discussion.

Professional development should be designed to provide learning opportunities that promote professional collaboration, inquiry and discourse (Black et al, 2003; Fullan, 1991; Hawley & Valli, 1999; Little, 1999; NSDC, 2001). Collaboration leads to the sharing of knowledge, breaks down teacher isolation, collectively empowers teachers, develops a shared language and understanding, and promotes a culture of professional respect. The source of professional learning is not generated from just external sources as in the old paradigm of professional development, but comes from within. Teachers work together to address the issues and challenges in student learning that are relevant to them. Darling-Hammond and McLaughlin (1995) advise that the content of this collaborative work should not just be limited to the acquisition of new knowledge and skills but provide opportunities for teachers to reflect critically on their own practice and to create new knowledge and beliefs about content, pedagogy and learners.

**PLCs as an Effective Model of Professional Development**

A PLC is a professional development model that meets these four key ingredients and has been widely supported as making a difference in changing instructional practice and ultimately student learning. PLCs are essentially, as the name implies, a group of professionals learning together. In a PLC, educators work and learn together to improve their professional expertise for the distinct purpose of improving learning outcomes for students. Teachers work together collaboratively and engage in ongoing dialogue to examine their practice and student performance and to develop and implement more
effective instructional practices (Darling-Hammond & Richardson, 2009). A backwards design process is used that first asks teachers to identify the desired learning outcomes for students, which then drives what learning teachers need to undertake in order to produce these desired student outcomes (Hord & Sommers, 2008). In addition to discussing the instructional strategies necessary to produce the desired learning, teachers collaboratively discuss and define what successful learning looks like and the assessment that will be used to measure whether learning has occurred. During subsequent professional learning meetings, teachers collaboratively examine the actual results of student learning to examine strengths and weaknesses of instruction and plan follow up steps for re-teaching and differentiation (DuFour et al., 2006).

Mike Schmoker (2004) cites that “a broad, even remarkable concurrence” of educational researchers and organizational theorists have concluded that developing the capacity of educators to function as members of professional learning communities is the “best known means by which we might achieve truly historic, wide-scale improvements in teaching and learning” (p. 432). A number of educational organizations also support professional learning communities as a powerful form of professional development and school improvement: National Commission on Teaching and America’s Future (2003); National Board for Professional Teaching Standards (2004); National Association of Elementary School Principals (2002); National Association of Secondary School Principals (2004); and the National Staff Development Council (2004).

Understanding the philosophical tenets on which a PLC is based helps to explain why this model offers such powerful potential for improving student learning. These
tenets typically are applied and demonstrated as identified characteristics of PLCs. DuFour and Eaker (1998) identified six characteristics of professional learning communities: (1) Shared mission, vision and values; (2) Collaborative teams; (3) Collective inquiry; (4) Action orientation and experimentation; (5) Continuous improvement and (6) Results orientation. In later years, DuFour et al. (2006) more clearly defined the mission of all PLCs is a focus on and a commitment to the learning of each student. Shirley Hord, a researcher involved in studying professional learning communities, identified five components that help to describe PLCs: (1) Shared beliefs, values and vision; (2) Shared and supportive leadership; (3) Collective learning; (4) Supportive conditions and (5) Shared personal practice (Hord, 2004; Hord & Sommers, 2008). While several of Hord’s characteristics focus more on the organizational requirements necessary for PLCs to develop and be sustained, several characteristics are mutually identified by numerous experts in the field and provide the theoretical reasons why PLCs are an effective model of professional development for improving instructional practices and ultimately student learning.

**Focus on student learning and results.** First and foremost, a professional learning community is based on the belief that the mission of all schools is not to ensure that students have been taught but to ensure that students learn (DuFour, 2005). It is the focus on actual results of student learning that distinguishes professional learning communities from other collegial and collaborative groups of teachers that come together to discuss curriculum and instruction (DuFour et al., 2006).

In a PLC, faculty members have access to a wide array of student performance
data to assess the productivity of teaching, as well as to indicate the needs of students (Blankstein et al., 2008). As members of the PLC, teachers are given the opportunity to reflect upon the effectiveness of their practices and current programs in relation to student outcomes, to determine how well students are being served, and to identify student achievement areas in need of improvement (Blankstein et al., 2008). True PLCs employ a cyclical process in which teachers adjust instruction and share best practices based on student achievement and, conversely, develop interventions when students are not demonstrating achievement (O’Donovan, 2007).

**Development of shared vision and goals.** “The PLC concept is specifically designed to develop the collective capacity of a staff to work together to achieve the fundamental purpose of the school: high levels of learning for all students” (Schmoker, 2005, p. 18). This construct is also supported by Blankenstein et al. (2008) who believe a PLC offers a significant staff development and school improvement approach that contributes to whole-school improvement and increased effectiveness. Newmann and his associates (1996) found that increasing the knowledge and skills of individual teachers was not sufficient to foster sustained school improvement. They believe we need to increase the capacity of the entire school by placing issues of teaching and learning at the center of the dialogue among the school community. As the community comes together they collectively describe and commit to a shared vision and improvement goals for their team or school. In Hord’s (2004) synthesis of research literature on PLCs, she found that the development of shared values, vision and goals was a recurring component of the work of PLCs in schools that realized improved student learning.
Collaborative culture. DuFour et al. (2004) proposed that “people who engage in collaborative team learning are able to learn from one another and thus create momentum to fuel continued improvement” (p. 3). By establishing a culture of collaboration and collective learning, which is aimed at a common goal, schools are able to create a structure conducive to developing and sustaining a PLC. In a number of qualitative studies that have examined PLCs, professional collaboration and the sense of support that is derived from it is often one of the strongest themes to emerge from the data (Bolman, et al., 2005; Parry, 2007). Successful collaborative efforts encourage sharing, reflecting, and taking the risks necessary to change. Louis and Marks’ (1998) research demonstrated that effective PLCs included both collaborative activity and deprivatization of practice.

Collective inquiry and action orientation. “The engine of improvement, growth and renewal in a professional learning community is collective inquiry” (DuFour & Eaker, 1998, p. 25). According to Blankstein et al. (2008), “Staff learning occurs more deeply and richly in interactions and conversations in which staff members pursue intentional learning, share new knowledge, test ideas, ask questions, gain clarification, debate conclusions, and seek consensus on how to transfer new learning into practice” (p. 27). Ross, Smith and Roberts (1994) refer to the process of collective inquiry as the “team learning wheel” and identify fours steps in this cyclical process: public reflection, shared meaning, joint planning and coordinated action.

Teachers working collaboratively in PLCs share ideas and learn from one another to determine the most appropriate instructional path to take at any given time with any
given group of students. While PLCs offer suggestions, there is no single best response teachers should take in every circumstance. According to Marzano (2007), known for his work with research-based instructional practices, “No amount of further research will provide an airtight model of instruction. There are simply too many variations, types of content, and types of students encountered across the K-12 continuum” (p. 4). Marzano claimed schools and teachers must determine which strategies to employ with the right students at the right time, making teaching as much an art as a science. By working together in collaborative learning communities, schools are able to increase both their knowledge base and their chance of striking a balance between the art and the science of teaching that works in their schools, with their students, with their staff, and within their communities.

PLCs work not only due to the underlying philosophical tenets on which they are grounded, but also because of the structure they provide to teachers’ collaborative work. Barlow (2005) stated, “The right kind of continuous, structured teacher collaboration improves the quality of teaching and pays big, often immediate, dividends in student learning and professional morale in virtually any setting. Our experience with schools across the nation bears this out unequivocally” (p. 76). As Barlow’s comment suggests, providing teachers with structured opportunities to collaborate with one another improves the quality of teaching in the classroom and promotes student learning. DuFour et al.’s (2006) four guiding questions, previously identified in Chapter I, provide a structured focus for teacher’s collective inquiry and collaborative work. This structure along with the application of the philosophical characteristics of PLCs should, in theory, promote a
continuous cycle of analysis and drive changes in teacher practice and ultimately improvement in student learning.

**PLC’s Impact on Teaching**

Numerous educational professionals claim that PLCs offer promising implications for improving the practices and profession of teaching (DuFour et al., 2004, 2006; Hord, 1997; Hord & Sommers, 2008; McLaughlin, 1993; McLaughlin & Talbert, 1993; Vescio, Ross & Adams, 2008; Mizell, 2010). Their claims are based on the contention that a collective and collaborative approach that focuses on improving the learning of both adults and students through an intense examination of learning goals, instructional practices and actual results can lead to real changes in teaching practices.

Shirley Hord is one of the leading authorities on PLCs, their characteristics and how they impact change in teachers’ practice and consequently student learning. In a 1997 study, Hord found that organized PLCs resulted in the following improved outcomes for teachers:

- reduced teacher isolation
- increased commitment and vigor to strengthen the school’s mission and goals
- creation of new and powerful knowledge concerning the definition of teaching and learning
- increased meaning and understanding of the teacher’s role in student achievement
- increased understanding of content and the vertical progression of skills and concepts
• stimulation of professional renewal and desire to inspire students
• development of a collective responsibility for students’ success
• significant advances in efforts to accommodate students
• higher morale and job satisfaction, lower absenteeism rates
• commitment to making major and ongoing changes
• higher probability of fundamental, systematic change.

Using Hord’s findings as organizing themes outlining the benefits of PLCs on teacher practice, the specific conclusions from other studies which support Hord’s findings are discussed. Much of this discussion stems from ten American studies and one English study that examined the impact of PLCs on teaching practices and student learning. These empirical studies were analyzed by Vescio, Ross and Adams (2008) and found to collectively support the positive impact well-developed PLCs can have on teaching practice.

**Collaboration reduces teacher isolationism and increases teacher morale.**

Teachers who work as PLCs experience an increase in collaboration and a deprivatization of practice. Teachers are willing to share experiences and ideas, reflect on challenges and instructional decisions and take risks, (Louis & Marks, 1998). Teams working as PLCs use agreed upon protocols for decision making and systematic note taking to keep all participants informed (Berry et al. 2005). Phillips (2003) found that teachers in PLCs are more willing to observe fellow teachers and be observed, review video-taped lessons, participate in literature study groups, discuss instructional challenges and problems and generate ideas for addressing these problems. These types of collaborative practices can
increase teacher morale. In a comprehensive study of 393 schools and in depth case study of 16 schools, Bolman et al. (2005) revealed a positive impact on teaching practice and morale as a result of participation in collaborative activities. Middle school teachers in Parry’s (2007) research investigating the impact of a PLC in a first year middle school revealed that all grade levels reported higher levels of professional collaboration and feelings of being supported. The level and sense of team “community” appeared to play a significant role in the level of teacher improvement documented at each grade level. “This type of change in teacher culture, which has traditionally been described as isolationist, seems likely to lead to fundamental shifts in the way that teachers approach their work” (Vescio et al., p. 85).

**Increased commitment and vigor to strengthen the school’s mission and goals.** Lee, Smith, and Croninger (1995) found that organizing schools communally promoted a learning environment where staff and students were committed to the school’s vision and were willing to work together to achieve that vision. Englert and Tarrant (1995), Suppovitz (2002), and Bolman et al. (2005) all found that teachers felt more involved in school related decisions as a result of working in a PLC. Strahan’s (2003) case study of an elementary school’s emergence as a PLC, illustrated the change process the school underwent that resulted in development of a shared vision and values, stronger instructional norms and an increased willingness to change instructional practices.

**Increased understanding of content and the vertical progression of skills and concepts.** Hord and Sommers (2008) believe that teachers working in PLCs “engage in
powerful learning that adds to their knowledge base and repertoire of technical skills that increases their effectiveness” (p. 19). Explaining this further, they contend that teachers gain a deeper understanding of curriculum and their specific content area and the sequencing of skills and knowledge across the grade levels. McLaughlin and Talbert (1993) report that “through the learning community, teachers learn how to translate enhanced curricula and higher standards into teaching and learning for all students” (p. 5).

**Increased meaning and understanding of the teacher’s role in student achievement.** In most empirical studies centering on the use of PLCs, teachers collaboratively determined a focus for their professional work and efforts (Berry et al., 2005; Bolam et al., 2005; Dunne et al., 2000; Englert & Tarrant, 1995; Hollins et al., 2004; Louis & Marks, 1998; Phillips, 2003; Strahan, 2003; Supovitz, 2002; Supovitz & Christman, 2003). This focus often comes from an analysis of student learning data and gaps between desired outcomes and current reality (Hord & Sommers, 2008). Bolman et al. (2005) found that “in effective PLCs, the pupil learning was the foremost concern” (p. 146) and more developed PLCs had stronger linkages between student achievement and teachers’ professional learning. Suppovitz (2002) and Suppovitz and Christman’s (2003) studies demonstrated that teams that focused on instructional practice reported changes in instructional culture providing further support for the importance of PLCs persistently pursuing an instructional focus. In Hipp et al.’s (2008) more recent qualitative case study, the researchers found that change that impacts learning must focus on instructional practice. Additionally, the study found that faculty members’ attitudes
and beliefs are more apt to change when they saw the changes in practice begin to impact student learning.

Changes in instructional strategies teachers are willing to try evolve as part of their participation in a PLC and the carefully guided instructional focus area teachers choose to concentrate on. Hollins, McIntyre, DeBose, Hollins and Towner (2004) found that the focus of meetings changed from previously discussing difficulties in teaching low achieving African-American students to conversations about specific instructional strategies and ideas for language arts instruction. Teachers in the elementary school Strahan (2003) studied also were more willing to work with a facilitator to change practices in reading and writing instruction as a result of their participation in a PLC. In Louis and Marks’ (1998) mixed method study looking at eight elementary, eight middle schools and eight high schools involved in restructuring, they concluded that the PLC contributes to higher levels of social support for achievement and higher levels of authentic pedagogy (emphasis on higher order thinking, knowledge beyond the classroom, developing meaning through conversation). Parry’s (2007) research investigating the PLC’s impact in a first year middle school revealed relatively high levels of change in teacher knowledge and skills as measured by Garet et al.’s (1999) Teacher Activity Survey (3.7 on a 5.0 scale; National average = 3.19) and moderate levels of changes in teacher practice (2.0 on a 3.0 scale; National average = 1.27). Higher scores were obtained in the grade levels where collaboration focused on curricular and instructional issues in addition to administrative issues (discipline, grading, etc.).
Collective responsibility for students’ success and significant advances in efforts to accommodate students. Teachers working collaboratively in a PLC demonstrate a stronger commitment and sense of collective responsibility to help all students learn and are more likely to adapt their teaching practices to meet the needs of a given student or group of students (Hord & Sommers, 2008). Hord’s (1997) research also found that teachers belonging to PLCs were able to make effective teaching adaptations for their students. In a study investigating a school that used a Critical Friends approach to their PLC work, Dunne, Nave and Lewis (2000) observed that teaching practice become more student centered. Teachers were more likely to use different pacing to accommodate varying levels of student mastery and to demonstrate more flexibility with classroom instructional arrangements.

The findings from Maynor’s (2010) dissertation study of two elementary schools further support the impact of PLCs on improved instruction and student learning. By increasing sharing and collaboration, allowing data to drive instruction, focusing on student success, encouraging increased student participation, offering research-based instruction, and differentiating instruction, teachers at both schools in this qualitative case study felt the development and perpetuation of the schools’ PLCs have significantly improved the quality of instruction and increased student learning.

While the complexity and contextual background of each school site investigated in these research studies is different and plays an important role in their improvement efforts, the recurring conclusion gained from these studies indicate the existence of PLCs
in these schools did in fact impact the instructional culture of the school and teaching practices of its teachers.

**PLCs’ Impact on Student Learning**

The research also indicates that PLCs offer considerable potential to impact student achievement and to help all students succeed (Blankstein et al., 2008; Hord & Sommers, 2008). The persistent focus on student learning and actual achievement is what is believed responsible for learning improvement to occur.

In the 11 studies of PLCs that Vescio et al. (2008) reviewed, eight attempted to study the impact of PLCs on student achievement. All eight studies (Berry, et al., 2005; Bolam et al., 2005; Hollins et al., 2004; Louis & Marks, 1998; Phillips, 2003; Strahan, 2003; Supovitz, 2002; Supovitz & Christman, 2003) found that student learning improved as a result of the school’s implementation of a PLC. Berry et al. (2005) studied a rural elementary school’s progression over a four year period of time. Prior to becoming a professional learning community, the school only had 50% of its students achieving at or above grade level. This level had grown to 80% of students at grade level four years into implementation of PLCs. In a similar study involving a middle school committed to becoming a learning community, Phillips (2003) found that achievement scores for low and underachieving students increased dramatically over a three-year period. Overall, the school went from 50% of its students passing subject area standardized tests to over 90% passing each subject area test. A PLC’s impact on underperforming schools achievement was also demonstrated in Strahan’s (2003) case study of three struggling elementary schools. Over a three-year period, student
achievement rose from 50% proficiency on state achievement tests to over 75% proficiency.

While these studies only examined the achievement gains of schools involved in the implementation of becoming a PLC, Hollins et al. (2004) analyzed achievement for schools within the same district, one of which was focused on incorporating a professional learning community into their professional culture. For this target school, student achievement increased significantly in comparison to comparable students in the district; the percentage of target school students who scored above the 25th percentile grew from 45% to 73% two years later. This 28% overall gain compares to a 12% gain for non-target school students. This comparative data between a PLC school and a non-PLC school lends support to the belief that when a school purposefully focuses on raising student achievement through collaborative professional efforts, significant academic gains actually occur.

This claim is further substantiated by Bolman et al.’s (2005) large scale study in England of both primary and secondary schools. The researchers compared PLC characteristics of schools (as reported in school surveys) with student outcome data on a national assessment and found a significant link between the strength of a schools’ demonstration of PLC characteristics and improved student achievement. “The greater the extent of reported staff involvement in professional and pupil learning, the higher was the level of pupil performance and progress in both primary and secondary schools” (p. 132). Louis and Marks (1998), Supovitz (2002) and Supovitz and Christman (2003) also found a correlation between the strength of the teacher learning community and the
gains in student achievement. Louis and Marks’ study (1998) claimed that the strength of the PLC accounted for 85% of the variance in achievement. Both studies conducted by Supovitz (2002) and Supovitz and Christman (2003) found that those communities that engage in structured work and conversations regarding instructional practice and student work produced significant student learning gains. Similar gains were not found in communities where teachers worked together but did not engage in structured work focused on student learning.

Vescio et al. (2008) concluded in their analysis that while limited in number, these studies support the assumption that student learning increases when teachers participate in PLCs. A deeper analysis of these studies reveals that a common feature of the teachers working together was a persistent focus on student learning and achievement (Vescio et al., 2008). Those that focused on how best to meet student needs did realize larger student gains. Lee, Smith, and Croninger’s (1995) study of 820 secondary schools and 11,000 students conducted by the Center on Organization and Restructuring of Schools, also points to this connection between a focus on instructional practice and growth in student learning. Their research demonstrated that in schools characterized by PLCs, where faculty worked together to change their classroom pedagogy, students achieved greater gains in math, science, history, and reading than students in traditionally organized schools. In a review of the case studies in The Work of Restructuring Schools, Darling-Hammond (1995) also found that schools that focused their efforts on teaching, learning, and discussing the effectiveness of instructional practices for students showed academic results more quickly than schools that did not. Similarly, Schmoker’s (2001)
research concerning school practices and procedures that make a difference yielded three key elements: First, teachers aimed their efforts explicitly at the achievement of measurable learning goals. Second, they worked in teams to reach their goals. Teachers talked to one another about their work, got together regularly to analyze successes and failures, shared materials, and refined their instruction. Third, teachers made regular use of achievement data to identify and address areas of concern. Teacher teams routinely assessed student progress to target deficiencies and identify strengths.

Other research studies support the premise that incorporating a focus on results through analysis of student achievement data is linked to more significant increases in student learning. In the Berry et al. (2005) study, teachers worked in professional learning teams to develop instructional strategies that were based on student data resulting in consistent improvement for students. Hollins et al. (2004) study looked at schools that were intently focused on raising the literacy level for African-American students and carefully examining achievement data to guide their work. The three elementary schools studied by Strahan (2003) also demonstrated collaborative efforts to consistently engage in data-driven dialogue. In Phillips’ (2003) case study analysis of a middle school, teachers analyzed data to help identify both cognitive and affective needs of their students. These studies support the premise that using data to better meet the needs of students is a component of successful PLCs who realize gains in student achievement. Vescio et al. (2008) concluded, “an intense focus on student learning and achievement was the aspect of learning communities that impacted student learning” (p. 88).
Another element of PLCs that might impact gains in student achievement is shared vision and leadership. Lee and Smith’s (1995) longitudinal study of 11,794 sophomores in 830 high schools found that schools in which there is shared vision and leadership, or “communally organized schools” as defined by the study’s authors, more equitable learning is realized than in bureaucratically organized schools. Marks and Louis (1998) found teacher empowerment to be an important factor in changing teachers’ instructional practices. When teachers were empowered to support instructional changes and to share information with colleagues concerning effective teaching practices, student achievement improved. The findings suggested that while teacher empowerment supports student achievement, teachers must believe the potential for improving student achievement exists and must have the necessary conditions in place to support these changes. While the research did not specifically name this type of teacher empowerment as a PLC, as this term was not commonly accepted until Hord’s work in 1997, the findings certainly point to the potential of collaborative communities to provide the necessary conditions to support teacher empowerment, improved instruction, and student achievement.

In addition to academic achievement gains, Hord (1997) determined that organized PLCs resulted in the following positive outcomes for students:

- lower “class cutting” and dropout rates
- fewer incidents of absenteeism
- more equitable learning in smaller high schools
- smaller achievement gaps between different subgroups
These types of benefits were also seen in Lee et al.’s (1995) research which found that schools that are communally organized around PLCs and whose staff and students are committed to the common mission of the school have students who drop out of school less frequently, cut fewer classes, and post lower absenteeism rates than students in more traditionally organized school settings.

Conclusions and Future Research

The theoretical and empirical literature reviewed here reveal that PLCs, with their underlying purpose stemming from a belief in a shared vision of learning for all students, collective inquiry to guide continuous improvement efforts, and structured teacher collaboration to accomplish this task provide one of the most effective professional development practices that experts agree can lead to improved student learning (Barlow, 2005; Blankstein et al., 2008; DuFour et al., 1998, 2004, 2006; Hord, 2004; Hord & Sommers, 2008; Schmoker, 2005). Additional research is needed however, to help schools more fully understand how PLCs operate to bring about these changes. Vescio et al. (2008) note that additional research is needed that goes beyond examining teacher perceptions of the value of PLCs. In particular, they believe that studies are needed that more directly quantitatively and qualitatively explore the longitudinal impact of PLCs on teaching practices, as well as studies that qualitatively analyze the nature of the work teachers do as they analyze student work. This dissertation study was designed to address this second need and focused on exactly how teachers working collaboratively within a PLC use common assessments to make instructional decisions regarding teaching practices in order to ultimately improve student learning.
Formative Assessment

Assessment has always played an essential role in the complex process of teaching and learning. Typically, assessment has been seen as an endpoint coming at the end of a linear process of plan, teach, and assess (Stiggins, 1998). In this model, assessment is used to judge how well a learner has done in relation to the intended objectives. What happens next in the teaching and learning cycle is what distinguishes formative assessment from summative assessment. If viewed only as an endpoint and used in an evaluative manner to provide a final judgment, grade or other measurement result to the learner and then instruction moves on to the next topic, the assessment is being used in a summative manner. If however, the educator and student use the information gained from the assessment not as an endpoint, but as check for understanding along the way AND the teacher and/or student uses the information to alter instruction and learning, then the assessment is being used in a formative manner (Black & William, 1998b; Stiggins, 1998, 2001).

Balanced System of Assessments

Stiggins and DuFour (2009) delineate between different levels and purposes of assessment use. They as well as other assessment experts believe that what is needed is a balanced system of assessment that includes classroom level, school level, and institutional level assessments that are used for both formative as well as summative purposes (Stiggins, 2007; Stiggins, Arter, Chappuis & Chappuis, 2004). Classroom level assessments include those minute by minute, day-by-day formative assessment practices that individual teachers use to continuously monitor and adjust instruction. These
assessments provide teachers, students, and sometimes parents information about where a student is in the learning process and how to scaffold up the learning progression in order to reach a learning standard. Assessments at this level may be designed and used by individual teachers working autonomously but they can also be developed and used commonly across classrooms (Stiggins & DuFour, 2009). School level assessments or often times referred to as common assessments can be either formative or summative in nature. They differ from formative classroom assessments in that groups of teachers identify what specific learning goals needs to be assessed, determine what assessment measure should be developed or used to assess these goals, develop benchmark levels of desired performance, all administer the same assessment and collaboratively examine results for all students. Common assessments provide periodic, but frequent, evidence of learning that is comparable across classrooms. This evidence helps the team of teachers to identify specific curricular areas that need attention because many students are struggling. It can also clarify strengths and/or weaknesses in an individual teachers’ instruction as compared to others on the team and create a forum for teachers to learn from one another (Stiggins & DuFour, 2009). This common evidence can also identify students who need timely and systematic interventions. Institutional level assessments refer to the summative measures such as state mandated tests, norm or criterion referenced standardized tests, or other assessments that are administered to all students to analyze overall student performance or the effectiveness of curriculum and instructional programs. Information from such assessments provides evidence of which students are meeting required standards (Stiggins & DuFour, 2009).
Stiggins and DuFour (2009) posit that each of these three levels of assessment (classroom, school, or institutional) can be used formatively or summatively; it all depends on how the results from the assessment are used. Classroom assessments can be used to grade and sort students rather than as informational data that can be used to guide the teacher and/or student regarding next steps in the learning process. Benchmark assessments that are used commonly across a grade or school can also be used in a summative manner to judge whether a student has reached a standard but fail to be used to make changes in teaching that will lead to greater student learning. Chappuis and Chappuis (2007) and Popham (2006) caution that in today’s culture of assessment and accountability, many publishers as well as teachers will mistakenly believe that frequent testing of student achievement is in and of itself “formative” and therefore beneficial in increasing student achievement. And while standardized tests are most often used for summative purposes, Black et al. (2003) and Stiggins and DuFour (2009) acknowledge that results from standardized tests can be used formatively to identify students in need of additional support and/or instructional areas in need of improvement. All experts agree, it is how the results are acted upon that distinguishes formative from summative assessment.

What is called for in order to realize profound improvements in student achievement is a coupling of summative assessment measures with powerful in class formative assessment practices and common formative assessments used at the school level (Ainsworth & Veight, 2006). Summative assessments of learning check to see if students are meeting standards, formative assessments for learning at the class or school
level ask if students are making progress toward meeting those standards. “One is for accountability, while the other is used to support learning. ….Both are important, but they are different because they serve fundamentally different purposes. The key to our collective success as educators is to balance the two – to find the synergy between them” (Stiggins, 2007, p. 70).

**Definition and Essential Components of Formative Assessment**

British researchers Black and Wiliam are typically credited with the concept of labeling and promoting the use of formative assessment to improve student learning. They define formative assessment to be “any assessment for which the first priority in its design and practice is to serve the purpose of promoting students’ learning” (Black et al., 2004, p. 2). They contend that formative assessment is undertaken to provide feedback to the teacher and/or the student that can be used to modify the teaching and learning activities taking place. Thus, formative assessment is a constructivist form of learning that promotes inquiry and planned response.

The benefits of formative assessment were described in both an article in the *Kappan* journal (Black & Wiliam, 1998b) and a research review (Black & William, 1998a) that provided a meta-analysis of research studies involving formative classroom assessment practices. This research is discussed later in the chapter. Whether formative assessment helps student learning at the classroom level or whether it has potential to dramatically increase scores on standardized tests has been debated, but most formative assessment proponents believe it can have a positive effect on both classroom performance and high stakes accountability measures (Popham, 2008).
The State Collaborative on Assessment and Student Standards that deals exclusively with formative assessment known as Formative Assessment for Students and Teachers (FAST SCASS) defines formative assessment as “a process used by teachers and students during instruction that provides feedback to adjust ongoing teaching and learning to improve students’ achievement of intended learning outcomes” (Popham, 2008, p. 5). Two key features noted in this definition are (1) that formative assessment is a process, not any particular test, and (2) formative assessment takes place during instruction. Popham (2008) further delineates the process of formative assessment as a planned process involving a number of activities, including the use of formal and informal assessments to elicit evidence regarding the degree to which a student has mastered a particular skill or concept. Teachers use this evidence to adjust their instruction.

The use of formative assessment information to make instructional adjustments is what distinguishes an assessment as formative. Guskey (2008) cautions, however, that the adjusted response must be more than just re-teaching and should include three essential characteristics. First, concepts must be presented differently using either a change in format, organization or method of presentation. Second, student involvement in the learning task must involve a different learning style, modality, etc. And third, the student must experience success with the corrective action or it should be abandoned and another instructional intervention attempted. In essence, teachers must know and utilize a variety of effective differentiated instructional techniques to ensure all students learn.

In addition to using assessment results to adjust instruction, the process of
formative assessment calls for changes in instructional pedagogy and the manner in which students are engaged in learning. Black et al. (2003) found in a study conducted with English secondary teachers, that changes in teachers’ thinking and classroom practice included:

- A greater emphasis on student learning vs. curriculum coverage
- Establishment of clearer learning goals and a deeper understanding of the “big picture” of any given subject matter
- Increased attention to the learning needs of all students
- A shift from thinking of themselves as the one in control of students’ learning to a belief in shared responsibility for learning
- A decreased belief in fixed levels of student ability and deeper understanding of the role effort and motivation play in student learning
- A greater emphasis on collaborative learning structures and less emphasis on competition
- A greater emphasis on higher level thinking skills and classroom discussions

**Common Formative Assessments**

Much of the literature and research on formative assessment deals with individual classroom teacher use of formative assessment. Many assessment experts believe the potential for scaling up the use of formative assessment practices across all teachers in a school and collaboratively using formative assessment at a systems level vs. an individual teacher classroom level could have profound effects on student achievement (Ainsworth & Viegut, 2006; DuFour et al., 2006; Fisher & Frey, 2007, 2009, Wiliam, 2007).
Popham (2008) identifies this level of implementation as a Level 4 use of formative assessment and believes that a well implemented systems level use of formative assessment can result in “more students being better educated” (p. 120). Having more teachers use formative assessment practices can be accomplished in two ways: (1) Providing professional development for all teachers on formative assessment and encouraging or expecting teachers to assimilate these ideas into their own classroom assessment practices; and (2) Providing professional development on formative assessment and encouraging or expecting teachers to work together to develop common formative assessments.

Common formative assessments, as defined in this study, are a subset of formative assessment and contain many of the critical elements of formative assessment. What distinguishes them from formative classroom assessment practices is that they are assessment practices or tools collaboratively designed, administered, scored and analyzed by a team of teachers responsible for teaching the same grade or course. Common formative assessments check student understanding of the particular standards that the grade level or department teaches are currently focusing on. The teachers work together collaboratively to analyze the results and discuss ways to achieve improvements in student learning (Ainsworth & Viegut, 2006).

Experts in the field of assessment and school improvement agree that the creation and use of frequent, common, high-quality formative assessments by teachers who are working collaboratively to help a group of students develop agreed upon knowledge and skills is a powerful strategy for improving student learning (Ainsworth & Viegut, 2006;
Reeves, 2004; Schmoker, 2003; Stiggins, 2005). The reasons why common formative assessments contain such potential power to improve learning is similar to the contributing factors of formative assessment practices in general. Both call for substantial changes in the way that teachers and students act. A closer examination of the characteristics and benefits of common formative assessments reveals what these changes entail.

**Establishment of clear learning targets.** When teachers work together to develop common formative assessments, they must identify the learning standards they wish to assess and discuss specifically what skills and knowledge are embedded in these standards. In addition, they determine how the standards might be assessed, where students may be currently in relation to these standards and what learning needs to take place to demonstrate proficiency (Fisher & Frey, 2007). In essence, teachers begin with the end in mind and use a backwards design (McTighe & Wiggins, 2005) to develop an assessment. This collaborative process increases the teacher’s own understanding of the standards and how to teach to these standards (Fisher & Frey, 2007; Stiggins & DuFour, 2009).

Teachers in turn, share these standards with students using student friendly language (Chappuis & Chappuis, 2007; Stiggins, 1998, 2005) and provide a clear sense of where the child’s learning is intended to go. Examples of what the desired learning target looks like including specific criteria for success should also be provided so that students understand the learning goal and will have a sense of where they may be in relation to that goal at any given time. Common criteria for success also reduce the
inequities in how learning is assessed teacher to teacher (DuFour et al., 2006).

**Assessments tied to actual curriculum.** The assessments that are commonly developed are tied to the desired standards and the actual curriculum that will be taught. This helps to provide a guaranteed curriculum as Marzano (2003) calls it ensuring that all students have access to this essential curriculum and determining whether this guaranteed curriculum is being taught and more importantly learned (DuFour et al., 2006). Reeves (2004) believes that teachers’ active involvement in the development of assessments leads them to accept greater accountability for both the curriculum taught and the results of that teaching.

**Timely and descriptive feedback.** Ainsworth (2007), DuFour et al. (2006), Fisher and Frey (2009), and Stiggins and DuFour (2009) attest that when assessments are given close to the time of instruction and analyzed collectively, teachers can work together to develop ideas for instructional adjustments that they and/or their students can take. As with any type of formative assessment the feedback must provide useful, descriptive feedback that can guide the next steps in the teaching or learning process.

**Student involvement in the assessment process.** While the role of student involvement in the common formative assessment process is not emphasized as frequently in the literature as it is for general formative classroom assessment practices, Stiggins (2007) in particular is clear to emphasize that this component is an essential element of any effective assessment including common assessments. “In assessment for learning, the student’s role is to strive to understand what success looks like and to use each assessment to try to understand how to do better the next time (p. 72).” Stiggins and
DuFour (2009) contend that students should become partners in interpreting and recording results of common assessments and then brainstorming ideas for how to improve learning of specific standards.

Opportunities for students to demonstrate knowledge through multiple means over time. Common formative assessments typically represent a blend of item types (Ainsworth, 2007) so that student knowledge can be assessed through a variety of means. Often a pre-post test design is used or the same assessment is used at regular intervals so that student growth can be tracked. In either case, the information from the assessment is used by the teacher and/or student to make decisions that will promote continued learning (Stiggins, 2007).

When teachers work together to develop and use common formative assessments, additional benefits can result that also lead to increased student learning and school improvement. Specifically, common assessments:

**Facilitate a systematic, collective response to students experiencing difficulty.**

DuFour et al. (2006), Fisher and Frey (2009), and Stiggins and DuFour (2009) all state that information from common formative assessments helps to identify groups of students that need additional time or support to ensure learning. This in turn, enables the team to pool their collective wisdom in making sound instructional decisions based on results (Stiggins & DuFour, 2009) and in some cases jointly provide timely, systematic programs of intervention or enrichment. Teachers are not left to figure this out or provide these services on their own.
Contribute to assessment quality. According to Stiggins and DuFour (2009) and Fisher and Frey (2009) the team structure in which common assessments are developed, provides a powerful format for teachers to develop assessment literacy and learn how to create high-quality assessments.

Inform the practice of individual teachers and the team’s capacity to improve its program. DuFour et al. (2006) assert that common assessments provide teachers with a basis of comparison that they can use to analyze their own instructional strengths and weaknesses and engage in dialogue with colleagues teaching the same standards to gain and share ideas for instructional practices that may have contributed to such results. Collectively, over time the group learns from one another and changes occur at both the individual classroom level as well as the group, program level.

Empirical Research on Formative Assessments

In order for formative assessment of any kind to live up to its intended benefits, it must be shown to improve student learning. Use of formative assessment that is designed to promote students’ learning, not merely check it, has been proven to benefit student achievement (Black & Wiliam 1998b; Stiggins 2004). In a comprehensive meta-analysis of available research, Black and Wiliam (1998a) found that innovations that include strengthening the practice of formative assessment produce significant and often substantial gains in student learning. The meta-analysis involved studying reviews of research conducted up until 1997 that quantitatively examined formative assessment practices and its effect on student learning. The studies examined in this meta-analysis included classroom groups of students from five years of age to undergraduate college
students, located in several different countries and studying a variety of subject matter disciplines. Typical effect sizes of the formative assessment experiments were between 0.4 and 0.7. Effect sizes of this magnitude are indeed promising and can lead to improved achievement, particularly when noted that use of formative assessment had a greater effect on low achievers, thus helping to reduce the achievement gap between low and high achieving students. Another notable aspect of this meta-analysis is that no negative effects were found in the studies. Popham (2008) believes this finding is worth noting because in many meta-analyses of instructional interventions, results reporting either no significant difference or differences favoring the non-treatment group are found. Other reviews of research synthesizing research undertaken in the last 40 years in the area of formative assessment substantiate Black and Wiliam’s findings (Crooks, 1988; Kluger & DeNisi, 1996; Natriello, 1987; Nyquist, 2003). Wiliam (2007) believes when implemented well, formative assessments can effectively double the speed of student learning.

One of the studies analyzed by Black and Wiliam (1998a) suggests that using formative assessment data as feedback to both teachers and students and making adaptations as the learning is occurring contributes to the power of formative assessment. This study (Fuchs & Fuchs, 1986) which was itself a meta-analysis of 21 different studies involving students pre-school through 12th grade with mild learning disabilities, focused on the use of feedback. Frequent assessments were undertaken weekly and students were provided with instructional adaptations and specific feedback on how they could improve their learning. Teachers who implemented systematic procedures to review the
assessments and take action accordingly had a mean effect size of 0.92, whereas for those teachers where action was not systematic the effect size was only 0.42. The authors noted that when pre-assessment data was used to merely assign students to pre-prepared individual learning programs, student learning gains were not as profound.

Analyzing student learning on a frequent basis, using data diagnostically and incorporating a criterion-referenced model for the development of understanding was found by Bergan, Sladeczek, Schwarz, and Smith (1991) to help teachers as well as students know where they are within this criterion-based continuum of learning. In this study involving 838 children from disadvantaged backgrounds in six different regions of the US, teachers in the experimental group were trained to give initial assessments to inform teaching, regular progress check ups every two weeks and instructional adaptations every four weeks. This formative approach resulted in more substantial learning gains for the experimental group and fewer referrals for special education.

Research collected by the Organization for Economic Co-operation and Development (2005) analyzing the use of formative assessment in eight different countries and reported in their Policy Brief says that the “achievement gains associated with formative assessment have been described as ‘among the largest ever reported for educational interventions’” (p. 2). Formative assessment also improves equity of student outcomes. Schools that use formative assessment show not only general gains in academic achievement, but also particularly high gains for previously underachieving students. Attendance and retention of learning are also improved, as well as the quality of students’ work (Organization for Economic Co-operation and Development, 2005).
The research supports a basic premise of all formative assessment: the information gained regarding student learning must be used to make instructional adjustments. It is these instructional adaptations as well as the changes in instructional pedagogy (providing clear learning targets, assessing learning frequently, and providing feedback to learners) that cause the positive gains in student achievement.

**Empirical Research on Common Formative Assessments**

The use of assessment data as feedback to teachers to inform instructional decision-making that leads to actual changes in instructional practice is also a foundational principle of common formative assessments. What distinguishes common formative assessments as a particular sub-set of formative assessment is the collaborative development of the assessment and analysis of the results. Teachers who are responsible for teaching the same curriculum work together to identify what effective learning of key learning targets looks like and how it will be assessed. Teachers also work together collaboratively to analyze the results of their assessments and determine next steps they and/or their students can take to improve learning.

Empirical knowledge examining the effect of common formative assessments on student achievement is just beginning to be gathered and is therefore limited. Douglas Fisher and Nancy Frey, two professors from San Diego State University, have conducted case study research on the use of common formative assessments in several schools in the San Diego area. In each of these studies, teachers in these schools went beyond collaboratively analyzing student work or scores and incorporated common formative assessments as part of an ongoing instructional development process. While not formally
identifying themselves as PLCs, teachers worked in course alike groups to develop common curriculum and pacing guides, develop common formative and summative assessments, analyze the results including an in-depth item analysis to determine areas of strength, areas of common misconceptions, etc. and discuss necessary steps to re-teach, provide interventions, etc. At Hoover High School, an urban school in San Diego with high percentages of low income and English Language Learners, the researchers worked with teachers to embed a formative assessment approach in the school culture.

Developing and using common formative assessment was made a school-wide expectation (Fisher, Grant, Frey & Johnson, 2008). As common assessments were developed, used and analyzed, researchers found the “item analysis is key to instructional conversations and the interventions that flow from them because it enables teachers to look across the student body for trends – content or concepts they need to re-teach, assessment items they need to change, or pacing guides they need to revise” (p. 65).

After two years, gains in academic achievement as measured by the California Standards Test were clearly demonstrated. The percentage of 10th grade students scoring at the basic level on the Biology test grew from 28% to 51% over this two year period and the percentage of students scoring at the proficient level grew from 1% to 18%. Gains were also seen for these same students in History with the percentage of students scoring below the Basic level dropping from 70% to 58%. Fisher et al. contend that, “Collaborative item analyses and rich instructional conversations based on these analyses, characterized by collegiality and respect, drove these changes. Talking with colleagues who teach the same content and see the same data results is foundational to
instituting improvements and helps teachers determine which instructional strategies are working, which materials are effective, and which students still need help to master the standards” (p. 68).

Fisher and Frey’s (2009) study in an elementary school also demonstrated positive results when teachers worked collaboratively to develop pacing guides and common formative assessments and then used the data from the assessments to examine learning by conducting item analysis. The in-depth discussions of students’ understandings as well as misconceptions helped teachers to more specifically target where and how they could improve instruction. Over a four-year period, the percentage of students who performed at grade level increased significantly with over 20% gains in three out of four grade levels tested. The school’s Academic Performance Index grew by 173 points far outpacing the targeted growth of 52 points over this time period.

Fisher and Frey (2007) found that use of a collaborative protocol for developing and using common assessments helped teachers to more closely examine their instruction and develop greater depth of understanding of content standards, greater understanding of student thinking and better ability to intervene when students do not understand. A middle school that used the protocol to improve their students’ writing reduced the percentage of students scoring at the lowest levels by 56%. The structure that this protocol provided helped teachers to understand the specific standards students were expected to learn, how these standards could be assessed, what instructional strategies were effective in producing the desired learning and what to do when students do not perform at the desired level (Fisher & Frey, 2007).
Fisher and Frey (2009) see four specific benefits for teachers stemming from the use of teacher-created, standards-aligned common formative assessments: (1) Development of teachers’ knowledge of grade/course level content; (2) Better understanding of how to assess and check for understanding and skill development; (3) Practice and practical applications of how to link assessment with instruction; and (4) Ability to identify students in need of intervention. Collectively their studies demonstrate how use of common formative assessments can be used to guide curriculum development, professional development, and increased use of re-teaching and interventions ultimately leading to impressive gains in student performance.

Bernhardt’s (2009) review of a low performing school’s approach of using common formative assessments and collaboratively reviewing data to improve student learning also supports the literature on the power of common formative assessments. Student performance at all grades in this elementary school increased in all subject areas tested.

Merely analyzing the results of common formative assessments may not lead to desired levels of growth. How teachers approach the task of analyzing assessment may also matter. Deuel, Nelson, Slavit and Kennedy (2009) found that teachers can either take a proving stance towards data analysis vs. an improving stance. When teachers took the stance of analyzing data to prove that students had learned and teachers had done their job well, they “spent a lot of time and focused a lot of attention on finding, adapting, and creating assessments that had a good chance of generating positive results” (p. 70) and held on to predetermined beliefs about why a student might perform as they did.
rather than exploring ideas for moving a student forward. Learning teams that embraced an improving stance spent time trying to understand student thinking. These teachers tended to use more varied forms of student assessment that would allow for a student to demonstrate their thinking. According to the researchers, “teachers sharpened their thinking about instruction, learning styles, content expectations, formative assessment, the role of the teacher and student engagement” (Duel et al., 2009, p. 71).

**Professional Learning Communities and Formative Assessment**

**Assessment Literacy**

Stiggins and Conklin (1992) found that teachers can spend up to one-third of their professional time involved in assessment related activities. However, research has shown that many teachers do not know why or how to use these assessment practices to improve teaching and learning (Black et al., 2003; Black & Wiliam, 1998; Stiggins, 2001; Stiggins & Conklin, 1992). In an ethnographic study of classroom assessment, Stiggins and Conklin (1992) found teachers use a wide variety of assessment methods but few teachers displayed quality control standards related to assessment. Specifically, teachers lacked understanding of how to align assessment methods with the kinds of achievement to be assessed, how to correctly sample achievement or how to avoid bias. Knowing how to effectively communicate to students and parents about achievement and to provide effective feedback was also lacking. Stiggins (1998, 2001, 2004) as well as Black and Wiliam (1998) contend that educational systems have failed to provide teachers with the formative assessment skills needed to develop and use quality assessment practices, in part due to an over-reliance on summative standardized testing. Guskey (2007) contends
that teachers have received little training in assessment literacy and particularly formative assessment practices. Competence in assessment has historically not been deemed to be a critical skill required of teachers or administrators (Stiggins, 2001). Teachers were primarily prepared and supported to work in the instructional domain of education while outside measurement experts and publishers were assigned to develop and conduct assessments. This disconnected view of assessment began to change in the 1990s as the major professional associations related to teaching and accreditation in the United States (National Education Association, American Federation of Teachers, Council of Chief State School Officers, National Council on Accreditation in Teacher Education and National Board for Professional Teaching Standards) adopted standards of professional competence that include an assessment component.

In order to make these standards of professional competence a reality, professional development and support is needed to help teachers develop the assessment literacy, confidence and expertise to use assessment in a formative manner. Empirical knowledge is just beginning to be gathered in how to design and implement professional development to reach this end. Black et al. (2003) undertook a project to promote more extensive use of formative assessment practices in secondary schools in England. They utilized an interactive in-service training program in which teachers worked with college staff and the Local Education Authorities to learn about formative assessment practices, develop an action plan for implementing some type(s) of formative assessment in their classroom and be supported in their use through observations, feedback and additional professional meetings to discuss what was happening in their classrooms. What surfaced
from the qualitative analysis of the professional development utilized and the teachers’ comments was that there was no discrete recipe for teachers to follow in implementing formative assessment practices in their classrooms (Black et al., 2003). However, Black, et al. (2004) contend, “Collaboration with a group trying out similar innovations is almost essential. Mutual observation and the sharing of ideas and experiences about the progress of action plans can provide the necessary support both with the tactics and at a strategic level” (p. 20).

Schneider and Randel (2009) also analyzed the professional development needed to help teachers implement formative assessment practices. They analyzed a number of experimental and quasi-experimental studies involving professional development and the use of formative assessment practices. They found that “professional development must be fully implemented and sustained over time in order to make changes in teacher knowledge and practice” and if not sustained, it will be “unlikely to influence student achievement” (p. 262). It is important to note that in most of the reviewed studies of professional development in formative assessment analyzed by Schneider and Randel, the professional development was centered in professional learning communities. It is clear from the literature on PLCs that they embody the characteristics of effective professional development Schneider and Randel identified was needed for training and support in use of formative assessments.

An empirical study that directly examined the relationship between formative assessment and professional learning communities is a study undertaken in Israel by Birenbaum et al. (2010). These researchers saw the coherence and similarity of
contextual attributes between formative assessment and professional learning communities and identified both processes as fundamentally processes of inquiry. The five phases of formative assessment identified by these authors (Planning, Evidence Collection, Interpretations, Utilization, and Evaluation) in many ways parallel the four guiding questions of DuFour et al.’s (2006) PLC model. In the Birenbaum et al. (2010) qualitative study, they examined the qualitative level of a PLC group with how the group perceived and engaged in formative assessment practices and found that more advanced professional learning communities engaged in better quality formative assessment practices. In high PLC schools, formative assessment was valued and correctly perceived as a tool to improve teaching and student learning. Teachers used data from formative assessments to provide feedback to students and to adapt their teaching to meet the individual needs of the student. In low PLC schools, assessments tended to be less well constructed, did not use the data with students or to inform their teaching, and in general thought of assessment in more of a summative manner. While this study supports the link between use of PLCs and use of formative assessments, it did not examine or decipher the dynamic processes through which assessment practices are constructed nor did it examine how teachers use assessment information to make instructional changes.

**Professional Development and Support for Using Common Formative Assessments**

By its very definition, common formative assessments require teachers to work together to develop assessments and collectively analyze the results. Conducting this type of work within a professional learning community appears to be a natural fit. Many experts believe that the deliberate use of professional learning communities can help
schools more effectively develop and utilize common formative assessments, therefore redefining the role of assessment in school improvement (Ainsworth & Viegut, 2006; DuFour et al., 2006; Stiggins & DuFour, 2009; William, 2007). In examining the literature in why this is so, it is clear that the philosophy, focus, collaborative nature and structure of professional learning communities align well with the goal of increased use of common formative assessments as a means for improving student learning.

Wiliam (2007) is careful to point out that a PLC is a means to an end not an end in itself. The end is not just teachers working together collaboratively; the end is improved student learning. As clearly articulated by DuFour et al. (2006), “The very essence of a learning community is a focus on and a commitment to the learning of each student” (p. 3). In order to achieve this purpose, the members of a PLC create a clear and compelling shared vision of what they must do to help all students learn. Clearly defining what each student must learn, developing common assessments to monitor each students’ progress toward this learning on a frequent basis and using results from these assessments to provide interventions and instructional adjustments are steps that teachers working as a PLC collectively take to reach their end.

Formative assessment therefore plays a pivotal role in the work of a professional learning community focused on improved student learning. Reeves (2007) believes that “In the hands of capable professional learning community, assessment is relentlessly constructive and focused on its singular purpose - the improvement of teaching and learning (p. 59). While improved student learning is the end goal, the means for accomplishing this goal is through improved instructional practice. Wiliam (2007) points
out the work of many in the field – the need to change teacher practice in order to change student learning. PLCs help teachers to not only acquire new knowledge but to change deeply ingrained practices. DuFour et al. (2006) states that “In a PLC, collaboration represents a systematic process in which teachers work together interdependently in order to impact their classroom practice in ways that will lead to better results for their students, for their team, and for their school” (p. 3).

As previously noted, the use of formative assessment requires significant changes in instructional practice. Combining the development and use of PLC with the development and use of common formative assessments will aid teachers with these changes. Wiliam (2007) claims that the best way to help support teachers in adopting and using formative assessment is through building-based teacher learning communities. He posits that a PLC promotes two important features that lead to changes in teacher practices and ultimately to improved student learning. First is the fact that a PLC holds teachers accountable to one another. While a PLC focuses on analyzing and discussing learning results, it also focuses on how those results can be obtained through different teaching practices. Teachers working in a PLC are less likely to discuss a new teaching strategy and then fail to act on it in their classroom. Black et al.’s (2003) research found that teachers made use of new instructional approaches a priority because they had talked about it in a group setting and in essence made a promise to their team. Collectively analyzing results from common assessments also holds teachers accountable for enacting changes in actual classroom practice. The second feature of a PLC that promotes change is support. The collaborative nature of a PLC and the trust that is built when teachers
work together for a common purpose, provides support for teachers to share and gain ideas for making instructional change that will benefit students. Popham (2008) contends that professional learning communities provide a non-threatening environment allowing teachers to analyze weaknesses or gaps in their own individual practice and learn new ideas from peers. Wiliam (2007) believes it is the combination of these two ideas of accountability and support that holds the potential for real change in teaching practices and in turn student learning. He coins this combination “supportive accountability” while Reeves (2005) refers to it as “mutual accountability.”

In order for supportive accountability to take place, teachers needs a structure or system for how their work together in a PLC will proceed. Wiliam (2007) advises that schools should provide a clear structure for each meeting. Fisher and Frey (2007, 2009) and Fisher et al. (2007) found from their work in schools, that specific protocols or structures helped to provide a framework for teachers to work within to develop and use common assessments. DuFour et al.’s (2006) model of a PLC with its guiding questions which asks teachers to clearly define the intended learning target, determine how to assess this target and how to respond to the results provides teachers with a systematic process that structures their collaborative efforts. Regardless of the specific format, the literature on professional learning communities is clear that a structure should exist to guide PLC members so that their collaborative work is purposeful and remains focused on improved instructional practices and student learning.

While no quantitative studies exist relating specifically to the professional development needed to promote the development and use of common formative
assessments, insights gained from the research studies previously described investigating common formative assessments align well with the fundamental principles inherent in the use of professional learning communities as a form of professional development. Fisher and Frey’s work with schools in the San Diego area (Fisher & Frey, 2007, 2008; Fisher et al., 2008) in essence adhered to the characteristics of effective professional development. Teachers worked in collaborative teams with support from the researchers and in some schools as part of a school wide improvement effort with administrative support. The teachers chose the area of student learning to focus improvement efforts on thus individualizing their own learning goals. Teachers met on an ongoing basis and actively worked together to identify essential learning targets, pacing guides and develop common assessments. As Fisher and Frey (2008) pointed out, teachers developed more in-depth knowledge of grade level content by discussing and fully exploring what their students’ learning should look like. They also increased their assessment literacy and became more adept at assessing students.

Fisher and Frey’s research on common formative assessments substantiates Ainsworth and Vieght (2006), DuFour et al. (2006), and DuFour and Stiggins’ (2009) call for the development and use of common formative assessments within professional learning communities. This dissertation study extends the work of Fisher and Frey by further exploring the relationship between the development and use of common formative assessments and professional learning communities. The study was designed to examine what specific characteristics and structures within a PLC support teachers to gain higher levels of assessment literacy, do the hard work of developing common formative
assessments and then analyze the results from such assessments to change instructional practice.
CHAPTER III

METHODOLOGY

Overview

This study was designed to answer the question, How do we help teachers to develop and use common formative assessments as a means for improving student learning? It is based on the theory that if we are to improve student learning, we must help teachers to accurately assess learning as it is occurring and to use this information to make adjustments in their instruction. It is also based on the theory that it is better to have teachers work together collaboratively to develop these assessments, analyze the results and determine what to do next to meet student needs. The philosophical tenets and structure of a professional learning community as a model for teachers to engage in this type of collaborative work was carefully explored through a qualitative multi case study approach involving two elementary schools. The purpose of this dissertation study was therefore to examine how teachers working within a professional learning community (PLC) apply the tenets and utilize the structure of a PLC to develop and use common formative assessments as a means for improving student learning. The research questions that guided this study were:

1. How do the underlying philosophical tenets of a PLC help elementary teachers to develop common formative assessments, analyze and then use the results from such assessments as a means for improving student learning?
2. How do elementary teachers use the four guiding questions in DuFour et al.’s (2006) PLC model to develop common formative assessments, analyze their results and use this information to make instructional adjustments that aid student learning?

A variety of data collection methods were used to collect qualitative, descriptive information to answer these questions. Data collection procedures included an electronic survey, interviews, and observations of grade level team meetings.

Data was analyzed using qualitative analysis procedures according to a priori themes as well as other ideas and themes that emerged from the data. Similarities as well as differences between the two case sites of this study were explored and noted. The goal of the data analysis was to develop a more thorough understanding of how PLCs actually work to use assessment data to improve student learning.

**Qualitative Research**

The exploratory nature of this study lent itself to a qualitative research design. Qualitative research involves the study of social phenomena within its natural setting; in this case the study of how PLCs work to develop and use common formative assessment. The qualitative researcher seeks to understand the social phenomena through an examination and analysis of other peoples’ multiple perspectives and experiences of the world in which they live and work. By gathering multiple forms of data, the qualitative researcher looks for and analyzes patterns and themes transforming the data into information that can then be used and applied as knowledge (Rossman & Rallis, 2003). This transformation of information into knowledge reflects an active, constructivist
theory of learning (Cresswell, 2003) in which sense of the social phenomena emerges through direct experience, description and interpretation. The rich and complex context of the social phenomena is focused on in qualitative research rather than being controlled for, as in quantitative research. This focus on context adds to the detailed understanding of human experience that the researcher is seeking (Rossman & Rallis, 2003).

The specific strategy of inquiry that was used in this qualitative examination of PLCs is a case study. Case studies are in-depth and detailed explorations of an event, process, organization, group or individual that are an instance drawn from a class of similar phenomena (Adelman, Jenkins, & Kemmis, 1983, p. 3). They seek to understand the larger phenomenon through close examination of a specific case or number of cases (Rossman & Rallis, 2003). A case study strategy was selected for this dissertation study because case studies can provide rich descriptive illustrations of what is actually happening in a particular program, event, etc. and the analysis of this depiction can provide plausible explanations for those events or outcomes. Yin (1994) asserts that case studies add to our knowledge related to “individual, organization, social and political phenomena…the case study allows an investigation to retain the holistic and meaningful characteristics of real-life events” (p. 14), including organizational processes. It is this retention and close examination of the holistic, complex and multi-layered aspects of how a PLC operates as an organization to improve student learning that formed the focus of this study.

Conducting an in-depth investigation of how a single PLC operates can provide meaningful descriptive information that could potentially inform other teacher groups
attempting to develop and use a PLC to improve student learning. Information from a single case study is context dependent and therefore what is learned cannot be generalized in the probabilistic sense (Rossman & Rallis, 2003). However, by using “reasoning by analogy” (Kennedy, 1979), lessons learned from one case study can be applied to another case believed or assumed to be sufficiently similar to the study sample. Conducting similar in-depth investigations in multiple sites can produce more compelling evidence that provides a more complete picture of what occurs within a PLC and how the structure and tenets of this model can be used to help teachers develop and use formative assessments.

The research design for this multi-case study involved data collection and a detailed analysis and description of each case as a single case study, called a within-case analysis. Themes within each case were identified, followed by a thematic analysis across the cases, called a cross-case analysis. A cross-case analysis allows commonalities as well as differences between the cases to be studied. The evidence obtained from multiple cases is analyzed using replication logic. If certain themes and patterns in the data appear in each separate case, literal replication is said to have taken place. If on the other hand, different contrary results occur that can be accounted for because of predictable reasons or conditions, theoretical replication is said to have occurred (Yin, 1998).

In this multi-case holistic study, elementary grade level teams from two different schools in two different districts were studied thereby providing for cross-case analysis which allows commonalities as well as differences between the cases to be studied.
Replication logic was applied to the analysis of data from each case leading to a more complete picture of how elementary grade level teachers can work together collaboratively to develop and use common formative assessments to improve their students’ learning.

Setting

Selection of Case Sites

The two school district sites used in this study were selected due to their stated use of PLCs and common formative assessments. The districts are geographically very close to one another. One of the two districts is an elementary district feeding into Stevenson High School. Rick DuFour one of the leading experts on PLCs was Superintendent of Stevenson High School. Consequently, many school districts and schools in the area have had a great deal of exposure and training on PLCs. Several of the elementary feeder schools have developed joint common benchmark assessments for transition between elementary and middle school and between middle school and high school.

While the three school districts share many commonalities, they each are at separate stages in where they are on the PLC journey and their use of common formative assessments as a means for improving student learning. These distinctions add to the richness of the data analysis. Similarities and differences between how each district applies the tenets and utilizes the structure of a PLC to guide their work were noted and discussed in Chapters IV and V (Results) and in Chapter VI (Discussion).
Participants

The participants in this study involved elementary teachers who work closely in grade level teams as a professional learning community to plan instruction, assess learning and use results from such assessments to better meet student needs. Grade level teams from both case study schools had previously been exposed to the fundamental tenets of a professional learning community and developed common formative assessments as a grade level team. One grade level team from each of the two school districts was pre-selected by the building principal to voluntarily participate in this study. Principals from these schools were also asked to participate. All participants received a $10 gift card to a restaurant chain such as Starbucks or Panera as a token of appreciation for their participation in this study. A complete description of each case site used in this study follows.

Case Study A

The first case study took place in School A, an elementary K-5 school serving 711 students in Lake County, Illinois. Information regarding School A was obtained from a review of documents and an interview with the principal and fourth grade level team. The demographic make-up of the school is 55% White, 2% Black, 18% Hispanic, 21% Asian and 4% Multi-racial or other. The school has 21% of its students qualifying as low income and 17% Limited English Proficient. Student achievement at School A is strong with 90% of students meeting or exceeding on the Illinois Standards Achievement Test (ISAT). The school was selected for participation in this study due to its stated use of PLCs and common formative assessments. The district, of which School A is a part, has
developed common benchmark assessments in science and social studies that are administered across the entire district.

The specific grade level professional learning community that was examined in Case Study A is a fourth grade team comprised of five grade level classroom teachers and a special education resource teacher that works with students from the grade level. One classroom teacher on this team has 34 years experience, while the rest of the team has between two to seven years teaching experience. Three of the classroom teachers have worked together on this team for four or five years while the other two teachers have been on the team for two years. The team officially meets as a professional learning community on a weekly basis, however members commented that they typically meet other times throughout the week as well.

Each grade level team functions as a PLC in this K-5 elementary building. The concept of professional learning communities has evolved over the last seven years in this school. Originally, the staff used monthly staff meetings to function as whole faculty study groups concentrating on specific areas of professional interest in addition to meeting as a grade level teams to discuss instructional planning and other topics common to all. The development of PLCs was first explored as a whole faculty study group before a decision was made to move to grade level PLCs several years ago. The schedule was redesigned at this time to offer block scheduling and provide common planning time for teams to meet as PLCs.

While the staff has had some explicit exposure to DuFour et al.’s (2006) specific model for PLCs including the four guiding questions, they do not follow a set structure or
model when they meet in their weekly meetings. Rather, the teams focus on topics related to the School Improvement Plan, planning and implementing a common school wide thematic unit of study, meeting the needs of students through Response to Intervention (RTI) and planning and implementing instructional units of study and related assessments. The school leadership team that consists of one member from each grade level PLC as well as other school personnel will establish topics for each PLC to discuss and work on related to these four areas or other relevant topics. Whole school faculty meetings are also used to focus in these same four areas.

The school as well as grade level teams function as a unified professional learning community focusing on a shared vision and common goals. A current goal that the entire staff and grade level teams are working on is developing students’ deeper reading comprehension strategies and determining ways to assess and measure these specific strategies. Developing meta-cognition is another goal area that all teachers in the building are working on with their students. The school’s approach to Response to Intervention (RTI) is in a state of transition, moving from a model in which support personnel provided interventions using a pull out model to a more collaborative model in which general education classroom teachers are also providing Tier II and III interventions to small groups of students. This is accomplished by one teacher on the team taking on the role of interventionist and providing 30 minutes of intervention daily to a small group of students on the team while the rest of the students are involved in science and/or social studies instruction taught by the other members of the team.

The district’s mission statement, “Learning for all, working together, whatever it
takes” is embraced and serves as a guiding focus for this school and the fourth grade team. As the principal noted in her interview, “we try to push everyone up, not just those that don’t meet standards.” The expectation is that all staff will go above and beyond for each child’s academic and emotional success. Student learning is measured by standardized tests such as the Northwest Education Association’s Measures of Academic Progress (MAP), Dynamic Indicators of Basic Literacy Skills (DIBELS), and locally developed assessments and procedures (writing portfolios and use of rubrics, individual reading inventories, and common assessments developed at both the district and building grade level).

Building a strong sense of community and fostering a safe and supportive environment for students as well as staff are other key characteristics of this school. As the school has integrated the use of PLCs into its continuous improvement efforts, the principal has worked very consciously to develop high levels of professional trust and collaboration among the staff members. Multiple steps have been taken to decrease teachers’ sense of vulnerability and isolation and increase their comfort and ability to learn and grow from one another.

**Case Study B**

The second case that was used for this study is School B, which serves 464 Pre-K-2nd grade students in Lake County, Illinois. Information regarding School B was obtained from a review of documents and an interview with the principal and one of the two first grade PLC teams. The demographic make-up of the school is 65% White, 1% Black, 1% Hispanic, 29% Asian, and 4% Multi-racial. The percentage of low-income
students is 2% and 14% of students qualify as Limited English Proficient. While students at this Pre-K-2nd grade school do not yet take the Illinois Standards Achievement Test (ISAT), student achievement within this grade based district is strong with 94% of students meeting or exceeding in Reading and 98% of students meeting or exceeding in Mathematics.

Like School A, School B was selected for participation in this study due to its stated use of PLCs and common formative assessments. School B is a part of a three school district (Pre-K-2nd, 3rd-4th and 5th-8th grade) that feeds into Stevenson High School in Lincolnshire, Illinois.

All teachers from School B received formal training in DuFour et al.’s (2006) model of professional learning communities. Workshops were provided for all teachers at the district level and as a building, all teachers from School B studied and applied information gained from the Learning by Doing (DuFour et al., 2006) workbook. PLC teams were formed and meet on at least a weekly basis.

Typically, there are two PLC teams per grade level comprised of 3-4 classroom teachers and 1-2 academic support teachers (reading specialists, special education teachers, etc.). In addition to their PLC meeting, each grade level meets as a whole grade level team once per week.

As a part of their PLC work, all teachers at each grade level have developed and/or identified common assessments in reading, language arts, math, social studies and science. Further development and refinement of common assessments is worked on in grade level and PLC teams.
The specific grade level professional learning community that was examined in Case Study B is a first grade team comprised of four grade level classroom teachers, two reading specialists and a special education resource teacher that works with students from the team. This group calls itself Team Lit and only focuses on students’ literacy development when it meets once per week. The classroom teachers from this group also meet once per week to discuss students’ math skills and they meet as a whole first grade team with the other three first grade teachers once per week as well. The focus group interview and the team meetings observed were conducted with the Team Lit group when they were focusing on students’ literacy development.

One classroom teacher on the Team Lit PLC has two years experience, while the rest of the team has between 9 to 12 years teaching experience. One of the two reading specialists on the team has 20 years experience and works part-time and the other has 16 years experience. The special education teacher has four years experience. Two of the four classroom teachers have worked together on this team for 11 years and one teacher is new to the team this year having served as a kindergarten teacher in the building the year before. The special education teacher is also a new addition to the Team Lit PLC this year.

The first grade Team Lit concept is based on the construct of collective responsibility for student learning. In addition to each classroom teacher providing literacy instruction to their class of approximately 20 students 90 minutes per day, all students are flexibly re-grouped for an additional 30 minutes of daily literacy instruction in order to provide more differentiated instruction in smaller groups and a second daily
guided reading experience. The two reading specialists, one special education teacher, and two classroom assistants assigned to the team, work with the four classroom teachers to be able to group the students into nine different groups. The first grade Team Lit PLC has used this model of instruction for four years. The other first grade PLC team does not use this model and provides additional literacy support for students through the reading specialists’ and special education teacher’s use of a more traditional pull out model. A similar Team Lit model has been started in kindergarten and some regrouping of students is also done for math instruction in first and second grade.

The culture and vision of School B is very child-centered and focused on meeting the needs of every student. As a Pre-K-2nd grade school they are in tune with the developmental nature of students’ learning at these ages and design integrated, developmentally appropriate learning experiences that are responsive to the needs of young learners. Both instructional and organizational decisions are made based on student need. Student learning is a shared community experience in School B with teachers, teacher assistants, other building staff and parents all playing a role and seen as responsible for this central goal. Everyone is valued as an important contributor and expected to work together to ensure the success of all students. The school has prioritized beliefs about teaching and learning and analyzed what supports they need to accomplish their goal and what impediments get in their way.

Teachers are expected to work as PLCs and routinely work together to plan, assess, analyze and then respond to student learning. Common planning time has been built into the schedule for this purpose. Clearly defined learning standards and alignment
of instruction among grade level teachers have been established as well as means for assessing student progress. Student learning is measured by standardized tests such as the Northwest Education Association’s Measures of Academic Progress (MAP), AIMS Web benchmark assessments, Fountas and Pinnell Benchmark Assessment System and locally developed common assessments and procedures developed at the grade and PLC team level. Results from these assessment measures drive instructional decisions and how teachers respond to individual student needs.

**Data Collection**

A variety of data collection procedures are typically employed in a case study (Stake, 1995). According to Yin (1989), using multiple sources of evidence in a manner encouraging convergent lines of inquiry adds to the construct validity of a case study allowing the researcher to triangulate data and look for common themes across all sources of data.

This research study utilized three data collection procedures to answer the specific research questions and provide a descriptive analysis of how PLCs in these two schools developed and used common formative assessments. Data collection procedures included an electronic survey, interviews, and observations of grade level team meetings.

**Teacher Survey**

A survey was administered electronically using Opinio software to all participating teachers in each of the two schools involved in the study to gain:

a. Demographic background information on participants (years teaching, years on grade level team, etc.)
b. Brief analysis of what professional activities teachers focus on during their grade level team meetings and how much time is spent on these activities.

c. Individual perceptual information regarding their grade level team’s development on key dimensions of a PLC.

Questions for this survey were taken from the Professional Learning Community Assessment (PLCA), a questionnaire developed by Huffmun and Hipp (2003). The entire PLCA instrument assesses the five dimensions of a PLC identified by Hord (1997) and includes 45 total forced-choice Likert-type scale questions. The PLCA was assessed for reliability and construct validity. Using factor analysis to determine convergent validity and Cronbach’s Alpha, the instrument was found to be reliable and yielded satisfactory internal consistency between 0.83 and 0.93. The instrument has been used in several other case studies examining the development and characteristics of PLCs (Hipp & Huffman, 2005; Hipp, Huffman, Pankake, & Oliver, 2008; Sundin, 2008). The 20 questions selected from the PLCA for the survey administered in this dissertation study most closely align with the philosophical tenets of a PLC that were identified in Chapter I as the fundamental principles underlying the PLC model as a means for improving student learning. Data from this survey instrument (see Appendix A) was used to answer both research questions.

A technical mistake was made by the researcher in the first administration of the survey which did not allow respondents to completely answer one multi-faceted question. After being brought to the researcher’s attention, participants were encouraged to skip
that particular question on the initial survey and a second survey containing only the corrected question was then sent to all participants to complete.

**Interviews**

Interviews were chosen as a method of data collection for this study because they allow researchers to learn about things that cannot be directly observed or gained from forced choice survey instruments. Interviews allow participants to reveal rich personalized information and perspectives, thus providing descriptive data that the researcher can use to answer the how and why questions that often are at the heart of a case study.

Semi-structured open-ended interviews were used in this study to allow participants the freedom to choose their own words to describe how their grade level team works to improve student learning. Open-ended questions allowed the interviewer to probe for more details or change the line of questioning in a direction not pre-determined. Participants were thus able to expand upon their answers and provide a more complete description or explanation.

Interviews were conducted with the teachers from the two school districts involved in this multi-case study. Teachers from each elementary grade level team selected for this study were interviewed in a focus group setting. The focus group format allowed the researcher to see first-hand how the group interacts and works together. Focus groups emphasize dynamic group interaction and can therefore elicit synergism, snowballing of comments and ideas, stimulation, security and spontaneity (Hess, 1968). Qualitative researchers are “finding that the interactions among the participants stimulate
them to state feelings, perceptions, and beliefs that they would not express if interviewed individually” (Gall et al., 2003, p. 238). With focus groups, the researcher can observe the interaction within the group, and it is this interaction that can provide a rich amount of data on both behaviors and attitudes. Each interview lasted approximately 90 minutes and took place at the teachers’ school site in one of the teacher’s classrooms. Interviews were audio-recorded and transcribed verbatim by the researcher. An interview protocol (see Appendix B) was used to ask the same semi-structured questions of each group and make field notes.

Principals were also interviewed to gain a broader perspective of the goals for PLCs in general and how the selected grade level team actually operates as a PLC. These interviews were conducted as individual interviews at the school site and lasted approximately 45 minutes. Principal interviews were also audio-recorded and transcribed by the researcher. A principal interview protocol (see Appendix C) was used to ask the same semi-structured questions of each principal and make field notes.

**Observations of Grade Level Meetings**

Field-based observations of grade level meetings were undertaken to gain additional insights into how the grade level team operates as a professional learning community and better understand the context behind the survey and interview data. Observation is typically a fundamental component of all qualitative inquiry (Rossman & Rallis, 2003) allowing the researcher to gain a much deeper understanding of the context and complexity of the case. In this particular research, observations of grade level meetings provided the researcher with direct personal experience of how each group
operates as a PLC. An observation protocol form (see Appendix D) was used to look for and categorize similar types of data observed. Each team was observed two times when they were naturally scheduled to meet and would normally be developing or analyzing common formative assessments.

**Data Analysis**

The data gathered from the survey, grade level focus group interviews, individual principal interviews, and observations of grade level meetings was analyzed using qualitative data analysis procedures. Rossman and Rallis (2003) describe the data analysis process as incorporating deep immersion in the data; systematic organization of the data, into categories, themes and patterns; interpreting and bringing meaning to the themes, and coherently describing what was learned.

The data from all data collection methods was used to answer the two research questions as well as explore and explain the relationship between PLCs and common formative assessments. The theoretical proposition that was explored in this analysis is whether groups of teachers who have internalized and apply the tenets and utilize the four guiding questions of a PLC more frequently and effectively develop, analyze and use common formative assessments as a means to improve student learning.

Table 1 provides an overview of how data was collected and analyzed to address this study’s two research questions.
Table 1

Research Questions and Data Collection Methods

| Research Question #1: How do the philosophical tenets of a PLC help elementary teachers to develop common formative assessments (CFAs), analyze and then use the results to improve student learning? |
|---|---|
| **Data Collection** | **Data Analysis** |
| **Survey (Appendix A)** | Analysis on each tenet for all participants on the team to determine strength of each tenet. Cross participant analysis to determine the level of congruence in the team. |
| Perceptual questions on survey relating to tenets | |
| **Interviews (Appendix B)** | Responses on interviews were categorized and coded by examples of each tenet. Frequency, strength of tenet, and description of how each tenet influenced the PLC’s work with CFAs were examined. |
| Questions that elicited discussion of, or examples of the tenets in action. Interview field note form provided for notation of examples of each tenet. | |
| **Observations** | Observed behaviors were categorized and coded by examples of each tenet. Frequency, strength of tenet, and examples of how each tenet influenced the PLCs work with CFAs were examined. |
| Observation protocol provided for notation and collection of examples of each tenet in action | |
Research Question #2: How do elementary teachers use the structure of the 4 guiding questions in DuFour et al.’s (2006) model to develop common formative assessments, analyze the results and use the information to make instructional adjustments that aid student learning?

<table>
<thead>
<tr>
<th>Data Collection</th>
<th>Data Analysis</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Survey</strong></td>
<td><strong>Data Matrix based on 4 Guiding ?s</strong></td>
</tr>
<tr>
<td>Survey questions regarding how frequently teachers engage in activities related to 4 guiding questions.</td>
<td>Frequency of how often teachers reported on survey engaging in activities related to each of the 4 guiding questions was examined</td>
</tr>
<tr>
<td><strong>Interviews</strong></td>
<td><strong>Responses from interviews were analyzed and categorized as examples of activities related to each of the four guiding ?s</strong></td>
</tr>
<tr>
<td>Interview questions regarding development, analysis and use of assessment results</td>
<td></td>
</tr>
<tr>
<td><strong>Observations</strong></td>
<td><strong>Observed behaviors were analyzed and categorized as examples of activities related to each of the 4 guiding questions</strong></td>
</tr>
<tr>
<td>Observation protocol provided for collection regarding frequency of activities and description of each activity</td>
<td></td>
</tr>
</tbody>
</table>

An analysis of data was first conducted to address each research question separately and provide a descriptive analysis of each case site as it relates to these separate questions. Results for each research question are reported in Chapters IV and V.

The data gathered relating to the existence and application of the tenets of a PLC was then analyzed and compared in relation to the data gathered regarding the professional activities centered on the development and use of common formative assessments for each case site. This analysis was conducted to examine the relationship between PLCs and common formative assessments and determine if the theoretical proposition explored in this dissertation was true in each separate case study. This is an
example of pattern matching (Campbell, 1975) whereby several pieces of information from the same case are related to the theoretical proposition (Yin, 1989). Cross case analysis was then conducted using replication logic to determine if there were similarities regarding the relationship between PLCs and common formative assessments across the cases.

In order to answer each of the research questions, the data was coded, sorted and analyzed using specific a priori categories. For the first research question revolving around how the philosophical tenets of a PLC help teachers to develop common formative assessments, analyze and then use the results to improve student learning, the researcher examined data looking for examples of how the key philosophical tenets of a PLC are demonstrated in each case’s data. In particular, the following tenets were looked for:

A. Collaborative culture
B. Collective inquiry and action orientation
C. Shared vision and goals
D. Focus on learning rather than teaching
E. Mind set of continuous improvement
F. Results Orientation

Perceptual data regarding these tenets was gathered from the teacher survey. Each question on the teacher survey was associated with at least one of these six tenets. Several questions on the survey related to more than one PLC tenet and a decision was made by the researcher to include a particular survey question in more than one tenet.
when reporting the data. Perceptual data on the teacher survey was analyzed first for each participant to determine the perceived strength or level of implementation of each tenet. The data was analyzed across participants in each case site to determine if there was agreement among the grade level team on the strength or level of implementation of each tenet.

These tenets were looked for again in the word for word transcriptions of the interviews and observed grade level meetings. Data from these two sources was categorized and color coded by examples of each tenet. Data was coded if it specifically mentioned or used a key term associated with a particular tenet (i.e., coded for Results Orientation if a particular student achievement level such as a score on a test or description of a specific learning outcome a student had obtained was mentioned). Data was also coded if it illustrated an example of what a tenet might look like in action. Responses were coded for only one tenet. For example, if all the teachers on the team were discussing the importance of students learning a particular skill, it was coded as a Focus on Learning but not also a Shared Vision or a Collaborative Culture.

This coded data was analyzed to determine the frequency of how often the tenet was mentioned or inherent in an interview response and how many times the application of the tenet was observed in the team’s work together during grade level meetings. The data was also examined and analyzed to ascertain the level of implementation or strength of each tenet. Finally, the data was analyzed to see how each tenet influences and shapes the group’s work with common formative assessments. The combination of frequency data, strength data and explanatory data provides a rich description of how the team at
each case site functions as a PLC and how these elements influence and shape the actual work of the team. Themes that emerged from this quantitative and descriptive analysis of how the grade level team functions as a PLC and how they apply the tenets of a PLC in their work with common formative assessments were identified. The researcher carefully analyzed the data to determine if the data on these tenets from the interviews and observations of grade level meetings was congruent with the survey data for the team. This helped to establish construct validity.

The second research question involving how teachers use the structure of DuFour, et al.’s (2006) PLC model with its four guiding questions to help develop and use common formative assessments as a means for improving student learning was studied by using these four questions as a priori categories looked for in the survey data, interviews, and observations. As previously noted in Chapter I, DuFour et al.’s four questions are similar to the stages in a formative assessment cycle identified by Birenbaum et al. (2010). A data matrix incorporating both DuFour et al.’s four guiding questions and Birenbaum et al.’s formative assessment cycle was used to group information gained from all data collections methods into these a priori categories. Each section of this matrix was reviewed from both a quantitative and qualitative perspective. The goal was to develop an in-depth picture of how each team engages in these types of professional activities in order to improve student learning.
Table 2

*Data Matrix for Second Research Question*

<table>
<thead>
<tr>
<th>Questions in DuFour et al.’s Model</th>
<th>Stage in Birenbaum et al.’s Formative Assessment Cycle</th>
<th>Focus of teacher discussion and/or activity</th>
</tr>
</thead>
<tbody>
<tr>
<td>Question #1</td>
<td>Plan</td>
<td>Establishment of learning targets</td>
</tr>
<tr>
<td>What do we want students to learn?</td>
<td></td>
<td>Planning instruction</td>
</tr>
<tr>
<td>Question #2</td>
<td>Assessment Development</td>
<td>Developing formative assessments</td>
</tr>
<tr>
<td>How will we know when they have learned?</td>
<td></td>
<td>Developing rubrics or discussing criteria for success</td>
</tr>
<tr>
<td>Questions #3 &amp; #4</td>
<td>Interpret and Plan</td>
<td>Examination of assessment results /student work</td>
</tr>
<tr>
<td>How will we respond when some students don’t learn?</td>
<td></td>
<td>Reflection on instructional techniques</td>
</tr>
<tr>
<td>How will we respond when some students already know?</td>
<td></td>
<td>Development of new ideas for meeting student needs</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Planning next instructional steps</td>
</tr>
</tbody>
</table>

In addition to these a priori categories, the data was carefully reviewed to see what other themes emerged from the data. The researcher coded and recoded as analysis continued in order to address each research question.

In order to explain the relationship between PLCs and common formative assessments, the theoretical proposition was tested by examining the data relating to the existence and application of the tenets of a PLC in comparison to the data gathered regarding the professional activities centered on the development and use of common formative assessments. This use of pattern matching logic (Campbell, 1975) compared
the strength or level of implementation of the PLC tenets with the frequency and quality of professional activities associated with use of common formative assessments.

According to Campbell’s theory, if the patterns coincide and the results for a particular site are high for both PLC tenets and professional activities, the internal validity for determining a strong relationship between PLCs and the development and use of common formative assessments is strengthened. Cross case replication of this pattern further strengthens the theoretical proposition of this dissertation and provides support for PLCs as being an important component in the development and use of common formative assessment as a means for improving student learning.

**Limitations of Study**

Qualitative case studies in general and therefore this specific study, contain some limitations that need to be understood when analyzing and interpreting findings. First is the fact that the data collected is for the most part perceptual information that reflects the participants’ thoughts and feelings regarding their work in grade level teams. It was assumed that the participants provided honest and as complete information as possible. The multiple data sources that were obtained from a variety of data collection methods helped the researcher to ascertain if there were inconsistencies in the data and therefore increased the validity of findings.

A second limitation of this case study was the selection of schools participating in this study. Schools needed to meet three criteria to be considered for this study: (1) perceiving themselves to operate as PLCs; (2) using common formative assessment as part of work; and (3) being willing to volunteer to participate in this study. A relatively
small number of schools contacted for possible participation met all three criteria. The small number of cases as well as the small number of grade level teams in each case that were examined is a further limitation of this study. A larger sample size and more case sites that are similar in key characteristics could possibly allow the researcher to generalize key findings to other sites. While general themes were identified and cross case replication looked for, the results presented in this paper may only be representative of these individual school’s grade level teams.

**Ethical Considerations**

Research by its very nature possesses the potential for bias and unintended ethical consequences that can have a negative effect on individuals or the systems that are studied. Involvement in a case study requires the researcher to (a) carefully examine the system without having any negative influence on that system, and (b) control for his/her own biased perceptions. While the researcher in a case study needs to be directly involved in many aspects of the school, this carries with it a high level of responsibility for careful research design, ethical data collection methods, sensitive analysis of data, and discrete dissemination of findings. As staff members are engaged in activities such as interviews, observations and collection of survey information, it is imperative that they view the researcher as both a trusted and competent researcher.

It was important to begin the relationship with a clear and relatively forthcoming statement of the purpose and scope of the study. Administrators as well as teachers involved in this case study were told that the purpose of this study is to examine and describe how teachers working within a professional learning community apply the tenets
and utilize the structure of a PLC to develop and use common formative assessments as a means for improving student learning. Participants were also told that this study primarily focuses on the process of how teachers work together to develop and utilize assessment rather than an evaluation of any individual teacher’s or the school’s use of formative assessment.

Introductory meetings were held at each school with the grade level team that was being asked to participate in this study. Staff members were provided with an overview of the study and informed both verbally and in writing that participation in surveys and interviews was not mandatory and was of a voluntary nature only. Volunteers were asked to provide informed consent before participation and were told that they can remove themselves from the research activity at any time. The form used for informed consent clearly stated the purpose of the study, explained that the study was being conducted in conjunction with the research requirements for an Ed.D. in Curriculum and Instruction at Loyola University Chicago and stated that the results would be used for research purposes only. In addition, the consent form clearly stated that there were no foreseeable risks for participants in the study and that all participants would maintain anonymity in the written report generated from this research. Comments shared by teachers would not be identified by name or shared directly with administrators within their school. With that said, it was noted that direct quotes would used in the final written report to establish or support relevant findings.

Participants involved were informed that all interviews would be audio taped and transcribed verbatim by the researcher and that field notes of each interview would be
taken to record observations of behavior and salient features of the interview process. All transcripts, field notes and survey data were viewed only by the researcher. All information gained from interviews, observations, and surveys were kept in a locked file cabinet in the researcher’s home office.

Self-reflection is often a common element embedded in formative assessment practices and is therefore an integral part of the content of survey and interview questions used in this research. Participants were encouraged to be as open and honest as possible on the survey, during interviews and during observation of grade level meetings to provide the most in-depth and accurate understanding of each school system’s use of PLCs.

As data was gathered, it was important to capture as complete and accurate a picture of each grade level team and their efforts in developing and using common formative assessment as possible. Triangulating the data by analyzing survey information, themes uncovered from interviews, and appraisal of grade level team meeting observations provided a rich and detailed source of information. The interpretation of this data, however, must be free from bias, have face validity and offer a realistic analysis of how PLCs operate in these schools. A strategy that was used to increase the validity of the study is to share initial interpretations with participants in order to check for understanding and elicit further elaboration or alternative thoughts.

As data was analyzed and conclusions drawn, the researcher attempted to determine if any information gained from this study could be transferred and applied in other contexts and under what circumstances. While the intent of this study was not to
uncover a specific model for use of PLCs in the development and utilization of formative assessment, themes that emerged may help others to examine and reflect more deeply upon their own team efforts.

**Summary**

This qualitative case study investigated the relationship between PLCs and common formative assessment and specifically examined how the tenets and structure of a PLC help teachers to work together to develop and utilize assessment results to improve student learning. A qualitative research methodology using a multi-case study design was used to seek to understand the larger phenomenon of PLCs through close examination of a specific number of cases and provide an in-depth descriptive analysis of how common formative assessments are developed and used. A variety of data collection procedures including a survey, interviews, and observations were used. Data was analyzed using a priori categories tied to the research questions and used to explore the theoretical proposition underlying this dissertation study.
CHAPTER IV
RESULTS FOR RESEARCH QUESTION ONE

This dissertation was designed as a qualitative multi case study to examine how teachers working within a professional learning community (PLC) apply the tenets and utilize the structure of a PLC to develop and use common formative assessments as a means for improving student learning. The research questions on which this study is based are:

1. How do the underlying philosophical tenets of a PLC help elementary teachers to develop common formative assessments, analyze and then use the results from such assessments as a means for improving student learning?

2. How do elementary teachers use the four guiding questions in DuFour’, et al.’s (2006) PLC model to develop common formative assessments, analyze their results and use this information to make instructional adjustments that aid student learning?

Grade level professional learning communities from two different elementary school districts participated in this study and were analyzed as separate cases. A variety of data collection methods were used to collect both quantitative and qualitative, descriptive information to answer the research questions in each case. Data collection procedures included an electronic survey, interviews, and observations of grade level team meetings.
This chapter will present the results obtained from these data collection methodologies that answer the first research question regarding how the philosophical tenets of PLCs help teachers to develop common formative assessments, analyze and then use the results from such assessments as a means for improving student learning. Data will primarily be reported for each case site separately. Some cross-case analysis of similarities and differences in the data between the two cases will be provided in this chapter and also expanded upon in Chapter VI.

**PLC Tenets and Use of Assessments**

DuFour and Eaker (1998) identified the fundamental characteristics and tenets of PLCs and explained why these tenets help teachers to make changes in actual teaching practices that can lead to improved student learning. These tenets form the essence of how teachers come together as a learning community to discuss and examine student learning. Examining and using the results of student learning to make changes in instructional practice is synonymous with formative assessment. Therefore, in a study of how teachers develop and use formative assessments, it is also important to study how teachers use the philosophical tenets of the PLC model to assist them in their work.

For the first research question revolving around how the philosophical tenets of a PLC help teachers to develop common formative assessments, analyze and then use the results to improve student learning, data was examined for examples of how the key philosophical tenets of a PLC were demonstrated in each case’s data. In particular, the following tenets were looked for:
A. Collaborative culture  
B. Collective inquiry and action orientation  
C. Shared vision and goals  
D. Focus on learning rather than teaching  
E. Mind set of continuous improvement  
F. Results oriented  

**Results from Teacher Survey**  

Results from the teacher survey administered to all the fourth grade teachers in School A and the first grade Team Lit group in School B provided perceptual information regarding the level to which each individual in these two PLC teams perceived these tenets to be evident in their school and in how they worked as a team. Table 3 below indicates the number and type of teacher from each team that participated in the study and completed the survey instrument.  

**Table 3**  

*Study Participants Who Completed the Teacher Survey*  

<table>
<thead>
<tr>
<th></th>
<th>School A</th>
<th>School B</th>
</tr>
</thead>
<tbody>
<tr>
<td>Classroom Teachers</td>
<td>5 fourth grade teachers</td>
<td>4 first grade teachers</td>
</tr>
<tr>
<td>Support Teachers</td>
<td>0 support teachers</td>
<td>2 reading specialists</td>
</tr>
</tbody>
</table>

In School A, the survey was completed by the five classroom teachers on the team; the special education teacher who is part of this team did not complete the electronic survey. In School B, the survey was completed by the four first grade
classroom teachers who comprise the Team Lit group and the two reading specialists who also work with this group as part of Team Lit. A special education teacher who also is part of Team Lit did not complete the survey.

Each question on the survey was associated with at least one of the six tenets previously identified. Several questions on the survey related to more than one PLC tenet and therefore a decision was made to include a particular survey question in more than one tenet when reporting the data.

**Collaborative Culture**

Table 4 shows the level of agreement respondents from both School A and School B indicated was true of their school or team for the survey questions associated with the tenet of a Collaborative Culture.

As Table 4 indicates, the fourth grade PLC from School A perceives their school and team as demonstrating a collaborative culture in which trust and respect are demonstrated (100% strong agreement), staff are committed to improvement (100% combined strongly agree and agree) and feel comfortable observing one another’s classrooms (100% combined strongly agree and agree). A smaller percentage of teachers feel appropriate time is provided to engage in collaborative work (40% agree) and collective learning and sharing of practices (40%).
### Table 4

**Survey Results for Collaborative Culture**

<table>
<thead>
<tr>
<th></th>
<th>School A</th>
<th></th>
<th></th>
<th>School B</th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Strongly Agree</td>
<td>Agree</td>
<td>Disagree</td>
<td>Strongly Disagree</td>
<td>Agree</td>
<td>Disagree</td>
</tr>
<tr>
<td>A culture of trust and respect exists to support risk taking</td>
<td>100%</td>
<td>0%</td>
<td>0%</td>
<td>0%</td>
<td>20%</td>
<td>80%</td>
</tr>
<tr>
<td>Collegial relationships among the staff reflect a shared commitment to school improvement</td>
<td>80%</td>
<td>20%</td>
<td>0%</td>
<td>0%</td>
<td>60%</td>
<td>40%</td>
</tr>
<tr>
<td>The school schedule promotes collective learning and shared practice</td>
<td>20%</td>
<td>20%</td>
<td>60%</td>
<td>0%</td>
<td>40%</td>
<td>60%</td>
</tr>
<tr>
<td>Time is provided to facilitate collaborative work</td>
<td>0%</td>
<td>40%</td>
<td>40%</td>
<td>20%</td>
<td>20%</td>
<td>80%</td>
</tr>
<tr>
<td>Staff feel comfortable observing one another’s instructional practices</td>
<td>40%</td>
<td>60%</td>
<td>0%</td>
<td>0%</td>
<td>20%</td>
<td>60%</td>
</tr>
</tbody>
</table>

In School B, the first grade Team Lit group perceives their school and team as demonstrating a collaborative culture in which trust and respect are demonstrated (100% combined agreement), staff are committed to improvement (100% combined agreement) and feel comfortable observing one another’s classrooms (100% combined strongly agree and agree). The team also agrees (100% combined strongly agree and agree) that appropriate time is provided to facilitate collaborative work and for them to engage in the
sharing of practices and collective learning. In School B, a smaller percentage of teachers feel comfortable observing one another’s classrooms (80% combined strongly agree and agree).

**Collective Inquiry and Action Orientation**

Table 5

*Survey Results for Collective Inquiry and Action Orientation*

<table>
<thead>
<tr>
<th></th>
<th>School A</th>
<th></th>
<th>School B</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Strongly Agree</strong></td>
<td><strong>Agree</strong></td>
<td><strong>Disagree</strong></td>
<td><strong>Strongly Disagree</strong></td>
<td><strong>Strongly Agree</strong></td>
</tr>
<tr>
<td>School staff learn together and apply new knowledge to solve problems</td>
<td>80%</td>
<td>20%</td>
<td>0%</td>
<td>0%</td>
</tr>
<tr>
<td>Staff plan and work together to search for solutions to address diverse student needs</td>
<td>60%</td>
<td>40%</td>
<td>0%</td>
<td>0%</td>
</tr>
<tr>
<td>The school schedule promotes collective learning and shared practice</td>
<td>20%</td>
<td>20%</td>
<td>60%</td>
<td>0%</td>
</tr>
<tr>
<td>Working together, the staff seeks new information, acquires new skills, and applies new strategies to meet teaching challenges</td>
<td>40%</td>
<td>60%</td>
<td>0%</td>
<td>0%</td>
</tr>
</tbody>
</table>

Questions related to the tenet of Collective Inquiry and Action Orientation indicate the fourth grade staff from School A either strongly agree or agree (100% combined) that they work together to learn new knowledge, solve problems, and address
student learning needs and teaching challenges. However, time to work together collectively was viewed as problematic by 60% of the respondents.

In School B, 100% of respondents indicated agreement (100% strongly agree or agree) that they work together to meet diverse needs of students and seek and apply new information, skills and strategies to meet teaching challenges. This team felt that the schedule promotes their collective learning (100% combined agreement) but only 80% (combined agreement) felt that school staff learn together and apply new knowledge to solve problems.

**Shared Vision and Goals**

The fourth grade PLC group from School A revealed a high level of agreement (80% strong agreement and 20% agreement) that their school has a shared vision that focuses on student learning and 100% combined strong agreement and agreement that decisions are made in alignment with this vision. The fourth grade teachers feel that student learning in this school is viewed as broader than standardized test scores and grades (100% combined agreement). There was not universal agreement that a collaborative process exists in this school for developing the shared vision (20% disagree).
Table 6

*Survey Results for Shared Vision and Goals*

<table>
<thead>
<tr>
<th></th>
<th>School A</th>
<th></th>
<th></th>
<th>School B</th>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Strongly Agree</td>
<td>Agree</td>
<td>Disagree</td>
<td>Strongly Disagree</td>
<td>Strongly Agree</td>
<td>Agree</td>
<td>Disagree</td>
</tr>
<tr>
<td>A collaborative process exists for developing a shared vision among staff</td>
<td>0%</td>
<td>80%</td>
<td>20%</td>
<td>0%</td>
<td>20%</td>
<td>80%</td>
<td>0%</td>
</tr>
<tr>
<td>School goals focus on student learning beyond test scores and grades</td>
<td>20%</td>
<td>80%</td>
<td>0%</td>
<td>0%</td>
<td>20%</td>
<td>60%</td>
<td>20%</td>
</tr>
<tr>
<td>Decisions are made in alignment with the school’s values and vision</td>
<td>40%</td>
<td>60%</td>
<td>0%</td>
<td>0%</td>
<td>20%</td>
<td>80%</td>
<td>0%</td>
</tr>
<tr>
<td>The staff shares visions for school improvement that have an undeviating focus on student learning</td>
<td>80%</td>
<td>20%</td>
<td>0%</td>
<td>0%</td>
<td>0%</td>
<td>100%</td>
<td>0%</td>
</tr>
</tbody>
</table>

The first grade team from School B also revealed a high level of agreement (100% agree) that their school has a shared vision that focuses on student learning and that decisions are made in alignment with this vision (100% combined agreement). They indicated with 100% combined agreement that a collaborative process was used to create the vision. Not everyone agreed (20% Disagree) that the school goals focus on learning beyond test scores and grades.
Focus on Learning

The Focus on Learning tenet had the most survey questions associated with it. Questions associated with this tenet of a focus on student learning all received 100% combined agreement from School A teachers with the exception of one question that asked if professional development focuses on teaching and learning in which 40% of respondents disagreed. The fourth grade teachers indicated that they believe high expectations for student learning are set and are a part of the school vision, teachers assume shared responsibility for student learning and are willing to share ideas and work together to address student needs and improve learning, and staff are committed to programs that will do so.

In School B, survey questions associated with a focus on student learning all received 100% combined agreement from with the exception of two questions. Similar to School A, when asked if professional development focuses on teaching and learning, 40% of respondents disagreed. In addition, 20% of the School A Team Lit group disagreed that school goals focus on student learning beyond test scores and grades. All other questions associated with a focus on learning received 100% combined agreement from teachers in School A. They believe that staff create high expectations for student learning and assume shared responsibility for student achievement, are committed to programs that enhance learning, share ideas for improving student learning, and work together to search for solutions to address student needs. They also believe with 100% agreement that their school vision has an undeviating focus on student learning.
### Table 7

**Survey Results for Focus on Learning**

<table>
<thead>
<tr>
<th>Survey Item</th>
<th>School A</th>
<th></th>
<th></th>
<th>School B</th>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>School staff are committed to programs that enhance learning</td>
<td>40%</td>
<td>60%</td>
<td>0%</td>
<td>60%</td>
<td>40%</td>
<td>0%</td>
<td>0%</td>
</tr>
<tr>
<td>Professional development focuses on teaching and learning</td>
<td>40%</td>
<td>20%</td>
<td>40%</td>
<td>0%</td>
<td>60%</td>
<td>40%</td>
<td>0%</td>
</tr>
<tr>
<td>Staff informally share ideas and suggestions for improving student learning</td>
<td>40%</td>
<td>60%</td>
<td>0%</td>
<td>0%</td>
<td>0%</td>
<td>100%</td>
<td>0%</td>
</tr>
<tr>
<td>Staff are actively involved in creating high expectations that serve to increase the achievement of all students</td>
<td>40%</td>
<td>60%</td>
<td>0%</td>
<td>0%</td>
<td>40%</td>
<td>60%</td>
<td>0%</td>
</tr>
<tr>
<td>Staff assume shared responsibility &amp; accountability for student learning without evidence of imposed power or authority</td>
<td>60%</td>
<td>40%</td>
<td>0%</td>
<td>0%</td>
<td>20%</td>
<td>80%</td>
<td>0%</td>
</tr>
<tr>
<td>School goals focus on student learning beyond test scores and grades</td>
<td>20%</td>
<td>80%</td>
<td>0%</td>
<td>0%</td>
<td>20%</td>
<td>60%</td>
<td>20%</td>
</tr>
<tr>
<td>The staff shares visions for school improvement that have an undeviating focus on student learning</td>
<td>80%</td>
<td>20%</td>
<td>0%</td>
<td>0%</td>
<td>0%</td>
<td>100%</td>
<td>0%</td>
</tr>
</tbody>
</table>
**Mind Set of Continuous Improvement**

Survey results from the fourth grade team reveal general agreement that School A is committed to a mindset of continuous improvement; four out of the six questions associated with this tenet received 100% combined agreement. In particular, the question asking whether collegial relationships among the staff reflect a shared commitment to school improvement had 80% strong agreement. However, questions asking if staff members share the results of their practices or provide feedback to their colleagues regarding instructional practices did not receive 100% combined agreement.

School B’s responses to the survey questions associated with a mind set of continuous improvement reveal even less general agreement that their school is committed to continuous improvement. Three out of the six questions associated with this tenet received 100% combined agreement. Similar to School A, the question asking about whether collegial relationships among the staff reflect a shared commitment to school improvement had the highest level of agreement (60% strong agreement). Questions eliciting disagreement include a sustained and unified effort to embed change into the culture of the school (20% disagreement); individuals and teams applying and sharing new knowledge and results (40% disagreement) and staff members providing feedback to their peers (60% disagreement).
Table 8

Survey Results for Mind Set of Continuous Improvement

<table>
<thead>
<tr>
<th></th>
<th>School A</th>
<th></th>
<th></th>
<th></th>
<th>School B</th>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Strongly Agree</td>
<td>Agree</td>
<td>Disagree</td>
<td>Strongly Disagree</td>
<td>Strongly Agree</td>
<td>Agree</td>
<td>Disagree</td>
<td>Strongly Disagree</td>
</tr>
<tr>
<td>School exhibit a sustained and unified effort to embed change into the culture of the school</td>
<td>40%</td>
<td>60%</td>
<td>0%</td>
<td>0%</td>
<td>80%</td>
<td>20%</td>
<td>0%</td>
<td>0%</td>
</tr>
<tr>
<td>Collegial relationships among the staff reflect a shared commitment to school improvement</td>
<td>80%</td>
<td>20%</td>
<td>0%</td>
<td>0%</td>
<td>60%</td>
<td>40%</td>
<td>0%</td>
<td>0%</td>
</tr>
<tr>
<td>Staff informally share ideas and suggestions for improving student learning</td>
<td>40%</td>
<td>60%</td>
<td>0%</td>
<td>0%</td>
<td>20%</td>
<td>80%</td>
<td>0%</td>
<td>0%</td>
</tr>
<tr>
<td>Individuals and teams regularly apply new knowledge and share the results of their practices</td>
<td>20%</td>
<td>60%</td>
<td>20%</td>
<td>0%</td>
<td>20%</td>
<td>40%</td>
<td>40%</td>
<td>0%</td>
</tr>
<tr>
<td>Staff members provide feedback to peers related to instructional practices</td>
<td>20%</td>
<td>40%</td>
<td>40%</td>
<td>0%</td>
<td>20%</td>
<td>20%</td>
<td>60%</td>
<td>0%</td>
</tr>
<tr>
<td>The staff collaboratively reviews student work to share and improve instructional practices</td>
<td>20%</td>
<td>80%</td>
<td>0%</td>
<td>0%</td>
<td>20%</td>
<td>80%</td>
<td>0%</td>
<td>0%</td>
</tr>
</tbody>
</table>
**Results Orientation**

A focus on examining results was perceived by the fourth grade team in School A to be evident but was more prevalent (100% combined agreement) as it relates to examining student work than it was to sharing the results of instructional practices (80% combined agreement). This was also true for School B. The first grade Team Lit teachers indicated 100% combined agreement for reviewing student work but only 60% combined agreement for sharing the results of their practices.

**Table 9**

*Survey Results for Results Orientation*

<table>
<thead>
<tr>
<th></th>
<th>School A</th>
<th>School B</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Strongly Agree</strong></td>
<td>20%</td>
<td>20%</td>
</tr>
<tr>
<td><strong>Agree</strong></td>
<td>60%</td>
<td>40%</td>
</tr>
<tr>
<td><strong>Disagree</strong></td>
<td>20%</td>
<td>40%</td>
</tr>
<tr>
<td><strong>Strongly Disagree</strong></td>
<td>0%</td>
<td>0%</td>
</tr>
</tbody>
</table>

| **Individuals and teams regularly apply new knowledge and share the results of their practices** | 20% | 0% |
| **The staff collaboratively reviews student work to share and improve instructional practices** | 20% | 0% |

Overall, the survey revealed that the philosophical tenets commonly associated with PLCs are perceived to be evident in both School A and B. Survey results indicate a collaborative culture exists in both schools. The schools have developed shared visions and a focus on student learning. Results show staff members are willing to work together to learn and apply new ideas to meet student needs and improve learning and staff
examine and use the results of their efforts to improve teaching and learning.

**Results from Focus Group Interviews and Observations of PLC Meetings**

The focus group interviews and observations of PLC meetings conducted in both School A and School B were also used to document evidence of the existence of the six philosophical tenets previously listed. Questions asked in the semi-structured interview (see Appendix B) were developed to obtain information regarding the existence of the philosophical tenets and elicit examples of how these tenets are utilized in the group’s work of planning, assessing and analyzing student learning. Observations of actual team meetings were conducted to see first hand how the tenets influence each team’s work together. The interview and observations of grade level PLC meetings were audio-recorded and later transcribed word for word by the researcher. As previously described in Chapter III, the transcriptions were reviewed multiple times specifically looking for examples of each of the six tenets. A response was coded according to a pre-determined color code corresponding to the six tenets whenever a tenet was directly mentioned or inherent in an interview response or a statement made during an observation. Table 10 provides a frequency count of these coded responses for both cases (Schools A and B).

While Table 10 reveals there were differences between the two case schools in regards to the frequency count of how often each tenet was either directly discussed or inherent in an interview response or a statement made during an observation, there also were quantitative similarities between the two cases. The following generalities can be found in the data:

- The tenets of Collaborative Culture, Focus on Learning and Results Oriented
were the tenets most frequently discussed or observed at both case sites.

- The tenet of Shared Vision and Goals was coded the least amount of times for both case sites.
- The tenet of Collective Inquiry and Action Orientation had the second lowest count of coded responses at both schools.

Table 10

*Frequency Count of Tenets*

<table>
<thead>
<tr>
<th>Collaborative Culture (CC)</th>
<th>School A: 4th Grade Team</th>
<th>School B: 1st Grade Team</th>
<th>Total</th>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td>Focus Group Interview</td>
<td>59</td>
<td>59</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Observation of PLC Meetings</td>
<td>41</td>
<td>27</td>
<td>100</td>
<td>86</td>
</tr>
<tr>
<td>Collective Inquiry / Action Orientation (IA)</td>
<td>16</td>
<td>16</td>
<td>25</td>
<td>44</td>
</tr>
<tr>
<td>Shared Vision &amp; Goals (SVG)</td>
<td>17</td>
<td>17</td>
<td>18</td>
<td>25</td>
</tr>
<tr>
<td>Focus on Learning (FOL)</td>
<td>22</td>
<td>22</td>
<td>42</td>
<td>87</td>
</tr>
<tr>
<td>Continuous Improvement (CI)</td>
<td>32</td>
<td>32</td>
<td>41</td>
<td>53</td>
</tr>
<tr>
<td>Results Oriented (RO)</td>
<td>18</td>
<td>18</td>
<td>43</td>
<td>87</td>
</tr>
</tbody>
</table>

Results orientated
In addition to examining the data from a quantitative perspective, it is also important to more closely examine the data for each site from a qualitative perspective to see what themes emerged relative to the philosophical tenets and how they influence each team’s efforts to develop and use common formative assessments to improve student learning.

The next section will provide a detailed examination of how each of the six tenets was seen in the observations or inherent in the interview responses for each case site. Examples of how these tenets influence how each team works together, how they think about student learning, how they plan for instruction, how they measure student learning and how they respond to results of student learning are shared for each school to provide a complete picture of how the tenets influence how each team operates. Similarities and differences in the themes between the two schools will be briefly discussed with a more complete analysis provided in Chapter VI.

School A Themes

Collaborative Culture

Examples of School A demonstrating or discussing elements related to a collaborative culture was the tenet of PLCs that was seen most frequently with 100 total coded examples found in the transcribed interview and observation notes. The number of responses or examples indicating the existence of a collaborative culture in School A is more than double the number for any other tenet examined. Themes that emerged from the interview responses and observed PLC meetings that depict a very strong existence of a collaborative culture in School A include:
**Sense of community.** When asked about a common vision and values, members of the team responded that they work as a “community of collaborators” and that there is a real “sense of community and openness” both at the school and team level. In respect to their team, they noted that they always “work together” and are a “community of loving people.” A feeling of family was evidenced among the team members throughout the interview and observations.

**Mutual trust/respect.** Another common value that was noted by the fourth grade teachers in School A was that teachers in the school respect each other as colleagues and “treat each other with high regard.” As members of their grade level PLC, they came across as a tight knit group who recognize each other as individuals, understand and respect their differences and use each other’s strengths to enable the team to function efficiently and effectively.

**Flexible/cooperative.** When asked how the vision and values influenced the team’s work together, one of the teachers on the team said, “One of the big defining qualities of this team is the flexibility. … If someone says I have come up with a great project that ties into the unit, everyone is going to try it.” In discussing a review test that was developed, the team shared that they had some differing opinions on what should be included and how it should be graded but they worked together to reach consensus on it as a team.

**Work together to plan curriculum, instruction and assessment.** The 4th grade team shared how they spent time over the summer collaboratively mapping out their curriculum for the entire year, determining what assessments would be given and when,
developing a pacing guide, etc. They all use this map to guide their instruction during the year and will discuss and revise pacing as needed. During the interview, they also discussed how time at PLC grade level meetings is frequently used to plan specific instructional units and to share ideas for lessons.

An example of this type of work was seen in one of the observed PLC meetings. A significant portion of one meeting was used to discuss the next upcoming science unit. The teachers discussed and determined when to start the unit, pacing within the unit, instructional lessons and resources that could be used, a culminating project to include and a rubric for the project. During another grade level meeting, the team discussed and decided on changes to an existing math test.

**Share ideas/information.** When asked how teams member share their professional expertise with each other, the first response from a team members was, “We do all the time. Probably, almost too much.” Examples of sharing mentioned during the interview included specific ideas for instruction, what worked or did not work with a particular lesson, ideas involving use of their Promethean boards, rubrics or formative assessments, information gained from attendance at conferences, and management/organizational ideas. As one teacher summed it up, “everyone cannot do enough for each other.”

At one of the observed grade level PLC meetings, a member of the team shared an idea she had gained from a conference that she thought could be used as a good formative assessment of reading comprehension strategies used with non-fiction text. Team members asked clarifying questions, discussed the activity and its value as an assessment
tool, shared various non-fiction pieces of text that they could use this with and then agreed it was something they all should try.

**Ask for input/give feedback and suggestions.** This 4th grade PLC team is willing to go beyond merely sharing ideas with one another and will actively seek out advice and input. An example was shared in the interview about one teacher seeking some advise from a team colleague on a particular piece of parent communication they were struggling with. They are not afraid to discuss a lesson that did not go well or a particular student they are concerned about and will respectfully provide each other with suggestions. At one of the PLC meetings, a teacher asked his colleagues for ideas for differentiating instruction to support a student who struggles with vocabulary. Team members asked some clarifying questions to gain greater insight into the student’s needs and then shared resources they have found helpful and various strategies they have used to pre-teach vocabulary and provide more guided practice. The group determined there were not enough students with similar needs among all of their classes to form an intervention group, but decided that developing some on-line resources that all students could access might be helpful for many students on the team. While they have not formally done a lot of observations in one another’s classrooms, it would seem that they would feel comfortable doing so and provide each other with feedback.

**Provide assurance/support and push one another to be their best.** Even the most veteran member of the team confessed that she looks to her colleagues for ideas to keep her teaching fresh and for assurance that she is “doing it right” particularly when it comes to use of technology and new instructional approaches. Another team member
commented that she relies on her team members to help her become a better teacher and that “they provide me with the motivation to do better.” Team members make each other feel valued and push each other to be the best they can for kids. As one team member commented, “The kids are all getting the best of the best. It has gone through the filter.”

**Share the workload/hold each other accountable.** The 4th grade PLC collaboratively discusses tasks and responsibilities that have to be accomplished and determines how to divvy up and/or share the workload. In one observed team meeting, the group discussed how they wanted to approach learning how to input RTI assessment data into an electronic database. They decided that while one teacher was primarily serving as the interventionist at that current time, it would be beneficial for everyone to know how to input and access the data in the system. Other examples included determining who would rework some questions on a particular math assessment and who would create the on-line vocabulary lists tied to their social studies and science units.

Teachers on this team also discussed how they hold each other accountable to give 100% of themselves to the team and to the students. They discussed how this sense of mutual responsibility in part stems from the way they flexibly group students across the classrooms for math instruction, for reading interventions and consequently for social studies and science instruction. As one teacher said, “I have total faith in these people that they are doing just as good a job as I would do in my classroom.” The teachers shared they hold a similar level of dedication and passion and a belief that all of the students on the team are their students. Success was defined as “the kids ALL (emphasis added) do well.”
Dedicated time together. Even though the schedule this year did not allow for this particular grade level team to have common planning together on a daily or weekly basis as had been the norm in the past, this team made a commitment to eat lunch at another time and meet once a week for their PLC during their students’ lunch period. A team member commented this time is “sacred, you cannot cancel it for any reason unless you are not here, because we need each other.”

Constant communication. In addition to their dedicated weekly time, team members commented that they meet together to plan and discuss instruction and student learning on a constant basis – during school hours, before and after school and outside of school as well. They stated that this helps them resolve questions or concerns on a timely basis and allow their weekly time together to be used more efficiently.

While a collaborative culture was clearly the most prevalent tenet found in the data, three other characteristics of PLCs emerged as being equally present in School A. Having a results oriented philosophy, demonstrating a focus on student learning, and maintaining a mindset of continuous improvement are common philosophical tenets associated with PLCs that were displayed more than 40 times in the interview and/or observed grade level team meetings.

Results Oriented

Responses related to a focus on results of student learning were coded 43 times between the interview and the observations with more coded responses documented in the observations than in the interviews. Examples of how an orientation on results was evidenced in the interview and observed fourth grade PLC meetings include:
Expectation that a rubric /assessment will be a part of all unit plans. It was clear from several different grade level team discussions that there is an expectation that learning needs to be measured at least at the end of instruction if not also before and during instruction. The teachers spent considerable time discussing a project and related rubric they would use with their science unit on Force and Motion. They also discussed an upcoming math assessment and a new idea for a reading assessment. As part of these discussions the teachers examined what skills and strategies are being measured, what level of understanding is being assessed and goals for expected level of performance on the assessment.

Determining who needs additional benchmark assessments. The 4th grade teachers spent considerable time at one meeting discussing which students on the team should be administered the MAP test again in the winter as a way to benchmark and monitor their learning. They began by looking at all students who fell below the 25% on the Spring MAP assessment. They also discussed and considered students who were receiving a reading intervention and analyzed their former MAP scores as well as results from other assessments to make decisions about whether they should be included in the group to test. As part of this discussion, the value of assessing students to monitor progress/growth over time was re-affirmed.

Use of pre-assessment results to plan instruction and post-assessments to measure growth. Pre-assessments were discussed in several different instances during the two observed team meetings. Teachers either talked about the value of giving a pre-assessment to determine instructional areas to focus on or specifically discussed results
from a pre-assessment that indicated what skills were particularly difficult for students. The use of pre and post data with intervention groups was also discussed. Teachers were pleased to share in a general manner the growth that students had made from pre-test to post-test. Analysis of actual data results was not, however, seen in either of the observed team meetings.

**Use of variety of assessments in small group interventions.** From the conversations focusing on the RTI interventions that one classroom teacher provides to eligible students from all five classrooms, it became apparent that a variety of assessments are used to determine who needs the intervention in the first place and a variety of assessments are used to monitor student learning in these groups on a frequent basis and determine if the interventions are successful at closing the gap. The group is just learning how to document interventions and data in an electronic database and spent time at one of the meetings discussing what assessment results to include in the data management system.

**Discussion of individual student needs and learning growth of students.** Throughout the two grade level PLC meetings that were observed, teachers interjected short conversations regarding individual students, their instructional needs and the growth they were demonstrating. These conversations tended to be anecdotal in nature and were not necessarily planned items on the agenda. The grade level team meets with the full service support team on a regular basis approximately every six weeks to discuss student learning, analyze specific data and plan who is in need of interventions and/or the next level of problem solving.
Discussion of common district assessments. At one of the observed grade level PLC meetings, the group briefly discussed the results from a common district math assessment that was recently given. They shared the percentage of students from each of their math classes that met expectations and felt that the “numbers were low.” While a comment was made that the assessment was tough, there was no further discussion of how the results could be used or how instruction could be improved. Instead a member shared that this was a pilot year and that the assessment would likely need to be tweaked if other schools had similar results.

Celebrate when students do well/upset when they do not. The classroom teachers shared they were “very distraught” when their students did not perform as expected on a district developed common assessment in science. After grading the assessments together to gauge if they were “all on the same page of grading,” they discussed how the test was administered as well as how the major concepts were taught and practiced. From this discussion, they determined that they had not administered the assessment appropriately and that the students needed more hands on practice. As one teacher said, “We bombed it, but not the kids.”

Determine ultimate success by results of student learning. When asked how this team would define success, they all agreed that success is defined by student learning, by the results they get. However, numerical results alone do not define success for this team. They want the students to be happy, to love school and to all be learning and growing.

Recognition that more training on use of data is necessary. The team admitted
that the amount of data they collect on students is growing but that they need more training and practice on how it use it effectively. One teacher who serves on the building’s Leadership Team acknowledged that this is something the school is struggling with and has made a goal.

**Focus on Learning**

Another characteristic tenet of PLCs that was seen in the transcribed data is a strong focus on what and how much students learn vs. just focusing on what was taught. Forty-two responses were coded as illustrative of this tenet in the focus group interview and in the grade level team meetings. Themes that emerged from this coded data include:

**Commitment to students’ learning.** During the focus group interview, the 4th grade team referred to the school’s mission of “Learning for all, working together, doing whatever it takes” and stated that they are serious about their students’ learning. Another teacher added, “In this building every single person goes above and beyond for kids.” As previously mentioned, the teachers on this team are upset if students don’t do well and measure successful student learning in broader terms than scores on a test. They want students to love school and to love learning.

This seriousness about student learning was observed in the grade level meetings in how they discussed what they wanted students to learn and how they would measure this learning. It was also seen in their analysis of how well students learned and what they would do next to improve learning.

**Focus on what students learn.** Throughout the interview and the observed grade level meetings, it was apparent that this team spends time and energy on clearly
establishing what they want students to know and be able to do. They have a very
detailed curriculum map in which they have identified the standards they want students to
know, matched where these standards are taught in each instructional unit and identified
how the desired learning will be measured. Their report card has also been re-designed to
provide information about learning in relation to these standards. In their conversations,
they referenced specific standards, including the new Common Core standards, and kept
these learning targets at the center of their instructional planning.

Specific examples of this focus on learning targets was seen in the group’s
discussion of a possible new way to effectively assess students’ use of reading strategies
and comprehension in non-fiction text. It was also seen when the group was discussing
an upcoming science unit and determining a student learning project they would all have
their students participate in as a culminating activity. As they discussed options, they
focused on the skills and concepts that students would need to learn and apply. The
group’s examination of an upcoming math assessment also showed evidence of this focus
on learning targets. The group discussed specific assessment items and what concepts
they assessed as well as what levels of understanding they measured. As they decided on
some revisions to this assessment, the group was purposeful to maintain inclusion of
higher level questions in the assessment.

**Focus on how well students learn.** Responses to questions asked in the focus
group interview and discussions transcribed during the grade level team meetings,
documented this group’s commitment to examining how well students learn the intended
learning targets. As one teacher stated, “Trying to bridge the gap. That is mostly what is
driving our PLCs."

While a formal review of data for all students was not seen during the two observed grade level meetings, the team did spend time during these two meetings making plans to ensure that the lowest students’ learning is being frequently monitored, reporting on overall growth from pre-tests to post-tests for students in intervention groups, and discussing how students’ performed on a recent district developed common assessment. In addition, discussions of individual students and their specific learning needs were interwoven into many different agenda topics. Examples include discussions of particular ELL students and their specific language needs, discussion of what flexible group a child should be placed in and discussion of learning accomplishments for a specific student who struggles. These analyses of students’ learning often include discussion of a student’s self-esteem as well as their academic progress.

**Taking the next step to ensure learning.** Thinking about the next step to take when students do not perform as well as desired was also a theme that emerged in both the interview responses and observed grade level meetings. In particular, with the team’s new approach to having a classroom teacher provide RTI interventions as opposed to a learning specialist, the team demonstrated investment in looking at growth over time for these students and thinking about who still needed interventions and how the intervention might need to change to accomplish more growth as well as discussing what other interventions these or other students might need. The 4th grade team also discussed examples of how they take steps to ensure student learning by reviewing assessments with students after they have been administered, pointing out areas of confusion for
students and re-teaching key concepts.

In addition to just focusing on students who don’t do well, the teachers also discussed how they try to plan differentiated instruction for students on the high end so that they are challenged and continuing to learn and grow.

**Mindset of Continuous Improvement**

Another characteristic tenet of PLCs that was seen in the transcribed data over 40 times was a mindset of continuous improvement. Forty-one total responses were coded in the focus group interview and in the grade level team meetings as illustrative of this proclivity to continuously be thinking of how to improve. It is important to note that comments related to this tenet made during the focus group interview were coded 32 times where as only nine examples of this tenet were seen or heard during the observed grade level meetings. Themes that emerged from this coded data include:

**Willingness to try new ideas.** The 4th grade team from School A demonstrated willingness to try new ideas, step up and take some risks. Teachers on this team are open to sharing new ideas with one another and are confident that their team members will see value in their ideas and be willing to try to incorporate the new idea. As one team member said, “We are so willing to go with the flow and try new things.” Another added, “People step up when they want to try new things,” and they will take someone else’s idea but also add on to it to make it work for them. An example of this willingness to try new ideas was seen in the group’s response to a new idea for assessing reading comprehension. It was also seen in the group’s decision to take a team member’s suggestion regarding on-line vocabulary supports for students and working
collaboratively to create these lists tied to their social studies and science units.

**Continuous revisions of units, lessons and assessments.** Although the 4th grade team has developed a carefully aligned curriculum map for their grade level curriculum, they displayed a willingness to be engaged in continuous evaluation and revision of the units, lessons and assessments within their curriculum. In the focus group interview, one teacher commented, “we will modify or scrap an instructional activity because we did not think it was driving us to the objective we wanted to get to.” This level of review and revision was also observed in the grade level team meetings. In one meeting, the team examined and made some minor changes to the scope and sequence, pacing, resources and assessment of an upcoming science unit. A particular area of focus for the team’s review of their curriculum is to make changes to existing units to better align with the new Common Core Standards. For example, the group evaluated the pacing and resources used in an eco-system unit in an effort to incorporate more non-fiction reading and writing into the unit. As part of one of the building’s goals for the year, the group is also attempting to incorporate more instructional activities that develop a deeper level of understanding. This focus on higher level thinking also extends to the assessments the team uses. The teachers spent time during one of the PLC meetings observed to review and develop some improvements to a math assessment by making sure some questions were still assessing higher level thinking skills but revising the language of the questions to be clear for all students. The team shared that they had received training on standards based assessments and spent considerable time developing assessments; however, “over the years we have continued to develop and revise assessments.” One newer teacher on
the team will be doing an audit of some of the grade level’s assessments as part of his work with his mentor. His suggestions for additional revisions will be shared with his team members.

**Analysis of assessment data to make changes in future instructional plans.**
Results from both summative assessments and more formative assessments are used to make instructional improvements. For example, the team discussed how they analyzed results from the eco-system assessment and determined that next year when they teach this unit, they need to give more hands on practice with concept of flow of energy. They also discussed the need to review data from multiple assessments to determine next steps to take with a reading intervention group.

**Willingness to meet frequently and work hard to accomplish goals/tasks.**
Multiple times in the focus group interviews and grade level meetings, the team made reference to their willingness to meet frequently to accomplish their goals. Meetings occur during their regularly scheduled PLC time, other times throughout the day, after school and on weekends. Individual members are also willing to take on tasks and responsibilities that will benefit the group. For example, one teacher volunteered to work on weekends to develop the on-line vocabulary lists for the team.

**Reflective conversations.** The team engages in reflective conversations to aide their improvement efforts. After teaching a unit or particular lesson, the team shared in the interview that they would frequently ask how they would do things differently and also analyze what worked well.

In one observed grade level meeting, they spent considerable time analyzing
whether they were including an appropriate amount of students and the right students for mid-year MAP assessments. They carefully explored what information they were going to get from the assessment and how it would help them meet the student’s needs before making final decisions.

**Motivation to continue to learn and grow.** A strong commitment to professional learning at both the 4th grade team and the school level was revealed in the data. The teachers shared how faculty meetings function as PLCs and frequently incorporate book study, lesson study, as well as modeling of instructional ideas and strategies, etc. At the team level, teachers shared how they are given a half day of release time to share information learned from conferences, professional reading, etc. with their colleagues and plan how this information can be used to improve instruction.

The members of the 4th grade team at School A gave multiple examples of how they push each other to do their best and combine and utilize the strengths of all to improve as a group. As one teacher said, we “pull each other’s strengths in and combine it to make each other better.” Another teacher commented that, “I want to be the best teacher I can and I want to learn. And that is what this team provides me with is the motivation to do better.” A veteran teacher commented that she does not want to do the same things year after year and that she uses the other younger teachers on the team for new ideas particularly as it relates to technology and new instructional ideas. Team members are also able and willing to identify areas for their own growth. For example, when discussing use explicit use of data, a teacher said, “our school is struggling with how to use data more effectively. That is something we are trying to figure out and work
towards.”

Collective Inquiry and Action Orientation

A philosophical tenet associated with PLCs that was coded less frequently in the data stemming from School A’s focus group interview and observed grade level meetings, was a commitment to learn and improve through engagement in collective inquiry and action oriented response. Twenty-five responses were coded as examples of the groups’ explicit use of inquiry and action. The examples that depict this tenet in action at this school revolve around the following themes:

Collective discussion of assessments. The school conducts their staff meetings as PLCs with a focus on professional learning and collaboration on instruction and assessment. The 4th grade teachers shared an example where at one staff meeting all staff graded an extended response together to see if staff could develop common, shared criteria for levels of student performance.

At the fourth grade team level, one observed meeting focused on determining the six different assessments that would be used to identify the need for RtI interventions and working on developing spreadsheets to show data from these multiple sources. At another meeting, the group analyzed student results from the new district common assessment on eco-systems. The fourth grade teachers talked about how they graded them together and will be going further to examine actual student work on the assessment together.

The fourth grade team discussed how they critically develop assessment questions for standards based assessments paying particular attention to the level of Bloom’s
taxonomy of each question. This has also led them to examine the level of rigor of current assessments and determine which ones need revision. One of the newer members of the team will be conducting an assessment audit as part of his professional growth requirements as a new teacher and will share his findings with the team. The team has also developed common descriptors for their standards based report.

**Collective work on curriculum and instruction.** The team functions in an action oriented manner and spends time collectively developing their curriculum and planning for instruction. They shared how last summer they developed a year-long curriculum map that would be used to guide instruction throughout the year, putting specific assessments into this map and determining when these assessments would be administered. As they have moved through the year, they identify areas for further lesson or resource development and divvy up the work amongst themselves. For example, the team is trying to incorporate more technology into instruction and is therefore developing lessons to use with Promethean boards.

**PLC goals and agenda topics based on professional growth needs of teachers and instructional needs of students.** The building leadership team establishes some of the goals and agenda items that each grade level PLC will focus on. These are based on the building’s four improvement areas and typically call for collective inquiry and action on the part of the grade level team. For example, each grade level team may be asked to develop a lesson based on a reading strategy that was discussed and modeled at a building staff faculty meeting.

Each individual grade level team also establishes some of what they will focus on
at upcoming grade level PLC meetings based upon the needs of their students. For example, in one observed 4\textsuperscript{th} grade PLC meeting, they spent time discussing past assessment results as well as current performance to determine which students needed to take a mid-year MAP assessment.

**Shared Vision and Goals**

A distinctive characteristic of an effective PLC is a shared sense of vision and shared goals. There were 18 coded responses that demonstrated evidence that School A and the 4\textsuperscript{th} grade team have a shared vision and goals. Seventeen (17) of the coded responses were found in the interview responses. While this may be the lowest number of coded responses for any of the 6 tenets examined, several themes that emerged regarding this school’s and team’s shared vision incorporate other tenets such as a Focus on Learning, Results Oriented and a Collaborative Culture. Comments or examples of a Shared Vision and Goals were only coded in the transcripts of the interview or grade level team meetings if a response distinctly described a commonly held characteristic of the school’s or the team’s culture, referred to a shared commitment, or directly mentioned the District or building’s mission or a specific goal of the building or team. For example, a response indicative of a Collaborative Culture was not double coded as evidence of Shared Vision and also evidence of a Collaborative Culture.

The school and 4\textsuperscript{th} grade team have developed a common vision that incorporates the following themes:

- **Sense of community and emotional safety for all students and staff.** When asked to describe the common vision of this school, in separate interviews both the
principal and the fourth grade team talked about building and fostering a real sense of community for both students and staff members. Both also mentioned that one year the school took on a Wizard of Oz theme and incorporated the mantra of “There is no place like home.” Developing a climate of emotional safety and support in which students feel protected and confident to put their best efforts into learning and teachers feel confident and supported to put their best efforts into teaching were also mentioned in the interview responses. The respectful and collaborative culture that was previously described in the Collaborative Culture section of this chapter contributes to the sense of community observed in School A and an emotionally safe learning environment. As the principal noted, when trust exists in a team, teachers can be vulnerable with each other and turn to one another for guidance and support in how to meet students’ needs.

**Focus on learning of all students.** Both the principal and the fourth grade teachers also shared that the school’s vision incorporates an extremely strong focus on the learning of all students. As one teacher on the fourth grade PLC stated, “Our school really adheres to the district’s mission statement of: Learning for all, working together whatever it takes.” The 42 previously described coded responses demonstrating a Focus on Learning provide evidence of this school’s vision and commitment to student learning. As one 4th grade teacher shared, “every single person goes above and beyond for kids.”

**Focus on professional learning.** In addition to student learning, data from the interviews and observations also revealed that School A is also committed to advancing the learning of all staff members. The teachers shared that faculty meetings are organized as PLCs and focus on promoting professional learning through book studies,
sharing of instructional strategies and ideas, modeling of lessons, examination of student work, vertical articulation groups and other activities in which the staff learns collaboratively. Data from the 4th grade team focus group interview and the observed meetings also provide evidence of this team’s commitment to their own professional learning. The team discussed how their time together is seen as a priority that must be honored because they “need each other.”

**Common goals that are worked on collectively by all.** The principal and teachers on the 4th grade team discussed several common goals that the building was working on including advancing students higher level thinking skills and meta-cognition, developing new ways to measure and assess these higher level thinking skills and reading comprehension strategies, more effective analysis and use of data from assessments and using this information to plan RTI interventions. Teachers also discussed district goals relating to modifying the curriculum to integrate the Common Core standards and advancing the use of common assessments in science and social studies.

**Passion for teaching.** Another unifying aspect of this school’s vision is a passion for teaching. As a 4th grade teacher commented in the interview, “Everybody in this building, you can just tell they love it. They love teaching and that is a common thread among everyone.” Or as another member of the team commented later in the interview, “you can see immeasurable passion in this building.” The principal noted in her interview that when hiring she looks for people who are “willing to go 110% for each child.” When discussing their own team, a 4th grade teacher said, “we are all very driven and show a high level of dedication to the job.”
School B Themes

Collaborative Culture

The four first grade classroom teachers and three support personnel who comprise the Team Lit PLC group from School B provided strong evidence of the existence of a collaborative culture in their team. Examples of this team demonstrating or discussing elements related to a collaborative culture were found 86 times in the transcribed interview and observation notes. A Collaborative Culture along with a Focus on Learning and a Results Orientation were the top three coded tenets, with each having 86 or 87 coded examples. Themes that emerged from the interview responses and observed PLC meetings that depict a very strong existence of a collaborative culture in School B include:

Sense of community. When describing themselves as a PLC, one Team Lit member said, “PLC is not a set time. A PLC is the idea that you are a community and that these are our kids and we are constantly communicating and looking at what we can do to help these kids.”

The team functions together tightly. As one team member said, “Team Lit time is only 30 minutes a day but it has so influenced my thoughts, how I organize my classroom.” The team also recognizes the value of collaborative decision-making. While individuals may have their own ideas of how something should be approached, members will try someone else’s or “the team way and everyone will see how it works out.”

Collective responsibility for learning of all students. The first grade Team Lit concept is based on the construct of collective responsibility for student learning.
Teachers on this team flexibly re-group students on a continuous basis to provide daily opportunities for more differentiated instruction. As one teacher described their work, “It is a team effort. It is not one teacher with their kids. These are our kids.” This belief permeated all discussions. It also translated into group ownership of problems and how to collaboratively solve them. This was evident throughout one of the observed PLC meetings in which the team discussed what students needed additional intervention, a “third dip” as they called it, and how this could be scheduled into the reading specialists’ already full schedule. As the facilitator for the team said, “We will figure it out. That is the beauty of all of these minds at one table.”

The team brainstormed several ideas for possible changes to the schedule and then decided to collectively meet with the principal. As a result of this meeting, they were able to make some immediate changes as well as establish some parameters and guidelines that would be used by the whole grade level in the future.

**Mutual respect.** The team showed evidence of a belief that all members have valuable contributions to make. As one member stated, “I think we try to value everyone’s opinions, listen to everybody, respect what they are saying.” Another said, “Everyone has a voice in everything that we are doing and we make sure everyone is adding their ideas and speaking up. If they are not, then we encourage them.” The group also showed evidence that they recognize and use each other’s strengths. For example, they may turn to several team members who have more in-depth knowledge of reading for guidance on particular kids or general direction for the group as a whole. One team member serves as the facilitator for the group but it was said that it really is a “shared
experience” where anybody can add agenda items and “everyone keeps everyone kind of in line.”

**Work together to plan curriculum, instruction and assessment.** The 1st grade Team Lit group shared how they have developed a common curriculum for developing their student’s early literacy skills. In particular, they referred multiple times to the “common language” they had decided upon and felt that it served as the “unifying element for all of us” as well as a benefit in parent communication. During the interview, they discussed how time at their PLC meetings is frequently used to plan specific instructional lessons. In addition to common curriculum and lessons, the team also has developed common benchmark expectations for student progress throughout the year and common ways to measure student learning. Throughout the interview and observed PLC meetings, the group frequently referred to a child’s guided reading level or score on a benchmark assessment to help describe and define a student’s literacy development. Common classroom routines have also been determined and are used to help students as they work with different teachers over the course of the year.

**Share ideas/information/resources.** The Team Lit PLC works as a collaborative group sharing data, instructional ideas and resources, all in the interest of meeting students’ needs. As one team member expressed it, “It is that mentality: it is not mine. That means our kids, our materials, our time, our classroom space.” This was seen in one of their observed meetings. Teachers shared data results from a recent developmental spelling assessment they had given all students on the team. They discussed how the data could be used to determine what spelling skills students had mastered, what skills they
needed to work on and how students could be grouped for instruction. The team members then shared ideas for keeping spelling word work engaging for students and discussed the resources they had available for all to use. One member shared some spell check lists of words that can be used for pre-assessing students.

**Ask for input/give suggestions.** Teachers on this team are willing to ask for input and take and use ideas from their colleagues as well as provide suggestions to one another. There is a strong focus on problem solving in which the driving question is, “How do we work together to figure out what to do to help each student or group of students learn?” They discuss the progress of each student on a regular basis and provide suggestions for how to differentiate to meet a particular child’s needs.

**Support and push one another to be their best.** The Team Lit PLC group in School B is a highly motivated group of teachers. As one member of the team commented, “We have high expectations of ourselves as well as the rest of the team.” Another shared, “We are so proud of what we do and we are so passionate.” Of particular note is the support for new people on the team that was evidenced in the interview and observed team meetings. The group utilizes its strong level of collaboration and its clearly defined common curriculum to help new members be successful.

**Share the workload /hold each other accountable.** Everyone on the team including the newest members and the teacher associates, who also work with the students as part of the group, are valued and expected to be contributing members of the team. As one team member said, “This is really a shared effort. Everyone on this team
holds their own. They step up to the plate and everyone helps to carry the load.” For example, the group may enlist the help of the reading specialists to administer some Individual Reading Inventories or they will determine how to “divide the responsibilities” for creating SMART Board lessons to use when teaching a specific skill. Several times, the group shared that they hold themselves accountable for student learning but also hold each other accountable as well. As one teacher said, “that is the piece that is so important. It is so below the surface level, it is so deep that people can miss that.”

**Constant communication.** In addition to their regularly scheduled weekly lunch time meeting to discuss Team Lit, the group also meets on a weekly basis to discuss Math and with the entire first grade team of seven teachers to discuss common topics related to instruction, assessment, special events, etc. The Team Lit group also revealed that they meet on an ad hoc basis throughout the week to discuss instruction for a particular student or group of students.

Similar to School A, in addition to a Collaborative Culture, School B demonstrated strong evidence of a results oriented philosophy and a focus on student learning. These three common philosophical tenets associated with PLCs were the tenets displayed most frequently in the interview and/or observed grade level team meetings.

**Results Oriented**

Responses related to a focus on results of student learning were coded 87 times between the interview and the observations with more coded responses documented in the interview than in the observations of PLC meetings. Key ideas regarding use of results and examples of how this orientation was evidenced in the interview and observed
first grade Team Lit PLC meetings include:

**Defined system of assessments (benchmark, formative, and summative).** The first grade Team Lit group uses a variety of assessments to measure their students’ beginning literacy and math skills. Over time they have developed a more clearly defined system of common assessments. They are currently working on creating common formative assessments in math that can be used in addition to a standardized benchmark assessment and unit tests.

**Flexible timing of benchmark and other formative assessments.** As part of this system of common assessments, benchmark assessments were typically given at common established periods of time each year. This year, the Team Lit group of first grade teachers has begun to flexibly administer the assessments when they believe they can receive the most beneficial information from them. For example, the team talked about how they had recently given a benchmark Individualized Reading Inventory to all students who had previously scored below or right at benchmark on a previous assessment because they wanted “fresh data” and did not want to wait five weeks until the next established benchmark period.

**Diagnostic use of common formative assessments.** Results are not just used to identify students who struggle. Performance on common formative assessments is analyzed for holes in student learning and used to drive instruction for students. For example, the team has just started using the *Words Their Way* developmental spelling assessment and uses information from the assessment to plan differentiated work and spelling instruction. Likewise, an analysis of specific miscues and mistakes a student
makes on an Individual Reading Inventory is used to plan guided reading instruction. Other types of pre-assessments such as spelling checks and word lists are also used to plan for specific instruction to match students’ learning needs. Assessments that don’t provide this diagnostic value are not highly regarded such as the current AIMS Web math assessment which the team believes does not tell them anything about their students’ mathematical reasoning and knowledge.

**Frequent monitoring of lowest performing students.** Students who are not reaching benchmark expectations are progress monitored weekly by the reading specialists using AIMS Web CBM measures.

**Frequent discussion of student learning incorporating results from multiple sources.** The Team Lit group regularly discusses each student’s literacy development during their PLC meetings. At one of the observed meetings, the group split into two groups and discussed how students were performing in the small differentiated Team Lit groups. Anecdotal information from the teacher teaching the group was shared, results from formal assessments as well as formative types of learning activities were discussed and suggestions for further differentiation were provided.

**Established criteria for benchmark expectations and need for intervention.** The Team Lit group has established clear benchmark expectations for their students’ learning over the course of the year and frequently discusses where an individual student is in relation to this defined continuum of learning. For example, the team spent considerable time at one of the observed PLC meetings discussing what guided reading level students need to be at now in order to make benchmark criteria in February and
determined that some students needed additional intervention time. The group also discussed the amount of intervention time some students from other first grade classes were receiving in relation to their current level of performance. Ultimately this conversation led to the development of a protocol that would be used in the future to guide decision-making relative to interventions.

In addition to the teachers being clear and consistent relative to learning expectations, they also discussed how they share expectations with parents. One teacher discussed how she has used a scattergram to show a student’s parents where their child is in relation to rest of class. Another teacher shared that on occasion she has even showed a child where they are in relation to the expectations and the other students in the class as a way to build the child’s confidence in their own abilities.

Group examination of data for all Team Lit students. The first grade Team Lit group shared how they no longer meet as an entire grade level group in data teams every 6-8 weeks but instead examine and analyze data for their Team Lit students on a more frequent basis as part of their ongoing analysis of student learning and planning for differentiated instruction.

Success defined by student success. When asked how the team would define success, they simply said, “student success,” and “Any growth, anything at all.” In all of their conversations, it was apparent that the teachers on this team are focused on helping all students achieve at least at the benchmark level and scaffolding instruction so that all students continue to learn and grow to their highest levels possible. They hold high expectations for students and are genuinely excited to see the growth that their first grade
students make over the course of the year.

**Analyze aggregate data over time.** In addition to a clear focus on helping individual students achieve success, the team is also concerned with the overall success of their model. They have collected and analyzed aggregate data over time to help measure the impact the program is having on student learning. The team shared that the data reveals the Team Lit model has resulted in fewer students needing interventions in second grade. The team also use results from previous years to help them gauge the intensity of the interventions that are needed to help students achieve expectations.

**Focus on Learning**

PLCs are often characterized by an unrelenting focus on student learning. It is not enough that students have been taught a skill; an effective PLC ensures that students learn the skills. This tenet was demonstrated with a very high degree of frequency in School B. A focus on learning was inherent in interview responses 48 times and was observed in the first grade Team Lit meetings 39 times resulting in a total frequency count of 87, which was tied for most frequent tenet with Results Orientation. Analysis of these coded responses reveals the following themes:

**Clear on what they want students to learn.** The first grade team has developed and uses a common curriculum that clearly outlines the sequence of skills students need to learn. In the observed team meetings, there was evidence that team members are clear about what specific skills are taught at each level in the *Words Their Way* program and the level of skills students should be able to display and apply at each level in the leveled reader program they use. The team has also selected and adopted common language that
all teachers on the team use when instructing students as well as when talking to parents about the intended skills. Team members commented several times in the interview that they felt this common language has been essential to the students’ success as they work with multiple teachers on the team over the course of the year.

**High expectations for all students.** In both the interviews and observed team meetings, it was apparent that the team operates from the philosophy that every child can and will succeed. One teacher commented, “We expect a lot from kids. We expect that every kid can achieve.” Clearly defined benchmark expectations have been established and are frequently referenced when team members discuss what reading level students are currently functioning at. As students demonstrate growth and success, the team celebrates the students’ accomplishments. And conversely, when students are struggling to make progress, team members are upset and become even more intently focused on what interventions to use to accelerate growth.

**Strong commitment to every child’s success.** When asked about common values and goals in their school, one of the Team Lit members stated their common goal as, “Trying to meet the needs of every student.” In the team’s interview responses and discussions in the two observed PLC meetings, it was readily apparent that this team is focused on understanding and meeting the individual needs of all of their students. The goal is for all students to reach or exceed established benchmarks as defined by common assessments such as the Fountas and Pinnell Benchmark Assessment System. The Team Lit model provides two doses of guided reading instruction to all children daily. When the teachers regroup students for instruction during their second guided reading Team Lit
time, students can be grouped even more tightly in accordance with their learning needs. For the students who struggle, these groups are purposefully kept small. And as one teacher said, “Those kids who already get it are not just being kept busy. They are being challenged just like every other kid. This is the beauty of this model, that every single kid is getting exactly what they are ready for.” In addition to the differentiated support provided in Team Lit, extra support is also given to students who struggle in the form of a third intervention taught by the reading specialists. Finding the time to provide this “third dip” as the group refers to it, was passionately discussed in one of the meetings observed and identified as a critical need that a scheduling solution must be found to address.

Collectively problem solve to determine how to meet student needs. The first grade team meets at least once a week as a PLC group solely focused on their students’ literacy instruction and progress. In addition to planning for instruction, the team uses information from formative assessments to help them figure out student learning needs and the next steps to take. In discussing a new common assessment, one team member said, “the assessment from *Words Their Way* helps us channel down to what the kid needs, what is next and you can use it to plan instruction.” They also regularly review the progress each child is making in the Team Lit groups. They may discuss results from a common formative assessment recently administered to a child or share formative information the teacher has gained from working with the child in a small group setting. Ideas for how to differentiate instruction to meet the needs of a specific child or the small group are shared and discussed. As one teacher said, “We are really open and willing to
try new things, to see what answers are out there that we have not found yet. Particularly for students who struggle, we look to research, we look to experts, we talk on the phone at night and in the morning, we meet during our common plan times to problem solve with our specialists and say what are we going to do. We have got to figure this out. What else can we do to help these kids?”

**Intentional decision making – analyze impact on student learning.** Team members commented how the Team Lit model and their focus on meeting the needs of all students permeate all of their thinking and way of operating. One teacher said, “It makes us really purposeful. I can look at my day and say that was a waste of my time and their time.” Another agreed and said that all of their teaching has become much more intentional since adopting this model.

**Mind Set of Continuous Improvement**

PLCs by their very definition are teams that are committed to learning and improvement. Displaying a mind set of continuous improvement was a tenet that was coded for 53 times in the data stemming from the interviews and observed PLC meetings. From a frequency count perspective, this tenet fell within the mid-range of coded tenets for School B. Themes that emerged from the interview responses and observed PLC meetings that depict an existence of a mind set of continuous improvement in School B include:

**Willing to try new ideas.** The whole concept of Team Lit and how it was developed in this first grade group of teachers at School B is an example of their willingness to try new ideas. One member of the team had used the concept at a previous
school he had worked at and started talking to one of his first grade colleagues at School B and they decided to try it and quickly got a newly hired reading specialist involved. The next year, the concept was expanded to include three more teachers. Over the three years the concept has been used, the team has constantly evaluated what is working and what is not and have made improvements to the model.

When discussing what distinguishes them as a team, one member commented, “I think we are really willing to try new things, to see what answers are out there that we have not found yet.” This openness to new ideas and their motivation to learn and improve is apparent in how they discuss and plan for instruction to meet specific student needs, how they plan instruction for all students and how they organize themselves to meet their goals. It is also apparent in how they conceive of and use formative assessments. The inclusion of the *Words Their Way* developmental spelling assessment is an example of this. The group also discussed how their school improved their ability to determine a student’s reading level by adopting the *Fountas and Pinnell Benchmark Assessment System* as a more formal and universal assessment tool. The first grade Team Lit group is also examining and developing ideas for additional common formative assessments in the area of math to better understand their students’ learning needs and plan for differentiated instruction.

**See change as organic and natural.** The team perceives change as necessary to continue to meet the needs of students and that this is a constantly evolving dimension to their work. As one team member commented, “Our work to meet students’ needs is very organic and can change within a year’s time. We make it work for the team, for the kids
we have.” Examples of changes to the Team Lit program that have evolved over time and been responsive to the changing needs of the students include adding a special education teacher into the model and the flexible timing of individual reading inventory assessments.

**Continuous review of Team Lit instruction.** The first grade PLC team demonstrated collaborative efforts to continuously review and enhance their instructional practices. Examples include their decision to utilize common language and practices and to “really stick to a lesson plan that really followed the gradients of guided reading groups.” Another example observed during a PLC meeting was the discussion and sharing of ideas for spelling instruction and keeping students actively engaged in word work/spelling development. In another meeting, members discussed how they were teaching students to summarize. They shared ideas for improving their instruction as well as how to get students to become more independent at open ended writing.

Team members examine and discuss how students are responding to small group instruction using information from both formal formative data as well as informal formative assessment practices. Ideas for more effectively reaching a particular student or group of students are shared and discussed.

**Data driven and reflective conversations.** In the PLC meetings observed, team members examined and discussed how students are responding to small group instruction using information from both formal formative data as well as informal formative assessment practices. These conversations were both data driven and reflective in nature. Ideas for more effectively reaching a particular student or group of students were shared
and discussed. The group used the collaborative efforts of all individuals to determine the most appropriate instruction for students.

The team also engaged in reflective conversations regarding improvement ideas for their school and the entire first grade team. When discussing common values and goals for their school, the group discussed the possible need to incorporate a more formal character education development program in the building. And when discussing the formal review of benchmark assessments, the group carefully evaluated the pros and cons of how Data Teams have been utilized in the past, are currently being utilized and ideas for possible improvement.

**Willing to challenge paradigms and boundaries in the interest of student learning.** The Team Lit group demonstrated ability to identify their needs and to problem solve how their needs could be met. As part of this work, they are willing to challenge current paradigms in how the team or building operates. As one member said, “this team is challenging those walls, those boundaries, pushing it out, pushing it out.” An example of this demonstrated during one of the observed meetings had to do with the identification and scheduling of students for a triple dose of differentiation/intervention. As a result of their willingness to go to their principal with their concerns, the building is now setting up procedures and guidelines for what assessment information will be used and what criteria will determine if a student requires a third intervention. The group is proactively thinking about how scheduling problems can be avoided in the future as well as how to potentially expand their Team Lit concept to other teachers and to further develop its use in math instruction.
Motivation to learn and grow. When asked what they saw as the relationship between how their group operates as a PLC and improved instruction and student learning, one team member shared, “Every single one of us has immensely improved as teachers. The level of expectation and commitment is very high and all of us keep pushing each other during this PLC time and that is what really pushes us as teachers. That is why we have really all grown. And in turn, I would say that impacts our students.”

Collective Inquiry and Action Orientation

A philosophical tenet associated with PLCs that was coded less frequently in the data stemming from School B’s focus group interview and observed grade level meetings, was a commitment to learn and improve through engagement in collective inquiry and action oriented response. Forty-four responses were coded as examples of the groups’ explicit use of inquiry and action. The examples that depict this tenet in action at this school revolve around the following themes:

Collective discussion regarding use of assessment data. The first grade Team Lit group actively collects and uses data in their decision making process. At one observed PLC meeting, the team referred back to student growth data from the previous two years to help analyze the projected progress of current students and discuss how their needs should be met. This led them to identify specific students who could benefit from a third intervention and eventually set parameters for how these decisions would be made in the future. At another PLC meeting, the team discussed and determined how they would use data from a new developmental spelling assessment to plan for differentiated
spelling instruction for their students.

**Collective work on curriculum, instruction and assessment.** The team also engages in collective inquiry and action focusing on the development of common language, lessons and practices for their Team Lit time with students. A team member shared, “Sometimes we will take the time to say on Monday we want to teach an inferring lesson and we will work on how we are going to do that, what will it look like.” At one PLC meeting, the group identified the need to go beyond the basic spelling assessment and develop pre-assessment lists of commonly misspelled words to use with students further along the spelling continuum. This same team of teachers is actively pursuing the development of common formative assessments in math as their professional growth goal for the year because they do not believe the current assessments they use tell them enough about students’ developing math knowledge.

The school has developed a culture of collective learning. For several years, all district staff was involved in book studies and other professional development focusing on PLCs and common formative assessments. They used this knowledge to initiate PLCs at all grade levels and develop common formative assessments. The Team Lit group also demonstrates a culture of learning and will look to research and experts to learn and apply new instructional approaches. Team members share what they have read or studied and then the group will talk about it and determine how they could replicate the idea in Team Lit if needed.

**Solution and task oriented.** The Team Lit group is solution driven and task oriented. They begin each meeting with an overview of the agenda and the defined tasks
that need to be completed. In one meeting they defined what criteria would necessitate the need for a third intervention or third dip as they referred to it, what exactly defines a third intervention in terms of time, how extra time might be carved out of the existing schedule to accommodate this and discussed what effect this might have on students from other classes. As one member described the group, ‘We have been so tasky as a group and getting down to figure out what is not working, what are our weaknesses. We are learning to think about celebrations, high points once in a while.’

**Shared Vision and Goals**

There were 25 coded responses that demonstrated evidence that School B and the first grade Team Lit have a shared vision and goals. The majority of these coded responses were found in the interview responses. Similar to School A, while this may be the lowest number of coded responses for any of the six tenets examined, several themes that emerged regarding this team’s shared vision incorporate other tenets such as a Focus on Learning, Results Oriented and a Collaborative Culture. School B and its first grade Team Lit group have developed a common vision that incorporates the following themes:

**Strong focus on the learning of all students.** In separate interviews, both the principal and the first grade Team Lit group shared that the school’s vision incorporates an extremely strong focus on the learning of all students. The principal described their vision in this way, “Teachers, support staff are so focused on the needs of a child. Whatever we do is driven by student need.” As one teacher succinctly stated it, “Trying to meet the needs of every student.” This vision is addressed through a heavy emphasis on differentiation of instruction via the Team Lit model and an unwavering effort to ensure
all students are learning and growing. The 87 previously described coded responses demonstrating a *Focus on Learning* provide evidence of this school’s vision and commitment to student learning.

**Everyone is responsible for student learning.** Not only is student learning the primary focus in School B but there is a sense of collective responsibility for student learning. One first grade teacher described it as “These are our kids. We are all responsible for every kid in this building.” This shared sense of responsibility was previously discussed more fully in School B’s Collaborative Culture section but it was also demonstrated when the teachers were struggling with how to possibly re-allocate some of the reading specialist’s time in order to provide additional support to some needy students on their team. One team member said, “We are here for what is best for all kids not just one or two kids.”

**Sense of community effort.** Another central element of School B’s vision is a belief that they must work together to have all students be successful and every one has value to add to this effort. The principal described it as, “Every one’s role is valued. Our teacher associates are looked at as teachers in the building. Our custodians have been brought on board to help implement behavior plans. There is definitely a sense that we are all contributors to what happens for kids here and I think that is a huge value that is held.” The first grade team also echoed this same feeling in discussions regarding their team members. Both the principal and the first grade teachers stated that learning in their school is a “community shared experience.” Teachers, assistants and even parents are viewed as important stakeholders who all play an active and valuable role in educating
students.

**Passion for teaching.** Throughout the interview and observed team meetings, it was evident that the first grade Team Lit group of teachers are dedicated to students and passionate about the critical role they play in their students’ success. An essential element of their vision is to do their best to meet needs of students and all of their words as well as actions serve as testimony to this commitment. They have made it a team priority to work as a PLC and this subsequently permeates how they operate on a daily basis.

**Common Themes Across Both Schools**

The following table provides a side-by-side comparison of the themes that were found for each tenet in the two schools examined in this study. Common themes found in both School A and School B are bolded to highlight the similarities between the two sites.

As can be seen in Table 11, many similarities exist in the themes relative to a Collaborative Culture that emerged from the interviews and observations in both schools. This tenet had the most themes in common between the two schools. Eight common themes were noted in the data coded as examples of how these teams work together in a collaborative culture. Common themes include: a sense of community; mutual respect; work together to plan curriculum, instruction and assessment; share ideas/information; ask for input/give suggestions; support and push one another to be their best; share the workload/hold each other accountable; and constant communication.
### Table 11

**Common Themes Related to PLC Tenets Found in School A and School B**

<table>
<thead>
<tr>
<th>Tenet</th>
<th>School A</th>
<th>School B</th>
</tr>
</thead>
<tbody>
<tr>
<td>Collaborative Culture</td>
<td>• Sense of community</td>
<td>• Sense of community</td>
</tr>
<tr>
<td></td>
<td>• Mutual respect/trust</td>
<td>• Mutual respect</td>
</tr>
<tr>
<td></td>
<td>• Flexible/cooperative</td>
<td>• Collective responsibility for learning of all students</td>
</tr>
<tr>
<td></td>
<td>• <strong>Work together to plan curriculum,</strong> instruction and assessment</td>
<td>• <strong>Work together to plan curriculum,</strong> instruction and assessment</td>
</tr>
<tr>
<td></td>
<td>• Share ideas and information</td>
<td>• Share ideas, information and resources</td>
</tr>
<tr>
<td></td>
<td>• Ask for input/give suggestions &amp; feedback</td>
<td>• Ask for input/give suggestions</td>
</tr>
<tr>
<td></td>
<td>• Support and push one another to be their best/provide assurance</td>
<td>• Support and push one another to be their best</td>
</tr>
<tr>
<td></td>
<td>• Sharing the workload/Hold each other accountable</td>
<td>• Sharing the workload/Hold each other accountable</td>
</tr>
<tr>
<td></td>
<td>• Constant communication</td>
<td>• Constant communication</td>
</tr>
<tr>
<td></td>
<td>• Dedicated time together</td>
<td></td>
</tr>
<tr>
<td>Results Oriented</td>
<td>• Expectation that an assessment/rubric will be part of all unit plans</td>
<td>• Defined system of assessments</td>
</tr>
<tr>
<td></td>
<td>• Use of pre-assessment results to plan instruction and post assessments to measure growth</td>
<td>• Flexible timing of benchmark and other formative assessments</td>
</tr>
<tr>
<td></td>
<td>• Use of variety of assessments in small group interventions</td>
<td>• Diagnostic use of common formative assessments</td>
</tr>
<tr>
<td></td>
<td>• Discussion of common district assessments</td>
<td>• Frequent monitoring of lowest performing students</td>
</tr>
<tr>
<td></td>
<td>• <strong>Use of benchmark assessments to determine who needs support</strong></td>
<td>• Team examination of data for all Team Lit students</td>
</tr>
<tr>
<td></td>
<td>• Discussion of individual student needs and learning growth of students</td>
<td>• <strong>Use of benchmark assessments</strong> and established criteria to determine who needs support</td>
</tr>
<tr>
<td></td>
<td>• Success defined by student success</td>
<td>• Discussion of individual student needs and learning growth of students</td>
</tr>
<tr>
<td>Focus on Learning</td>
<td>Commitment to students’ learning</td>
<td></td>
</tr>
<tr>
<td>------------------</td>
<td>----------------------------------</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Clear focus on what they want students to learn</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Focus on how well students learn</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Take the next step to ensure learning</td>
<td></td>
</tr>
</tbody>
</table>

| Commitment to every students’ learning |
| Clear focus on what they want students to learn |
| High expectations for all students |
| Collectively problem solve to determine next step to take to ensure learning |
| Intentional decision making – analyze impact on student learning |

<table>
<thead>
<tr>
<th>Mind Set of Continuous Improvement</th>
<th>Willingness to try new ideas</th>
</tr>
</thead>
<tbody>
<tr>
<td>Continuous review of units, lessons and assessments</td>
<td></td>
</tr>
<tr>
<td>Analysis of assessment data to make changes in future instruction</td>
<td></td>
</tr>
<tr>
<td>Willingness to meet frequently and work hard to accomplish goals/tasks</td>
<td></td>
</tr>
<tr>
<td>Reflective conversations</td>
<td></td>
</tr>
<tr>
<td>Motivation to continue to learn and grow</td>
<td></td>
</tr>
</tbody>
</table>

| Willingness to try new ideas |
| Continuous review of Team Lit instruction |
| See change as organic and natural |
| Data driven and reflective conversations |
| Willing to challenge paradigms and boundaries in the interest of student learning |
| Motivation to continue to learn and grow |

<table>
<thead>
<tr>
<th>Collective Inquiry and Action Orientation</th>
<th>Collective discussion of assessments</th>
</tr>
</thead>
<tbody>
<tr>
<td>Collective work on curriculum, instruction and assessment</td>
<td></td>
</tr>
<tr>
<td>PLC goals and agenda topics based on professional growth needs of teachers and instructional needs of students</td>
<td></td>
</tr>
</tbody>
</table>

| Collective discussion regarding use of assessment data |
| Collective work on curriculum, instruction and assessment |
| Solution and task oriented |

<table>
<thead>
<tr>
<th>Shared Vision and Goals</th>
<th>Sense of community and emotional safety for all students and staff</th>
</tr>
</thead>
<tbody>
<tr>
<td>Focus on learning of all students</td>
<td></td>
</tr>
<tr>
<td>Focus on professional learning</td>
<td></td>
</tr>
<tr>
<td>Common goals that are worked on collectively by all</td>
<td></td>
</tr>
<tr>
<td>Passion for teaching</td>
<td></td>
</tr>
</tbody>
</table>

| Strong focus on the learning of all students |
| Everyone is responsible for student learning |
| Sense of community effort |
| Passion for teaching |
Data from the two schools indicate two common themes relative to a Results Orientation. The first being frequent discussion of student learning and the second being the team equates their success with the success of their students. The specific nature of how each team assesses student learning and uses these results varies but both schools had many examples of how results are used to improve the instruction and ultimately the learning of the students in each of these schools.

School A and B had three similar themes as it relates to their Focus on Learning. Both schools are clear on what they want students to learn. Both schools are also committed to their students’ learning and will problem solve and take the next step to improve their students’ learning.

Four common themes were seen in the data between the two schools as it relates to the tenet of a Mind Set of Continuous Improvement. Similar themes include a willingness to try new ideas and a motivation to continue to learn and grow. These mind sets result in reflective conversations and a continuous review and revision of instructional lessons and practices.

A common theme that emerged from the examples of how the two schools engage in collective inquiry and action orientation involves collective work on curriculum and instruction. Both schools also collectively discuss and work on assessments. However there are some differences between the two schools in how they formatively use the information they obtain from assessments.

Common themes in each school’s vision include a strong focus on the learning of all students and a passion for teaching. A sense of community is also an integral aspect
of each school’s vision but there are some slight differences in how each school works
together as a community.

Why the common themes noted above are important to how the two schools in
this study use these tenets to help them develop, analyze and use information from
common formative assessments will be further discussed in Chapter VI.
CHAPTER FIVE

RESULTS FOR RESEARCH QUESTION TWO

Chapter V will present the results related to the second research question of this qualitative multi case study that examined how teachers working within a professional learning community (PLC) apply the tenets and utilize the structure of a PLC to develop and use common formative assessments as a means for improving student learning. Specifically the second research questions asked: How do elementary teachers use the four guiding questions in DuFour et al.’s (2006) PLC model to develop common formative assessments, analyze their results and use this information to make instructional adjustments that aid student learning.

Grade level professional learning communities from two different elementary school districts participated in this study and were analyzed as separate cases. A variety of data collection methods were used to collect both quantitative and qualitative, descriptive information to answer the second research question in each case. Data collection procedures included an electronic survey, interviews, and observations of grade level team meetings. Data from both cases was examined by using DuFour et al.’s (2006) four questions as a priori categories looked for in the survey data, interviews, and observations of PLC meetings. Table 12 below lists the four guiding questions of the DuFour et al. model. As previously described in Chapter 3, a data matrix incorporating both DuFour et al.’s four guiding questions and Birenbaum et al.’s (2010) formative
assessment cycle was used to group information gained from all data collections methods into these a priori categories.

Table 12

*Four Guiding Questions of the DuFour et al. (2006) PLC Model*

<table>
<thead>
<tr>
<th>Question</th>
</tr>
</thead>
<tbody>
<tr>
<td>• What do we want students to learn?</td>
</tr>
<tr>
<td>• How will we know when they have learned?</td>
</tr>
<tr>
<td>• How will we respond when some students don’t learn?</td>
</tr>
<tr>
<td>• How will we respond when some students already know?</td>
</tr>
</tbody>
</table>

In this chapter, each section of this matrix will be reviewed from both a quantitative and qualitative perspective. The information presented provides an in-depth picture of how each school engages in these types of professional activities in order to improve student learning.


School A began incorporating the professional learning community concept by involvement in whole faculty study groups. As the principal described it, teachers were meeting in whole faculty study groups around a professional area of interest such as reading comprehension or problem solving skills. While this type of work does fit the general construct of a group of teachers professionally learning together, it does not match DuFour et al.’s (2006) more structured and focused model that involves identifying learning goals, determining how these goals would be assessed, analyzing achievement and determining next steps in order to specifically improve student learning.
Over the last three years, School A has moved to incorporating grade level PLCs as well as running their faculty meetings as a PLC. Some teachers received training in the DuFour et al. model and shared the information with their colleagues. At the whole staff faculty level, they continue to focus on collaborative professional learning experiences centered on their school improvement goal of developing students’ deeper comprehension strategies.

Grade level teams meet at least weekly as PLCs. In their grade level PLC groups, the teams of teachers work to plan and implement instructional ideas related to the school improvement goal, a common school wide thematic unit of study, and other instructional units of study. Assessment planning is a part of this professional work. Teachers have received training on developing standards based assessments and time was spent on developing assessments aligned with their standards based report card. The PLC groups also discuss how to meet the needs of the students on their grade level team through Response to Intervention (RTI). The principal commented in her interview that at first as they started working as grade level PLCs, she would give them some focus questions or the actual DuFour et al. (2006) model questions but now they have tailored their PLCs more toward the school improvement plan and incorporation of RTI and do not use the structure of the DuFour et al. model as much. They “use his questions as guiding questions but not every time” they meet.

The next section provides a more elaborate breakdown of how often the fourth grade team of teachers from School A are engaged in activities associated with each of DuFour et al.’s (2006) guiding questions. Quantitative information from the teacher
survey regarding the frequency of specific types of activities will be provided. In addition, qualitative examples of how these questions are actually addressed when the team meets will be shared to develop a more complete picture of how the questions help this team to analyze and respond to student learning needs.

**Question 1: What Do We Want Students to Learn?**

According to the DuFour et al. (2006) model one of the fundamental questions PLCs are intended to ask and answer is the establishment of clearly defined learning targets. Teachers who are responsible for teaching the same grade level or course work together to collaboratively identify the essential knowledge and skills students are expected to learn within a given unit of instruction, period of time, etc. They then collaboratively discuss and plan instructional ideas that will enable students to achieve these learning targets. Being clear about the end goal allows the team to stay focused and efficiently and effectively use their time together.

Table 13 below indicates how frequently the fourth grade team of teachers in School A engage in professional activities associated with DuFour et al.’s (2006) first question. Teachers were asked: “How often do you engage in the following professional activities when you meet?”

As can be seen in Table 13, 75% of teachers in School A reported they frequently spend time together in their meetings planning instruction and talking about what they want students to learn. This was also evident in the team’s group interview responses. Establishment of learning targets was one of the professional activities referenced in the data matrix used for the second research question. Both the fourth grade team and their
building principal shared how this team had spent considerable time over the summer mapping their entire year’s curriculum indicating the standards students were expected to achieve, the skills that would be taught, the assessments that would be used to measure these skills and the pace of instruction. A team member commented in the interview that a discussion of standards often guides the team’s discussion at meetings regarding what they want students to learn and shared that instructional planning is conducted using the Understanding by Design (Wiggins & McTighe, 2005) model. In this model, teachers start by stating the end goal of what they want students to learn and then work backwards to discuss what this learning would look like and therefore develop assessments before creating instructional activities that will enable students to achieve these learning targets.

Table 13

**School A Survey Results for First PLC Question**

<table>
<thead>
<tr>
<th></th>
<th>Almost every time we meet</th>
<th>Frequently</th>
<th>Infrequently</th>
<th>Never</th>
</tr>
</thead>
<tbody>
<tr>
<td>Plan upcoming instructional units</td>
<td>0%</td>
<td>75%</td>
<td>25%</td>
<td>0%</td>
</tr>
<tr>
<td>Develop and/or share specific</td>
<td>25%</td>
<td>50%</td>
<td>25%</td>
<td>0%</td>
</tr>
<tr>
<td>instructional lessons or activities</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

This type of professional work was witnessed first hand in one of the observed fourth grade PLC meetings. Teacher were planning an upcoming science unit on Force and Motion and referred to the scope and sequence of skills and concepts they wanted students to obtain as well as discussing the types of learning activities that students would be involved in. A particular area they focused on was how to get students to synthesize
and apply conceptual understandings in their projects. This ties back to their school goal of developing students’ higher level thinking skills.

In the other observed PLC meeting, the group discussed the need to amend some of their curriculum to address the new more rigorous standards associated with the Common Core standards. The group talked about instructional ideas for exposing students to more reading and summarizing of non-fiction texts and application of deeper comprehension skills in projects and assessments. As the team continues to learn more about the Common Core standards, they acknowledged that they will be purposefully adjusting and amending their curriculum map to align with these new more rigorous standards.

**Question 2: How Will We Know if Students Have Learned?**

Once the intended learning targets are established, the second question that PLCs focus on is defining what this learning looks like and how it can be measured. Determining how students will demonstrate their knowledge and skills can take a variety of forms. Use of summative assessments that measure learning at the end of an instructional cycle is one option, but PLCs often also use benchmark assessments given frequently over the course of a year and formative assessment practices that measure learning along the way. Collaboratively developing common assessments and/or deciding what assessments will be used to measure student learning is a core part of a PLC’s work together and was purposefully looked for in this study.

Table 14 below indicates how frequently fourth teachers in School A reported on the teacher survey that they engage in professional activities associated with the second
question regarding assessment of student learning.

Table 14

*School A Survey Results for Second PLC Question*

<table>
<thead>
<tr>
<th></th>
<th>Almost every time we meet</th>
<th>Frequently</th>
<th>Infrequently</th>
<th>Never</th>
</tr>
</thead>
<tbody>
<tr>
<td>Develop common assessments</td>
<td>0%</td>
<td>25%</td>
<td>50%</td>
<td>25%</td>
</tr>
<tr>
<td>Discuss results from common assessments</td>
<td>0%</td>
<td>50%</td>
<td>50%</td>
<td>0%</td>
</tr>
<tr>
<td>Discuss results from other assessments</td>
<td>0%</td>
<td>100%</td>
<td>0%</td>
<td>0%</td>
</tr>
<tr>
<td>Review examples of student work</td>
<td>0%</td>
<td>50%</td>
<td>50%</td>
<td>0%</td>
</tr>
</tbody>
</table>

As shown in Table 14, only 25% of the fourth grade teachers in School A reported that they “frequently” develop common assessments and only 50% reported that they “frequently” discuss results from common assessments. When asked how often they discuss results from “other assessments,” 100% of the fourth grade teachers reported they do this frequently. This discrepancy in frequency results for “common assessments” vs. “other assessments” may be due to the team’s definition of common assessments. In this particular school system, “common assessments” refer to assessments that have been developed at the district level by representative teachers from across the multi-school district. These assessments have been developed for the various science and social studies units that grade level teachers from across the district teach. A common math assessment has also been developed and is administered three times a year. These assessments are being piloted across the district this year. In addition to these common
assessments, teachers in School A have developed and/or use a variety of other assessments. Standardized assessments include the Northwest Education Association’s Measure of Academic Progress (MAP) test administered once a year to all students and more frequently for students performing at or below the 25% level. Benchmark assessments include the use four times a year of locally developed individual reading inventories (IRIs), DIBELS and MAZE for reading assessment. Grade level teachers have developed local assessments that align with standards on the report card and use a variety of performance assessments with locally developed rubrics. They also use chapter tests that accompany their instructional programs.

While the survey results did not indicate the teachers on this team engage frequently in development of common assessments, several examples of assessment development and/or refinement were observed in their PLC meetings. In the first observed meeting, the group examined and discussed a new idea for formatively assessing students’ reading strategies with non-fiction text. One teacher shared an idea she had gotten at a conference and how she had modified it slightly and used it with her students. The group liked the idea and said they would all try it, saying they thought it fit the “assessment piece with non-fiction that they were missing.” Whether they will use results from this assessment activity summatively or formatively remains to be seen as one teacher commented that she thought it was a good idea because she was “struggling on getting a grade.” Later in that same meeting, the team reviewed an upcoming math assessment they were going to administer and discussed changes they wanted to make to it. In particular they identified areas on the pre-test that were particularly hard for
students and discussed the level of Bloom’s taxonomy for certain questions. They also examined the vocabulary used in certain questions and discussed whether the vocabulary made the question too difficult for students. They ultimately made changes to how some questions were worded to more accurately measure whether students understood the intended concept. In the second observed PLC meeting, the team discussed what assessment activity would be used with the upcoming Force and Motion unit. Once the activity was decided upon, the group discussed a possible rubric that one teacher had developed that could be used to measure performance on this project. Teachers reported in the interview that while they have some assessments they developed several years ago, they still “tweak them” to make sure they accurately assess students’ knowledge. They also acknowledged that some existing assessments will be re-done or new assessments developed to measure student performance in relation to the new Common Core standards. Development of assessments is also something the school as a whole is working on in conjunction with their school improvement goal with reading strategies.

Teachers on this team did engage in some low level discussion of results from the common district assessments. They were concerned that overall their students did not do very well on a recently administered assessment and felt that the test was very difficult. The expectation at this time from the district is that teachers will administer the assessments, provide some comments and suggestions regarding them but that scores would not be formally reported to the district or used in any sort of official manner.

Teachers on the fourth grade team do discuss results from other assessments when they meet in their PLC meetings. In one observed meeting, the team was discussing
students who fell below the 25% on the MAP test administered in the spring and other low performing students, what supports they were receiving and whether they should be tested on the MAP again in the winter to monitor their progress. As part of this conversation, teachers referred to data from other assessments administered. In another observed meeting, the teacher who provides the RTI reading intervention to a small group of students shared how she is pre-testing skills at the beginning of every week, post-testing the skills at the end of the week and will be giving a post-test at the end of the six week intervention. In a similar manner, the teacher who works with the lowest group of students in math discussed her expectations for her students on the next assessment and inquired whether the other teachers on the team thought she should be doing more frequent progress monitoring or whether the chapter assessments were enough. She did describe how for a specific unit on multiplication, she gave a pre-test, mini-tests along the way and a post-test at the end to monitor the students’ growth.

In addition to discussing results, the team also reported that they collaboratively grade student work together to determine if they get common results and gain a better feel for the range of student performance. The team has seen this practice modeled at the whole school faculty meeting and have also collectively graded some of the common district developed assessments as well as some of their own locally developed assessments.

When asked in the interview about data analysis, the team responded that they have data walls and have a lot of data but was not sure that they know how to effectively analyze and use the data. One member commented, “Our school is struggling with how
to use data effectively.” She added, “We are looking at answering questions such as: How can we get data? What data is useful? How is this going to drive instruction?” The team members definitely feel there is a need for data, particularly because of RTI, and added that it is important to look at multiple sources of data. When asked if and how PLCs are making a difference in student learning, team members responded that the students are getting “the best of the best” instruction because of their collaborative work together but did not mention or refer to any data to indicate how students had benefited.

**Question #3: How Will We Respond When Some Students Don’t Learn?**

**Question #4: How Will We Respond When Some Students Already Know?**

Professional learning communities hold the potential to improve student learning when teachers engage in collaborative discussion and problem solving around DuFour et al.’s (2006) third and fourth questions. It is only when teachers do something different in response to what they have learned through assessments about student learning that improved learning can occur. This response to information about student learning is what sets a professional learning community apart from educators who may work collaboratively to learn together and share instructional ideas.

In response to DuFour et al.’s (2006) third question of how to respond when students don’t learn, Table 15 indicates that 75% of the fourth grade team feel that they use results to determine which students need additional support “almost every time we meet” with the other 25% of the team saying this happens “frequently.” Teachers also reported that they use their meetings to take the next step to plan interventions/differentiation to meet these students’ needs: 50% said this happens “almost every time
we meet” and 50% said this happens frequently. As the principal explained in her interview, in addition to their weekly PLC meeting, each grade level meets with the full team of support teachers every 6 weeks to go over data, determine who are the bottom 20% of students and discuss what interventions these students need. She elaborated that data from standardized benchmark assessments such as IRIs is used to create watch lists and more local data is used to actually create the interventions. She went on to say the fourth grade team is “using tons of assessments to determine the specific type of need a student has (fluency, decoding, comprehension, etc.).” Fourth grade teachers discussed how they looked at six areas of deficiencies to select students to receive a Tier III type of reading intervention.

Table 15

*School A Survey Results for the Third and Fourth PLC Questions*

<table>
<thead>
<tr>
<th></th>
<th>Almost every time we meet</th>
<th>Frequently</th>
<th>Infrequently</th>
<th>Never</th>
</tr>
</thead>
<tbody>
<tr>
<td>Determine which students need additional support or enrichment based on results</td>
<td>75%</td>
<td>25%</td>
<td>0%</td>
<td>0%</td>
</tr>
<tr>
<td>Plan for interventions/ Differentiation based on Results of assessments</td>
<td>50%</td>
<td>50%</td>
<td>0%</td>
<td>0%</td>
</tr>
<tr>
<td>Review student learning results after intervention/ differentiation has been provided</td>
<td>25%</td>
<td>50%</td>
<td>25%</td>
<td>0%</td>
</tr>
<tr>
<td>Identify effective instructional practices based on results of assessments</td>
<td>25%</td>
<td>25%</td>
<td>50%</td>
<td>0%</td>
</tr>
</tbody>
</table>

There is an expectation that pre and post data is being gathered during the six week intervention time and will be used to determine if growth is being made and the gap
is closing, if some students no longer need the intervention, or do changes need to be made in the intervention. The data from the survey supports that this is happening. Table 15 indicates that 75% of the teachers say they review student learning results after intervention / differentiation has been provided either “frequently” or “almost every time we meet.” In one of the observed PLC meetings, fourth grade teachers discussed the assessment data that was being collected for the students in the intervention group, what data would be entered into the RTI database program and which students were being recommended to be brought up at the next grade level RTI meeting.

In addition to using these RTI meetings every six weeks for identification of students needing interventions, the fourth grade PLC group also discusses the possible need for additional interventions at their weekly PLC meetings. In one observed meeting, a teacher brought up a student that was struggling with vocabulary particularly in core subjects such as science and social studies. The team discussed whether there were other students with similar needs and whether a small group intervention should be considered. It is important to note that team members did not share or discuss any data from assessments as part of this conversation. In the end, the team decided there were not enough kids for an intervention group but shared several ideas for differentiating to meet this student’s need. The group also decided they could improve instruction for all students by making vocabulary word lists on a website for all of their major units of study that students could use for practice. At another observed PLC meeting, the fourth grade team discussed moving some students to a different math group based on data from recent assessments and performance in class.
Assessment data is also discussed and used to determine the effectiveness of instruction: 25% of the fourth grade teachers in School A say this happens “almost every time we meet” and 25% say it happens “frequently.” In the focus group interview, teachers reported after an assessment is given, they will go back and re-teach concepts that students do not do well on and they would “definitely make notes for next year.” They will also try to analyze why the students did not do well and determine if the assessment accurately measures learning, whether the assessment was administered correctly or whether the students did not master the intended learning target. For example, the teachers were unhappy with results from the common assessment on ecosystems. In response, they “graded them together to gauge whether they were all on the same page for grading” and discovered that the assessment was administered differently by the five teachers on the team. They decided they are going to re-give the assessment, grade them and will then take time to examine actual student work at each performance level to get a better understanding of their students’ learning and what they are “going to do next year.” Other examples of how they discuss lesson effectiveness and share ideas for how to improve instruction were provided in the interview but the teachers did not discuss any use of data as a part of this conversation.

Responding to the needs of students who already show that they understand the intended learning targets is an area of focus that both the fourth grade teachers and the principal acknowledge that they need to attend to more. The fourth grade teachers did admit they do not discuss their students on the high end as much as the students on the low end but they did acknowledge that there are some systematic ways they meet the
needs of high end students through the use of flexible math grouping for all students and replacement enrichment math and reading classes for the top end students. Teachers talked about some ways they add in some extra extensions for high students but admitted they do not truly change their instruction for these students. The principal shared that part of the reason they chose to focus on higher level thinking as part of their school improvement goal was a way to address the needs of high end students who may already know the standards. As she put it, she was not comfortable focusing all of the school’s improvement efforts only on the 13% of students who are not meeting standards.

The quantitative data from the teacher survey as well as the qualitative data gained from the interviews and observation of PLC meetings does indicate that the fourth grade teachers in School A do address the substance of DuFour et al.’s (2006) four guiding questions in their work as PLCs. They have clearly defined the intended learning targets and standards they want their students to obtain and frequently plan together and discuss instructional ideas that will engage students and assist them in their mastery of these standards. Assessment of the learning standards is an expected and integral part of their professional work together. They spend time together developing and refining assessments. Use of assessment data to identify students in need of more support and interventions is a central aspect of their PLC commitment. The team also uses assessment data to evaluate learning after it has occurred and will discuss instructional changes they will make the next time they teach a particular unit but examples of formative use of assessment data to alter instruction while it is happening was not as apparent in the data collected.

All teachers from School B received formal training in DuFour et al.’s (2006) model of professional learning communities. Workshops were provided for all teachers at the district level and at the building level teachers from School B studied and applied information gained from the Learning by Doing (DuFour et al., 2006) workbook. As part of this work, they developed common assessments in reading, language arts, math, social studies and science.

All teachers in School B are part of a small 4-6 person PLC that meets on a regular basis at least weekly. School B’s principal shared that these smaller PLC groups work closely to answer the PLC questions outlined by DuFour et al. (2006). The PLC team from School B that was involved in this study is the first grade Team Literacy group that is made up of four first grade classroom teachers, two reading specialists and a special education teacher. As the principal described it, “the concept for Team Literacy is really built around the whole PLC model.” She stated they use DuFour et al.’s four “guiding questions as a pretty strong guide and are constantly looking at how kids are doing, what are they showing us, how do we know if they have learned, what do they need and how are we going to respond.” She defined a successful team as one that “knows the true meaning of collaboration, that comes to the table with their data and they take it apart and figure out what the data is showing and then respond to that data and design what needs to happen to meet students’ needs.”

A member of the Team Literacy group reiterated the principal’s thoughts about how DuFour et al.’s four questions guide Team Lit’s work when he stated, “The beauty
of this model is it truly hits all of the four guiding questions of DuFour et al.’s (2006) model. Another colleague on the team added during our group interview that she mentally plans for and then evaluates a lesson using the four questions.

The next section will provide a more elaborate breakdown of how often Team Lit teachers from School B are engaged in activities associated with each of DuFour et al.’s (2006) guiding questions. Quantitative information from the teacher survey regarding the frequency of specific types of activities will be provided. In addition, qualitative examples of how these questions are actually addressed when the team meets will be shared to develop a more complete picture of how the questions help this team to analyze and respond to student learning needs.

**Question 1: What Do We Want Students to Learn?**

As previously stated for School A, one of the fundamental questions PLCs are intended to ask and answer is the establishment of clearly defined learning targets. Teachers working in same grade level or course often spend time to collaboratively identify the essential knowledge and skills students are expected to learn within a given unit of instruction, period of time, etc. Purposeful identification of the intended learning targets enables the team to work together in a more focused manner and share instructional ideas that will enable students to achieve the targets.

Table 16 indicates how frequently Team Lit teachers in School B engage in professional activities associated with DuFour et al.’s (2006) first question. Teachers were asked: “How often do you engage in the following professional activities when you meet?”
Table 16

School B Survey Results for First PLC Question

<table>
<thead>
<tr>
<th></th>
<th>Almost every time we meet</th>
<th>Frequently</th>
<th>Infrequently</th>
<th>Never</th>
</tr>
</thead>
<tbody>
<tr>
<td>Plan upcoming instructional units</td>
<td>17%</td>
<td>50%</td>
<td>17%</td>
<td>17%</td>
</tr>
<tr>
<td>Develop and/or share specific</td>
<td>17%</td>
<td>83%</td>
<td>0%</td>
<td>0%</td>
</tr>
<tr>
<td>instructional lessons or activities</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

As can be seen from the teacher survey responses reported in Table 16, teachers in School B reported they frequently spend time together planning instruction and talking about what they want students to learn. Responses to questions in the group interview also supported this. Teachers talked about developing a common set of reading strategies they want all students to begin developing in first grade. In order to achieve this, the team will plan common lessons on key skills together. They have also decided on common language they will all use regarding these strategies and they all utilize the same strategy cards as a visual reference for students. As one teacher stated, “We want every kid to have that common language. Not just one or two of the classrooms but everyone and we want the teachers to have that language.” The teachers also share this common language with parents so they can reinforce it as well.

Examples of this clear focus on what they want students to learn was also seen firsthand in the two observed PLC meetings. In one meeting in which they were discussing word work and spelling, the team referenced a clearly defined continuum of skills related to encoding (short vowels, long vowels, etc.) that they wanted students to
develop. Later in this same meeting when the teachers were discussing progress of specific students, they also discussed specific skills they were working on with their small groups (summarizing; writing a beginning, middle and end in a story; etc.). The first grade teachers also frequently use the guided reading leveled books as a way to talk about what students are learning and where they are in their reading development. Knowing what level of reading difficulty and the reading skills that are required for students to be successful at each guided reading level is a key element of the team’s reading program and their work together as a PLC. These guided reading levels serve to indicate what they want students to learn but are also an essential component of the second question in a PLC – How will we know if they are learning the intended skills?

**Question 2: How Will We Know if Students Have Learned?**

Once the intended learning targets are established, the second question that PLCs who follow DuFour et al.’s (2006) model focus on is defining what this learning looks like and how it can be measured. A PLC may choose to check for understanding through use of summative assessments that measure learning at the end of an instructional cycle. Learning can also be measured using benchmark assessments given frequently over the course of a year or through formative assessment practices that check for learning along the way. Collaboratively developing common assessments and/or deciding what assessments will be used to measure student learning is a core part of a PLC’s work together.

Table 17 indicates how frequently Team Lit teachers in School B engage in professional activities associated with the second question regarding assessment.
Table 17

School B Survey Results for Second PLC Question

<table>
<thead>
<tr>
<th></th>
<th>Almost every time we meet</th>
<th>Frequently</th>
<th>Infrequently</th>
<th>Never</th>
</tr>
</thead>
<tbody>
<tr>
<td>Develop common assessments</td>
<td>0%</td>
<td>50%</td>
<td>34%</td>
<td>17%</td>
</tr>
<tr>
<td>Discuss results from common assessments</td>
<td>17%</td>
<td>66%</td>
<td>17%</td>
<td>0%</td>
</tr>
<tr>
<td>Discuss results from other assessments</td>
<td>0%</td>
<td>50%</td>
<td>50%</td>
<td>0%</td>
</tr>
<tr>
<td>Review examples of student work</td>
<td>0%</td>
<td>34%</td>
<td>66%</td>
<td>0%</td>
</tr>
</tbody>
</table>

Table 17 indicates that one-half of the teachers surveyed stated they frequently develop common assessments when they meet for their Team Lit meetings, with another 34% saying they infrequently develop assessments during their meeting time. The principal of School B reported in her interview that the school in general and the Team Lit team in particular have “definitely worked on assessments” and believes that “the summative and benchmark assessments are very well developed.” She went on to say while they have been in place for a long time, they have also made adaptations to make sure that these assessments provide them with information they need to know about student learning. Regarding the common formative assessments, the principal noted that this is “a work in progress which will probably never end because we are always adjusting what we are teaching, how we are teaching, how we are going to assess it; what is the best way to assess particular learning.” Formative assessment in this school can involve paper/pencil types of measures but as the principal explained, it can also involve
checklists, rubrics and common ways of checking for understanding and skill development.

One member of the Team Lit group commented in their interview that one of the ways they have grown is through the development and addition of different common formative assessments. “That is one thing that has really improved our instruction.” An example of this that was discussed in the interview and also observed in one of the observed Team Lit meetings was the addition of a developmental spelling inventory tied to their *Words Their Way* instructional program. “We feel that adding *Words Their Way* and looking at the developmental spelling was huge because just like when you do a running record and you analyze the miscues, you figure out what the kid needs.” During their team meeting, the group discussed how the *Words Their Way* assessment would assist them in knowing where students are in relation to the continuum of encoding skills and what skill gaps, if any, exist for specific students. They also discussed how performance on the *Words Their Way* assessment aligns with a student’s instructional reading level and how this could be used to determine what decoding skills to work on with specific students. The group later discussed how they could develop and incorporate leveled word lists as pre-assessments for both decoding and encoding lessons when working at a particular guided reading level. As one teacher explained, “You can use those as your pre-assess words and figure out which ones you need to teach and which ones you need to review so the assessment can guide which words you are doing.”

Literacy development in School B is frequently assessed through the use of individual reading inventories, running records and fluency checks. The school as a
whole uses the *Fountas and Pinnell Benchmark Assessment System* to measure each child’s reading level several times per year. In addition, students who score below benchmark levels are progress monitored using AIMSweb fluency checks every week. Teachers also frequently conduct running records with the students in their small guided reading groups to formatively assess their reading skills. As one teacher stated, “We are constantly assessing.” For example, teachers shared how they had just assessed all of the students who were either below benchmark, right at benchmark or just right above the verge of benchmark even though the benchmark assessment period was going to be five weeks from then because they were just coming off a holiday break and wanted fresh data on the students.

In addition to weekly Team Lit meetings, the full first grade team that includes the Team Literacy group and three other first grade teachers meet weekly. One of the key agenda items that the teachers stated they address is a discussion of assessments that they will all administer at the same time. These common assessments have been developed and are used to measure student learning in reading, language, math, social studies and science. The Team Lit group is currently working this year to develop additional common formative assessments in math that can be used in addition to the AIMSweb benchmark math test that is administered several times per year and the unit tests that accompany their instructional math program. In particular, they are working to create assessments that will further measure and diagnose students’ math development on specific skills.

Data from both formal as well as more informal literacy assessments is shared and
discussed when the Team Lit group meet weekly in their PLC group. As indicated in Table 17, 83% of the Team Lit teachers from School B reported that they discuss results from common assessments “frequently” or “almost every time we meet.” In one of the observed Team Lit meetings, more than half of the time was spent sharing and discussing anecdotal information on each student gained from working in small guided reading groups during Team Lit time. Teachers discussed students’ fluency skills, how well they comprehended, what strategies they were using, how their writing is progressing, etc. In addition, the guided reading level the child was reading at was discussed and used as a common gauge of the child’s reading progress.

Students switch teachers every 6-8 weeks in the Team Lit model for a second round of guided reading instruction and are therefore seen by more than their homeroom teacher. The team believes that their assessment and analysis of student learning is strengthened because they have so many different teachers who have eyes on all the kids. Discussions in team meetings will frequently sound like, “Now you are working with Tommy, what do you see? Liz saw this and you see this. I see this. What do you think?” One teacher summed it up to say, “We have many sets of eyes on these kids and that alone has made a huge impact with kids this year.”

Having multiple sets of diagnostic eyes on each individual student and clear targeted levels for benchmark expectations has been proven to be helpful when determining if a child needs more support and specific interventions. In particular, the Team Lit group used past data on students from previous years to discuss and analyze projected rates of growth for current students. The team shared this with the building
principal and is working with other building staff to establish clear criteria and guidelines for when Tier III interventions will be put into place for students.

The Team Lit group from School B routinely incorporates the essence of DuFour et al.’s (2006) second question regarding how will we know when students have learned the intended objectives into their ongoing PLC time together. They use information gained from a variety of assessments and formative assessment practices to address the third and fourth questions of how they will respond.

**Question #3: How Will We Respond When Some Students Don’t Learn?**

**Question #4: How Will We Respond When Some Students Already Know?**

What teachers do in response to information gained from assessments is what sets formative assessment apart from summative assessment and is also the most essential aspect of a PLC’s work. It is only when teachers do something different in response to what they have learned about their students that improved learning can occur (Black et al., 2004).

The results shown in Table 18 indicate that the Team Lit teachers from School B are focused on discussing and using the results from assessments to identify who needs differentiation. Thirty-four percent of the teachers reported this happened “almost every time they meet” with the other 66% saying this happens “frequently”. The principal substantiated this finding in her interview when she stated that the PLC groups were purposefully kept to a maximum of 4 classroom teachers so the teachers would have fewer students to collaboratively discuss. The Team Lit PLC, she said is “constantly looking at how kids are doing, discussing what they need and what to do for them, as
well as discussing those that have exceeded expectations.”

Table 18

*School B Survey Results for the Third and Fourth PLC Questions*

<table>
<thead>
<tr>
<th>Determining which students need additional support or enrichment based on results</th>
<th>Almost every time we meet</th>
<th>Frequently</th>
<th>Infrequently</th>
<th>Never</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>34%</td>
<td>66%</td>
<td>0%</td>
<td>0%</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Plan for interventions/ Differentiation based on Results of assessments</th>
<th>Almost every time we meet</th>
<th>Frequently</th>
<th>Infrequently</th>
<th>Never</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>17%</td>
<td>66%</td>
<td>17%</td>
<td>0%</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Review student learning results after intervention/ Differentiation has been provided</th>
<th>Almost every time we meet</th>
<th>Frequently</th>
<th>Infrequently</th>
<th>Never</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>17%</td>
<td>83%</td>
<td>0%</td>
<td>0%</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Identify effective instructional practices based on results of assessments</th>
<th>Almost every time we meet</th>
<th>Frequently</th>
<th>Infrequently</th>
<th>Never</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>0%</td>
<td>100%</td>
<td>0%</td>
<td>0%</td>
</tr>
</tbody>
</table>

This focus on identification of student needs based on results was definitely seen in the observed PLC meetings. One entire meeting was devoted to an analysis of what guided reading levels students were currently functioning at, a projection of what level they might attain by benchmark time based on student growth data from previous years and then based on this, identification of which students needed additional intervention time. In subsequent meetings, they told me they discussed what this additional intervention (third dip as they call it) should look like, how much extra time did students need, and what the criteria should be for receiving this level of intervention.

This is an example of using results from assessments to plan for interventions and/or enrichment. Table 18 indicates that 100% of Team Lit teachers say that planning for differentiation based on results happens “frequently” or “almost every time they
meet.” In the first observed PLC meeting, the team spent time discussing how they could use the result from the *Words Their Way* assessment to plan differentiated instruction in word work and spelling. One teacher shared how she had used her data to group her first grade students into three groups and how she was going to differentiate their instruction based on this data and their grouping. Another teacher discussed how you could even differentiate to meet specific needs and skill gaps within these groups. Teachers discussed a variety of differentiation ideas for students on the low end but also discussed how instruction could be extended and enriched for students on the high end. One teacher commented in the interview that “those kids who already get it are not just being kept busy. They are being challenged just like every other kid. That is the beauty of our model. Every single kid is getting exactly what they are ready for and served with real equality.”

All students on the Team Lit team are placed in Team Lit small groups based on data. This data is used to plan this second round of daily guided reading instruction. When the Team Lit group meets, they discuss how students are performing in these groups and share additional ideas for differentiating and supporting students. For example, one teacher suggested that a girl from her homeroom needs to do a verbal rehearsal when writing because she loses track of what she is writing. The teacher suggested that she say the sentence out loud, count it out and then write it. This led to a brief discussion of how helpful it is for most students to read their writing back to someone and how this serves as a great self-assessment for students.

Table 18 indicates 100% of Team Lit teachers report using information from a
variety of assessments to identify if particular interventions and differentiation ideas are helping students to learn. In the interview they discussed how they will analyze assessment data from progress monitoring tools as well as more informal formative assessment practices to see if the differentiation they are providing is making a difference. In both the interview and the observed team meetings, it was apparent that the Team Lit teachers are extremely conscious of where each child is currently performing and if they are not at a particular place at a certain time, how it is going to be difficult to meet the expected benchmark at the end of the year. They are critically asking if students are in the right place and if they are getting enough support. As one teacher said, “This is critical and you don’t wait until after spring break to say, oh God, I don’t think he is going to make it.”

Team Lit teachers from School B also use assessment data formatively to determine if particular instructional ideas are effective and whether they should be continued, modified or changed. For example, some of the teachers discussed that it might help students to learn to summarize better if they moved down a guided reading level and just really focused on the skill of summarizing with easier text.

Both the quantitative as well as qualitative data for School B indicates that teachers incorporate DuFour et al.’s (2006) four questions in their work as PLCs. At the building level, as the principal looks at data over a ten year period of time, she can see that PLCs have made a difference in student learning. She believes that when the school purposefully aligned instructional support with how students were functioning, they became so much more intentional and began to see dramatic improvements in students’
performance over time. The Team Lit group concurs that student learning has improved over time and believes the focus on continually assessing and analyzing student learning and ensuring that all students are progressing has pushed them as teachers which in turn has impacted students.

**Summary of Results from School A and School B**

There were many similarities found in the data collected for each school site in regards to how they use the four guiding questions of DuFour et al.’s (2006) PLC model to develop and use common formative assessments as a means for improving student learning. The data also revealed some differences between the two schools in how they use and address the questions. While neither school stated that the questions are always formally addressed in their weekly agendas, School B stated the questions serve as a fundamental framework of their work. School A on the other hand, said they incorporate the essential essence of the questions in their professional work together but do not explicitly use the questions as a guide.

A high percentage of teachers from both case sites report that they frequently engage in professional activities centered on the first question of the DuFour, et al. (2006) PLC model. Establishing clear learning targets and collaboratively planning instructional activities to achieve these targets is something that both PLC teams frequently do when they meet for their weekly meetings as well as during other professional time together. It was clear from the survey data, the responses to the focus group interview and the principal interview, as well as the observed PLC meetings that both schools understand the importance of beginning with the end in mind and having well established and
consistent expectations for student learning across all teachers at the same grade level. It was also clear that the teachers value planning instruction together and sharing effective instructional ideas and approaches.

In response to DuFour et al.’s (2006) second guiding question regarding how will we know if students have learned the intended targets, there was more discrepancy between the two PLC groups. Differences were seen in the survey data between the two schools in how often teachers reported they spent time developing common assessments, discussing the results of common assessments and discussing results from other assessments. This may be due to how teachers in each school system define “common assessments”. Regardless of the specific name they attach to an assessment, the PLC teams from both schools spend time discussing how student learning will be measured and also spend time discussing the results of student learning they receive from these measures. An examination of the descriptive data obtained from the interviews and the transcribed observations of each team’s PLC meetings does reveal that while there are some similarities in the types of assessments used and how data from these assessments is used, there are also some fundamental differences in the level of importance each team places on certain types of assessments and how each PLC team uses the data they receive. For example, both schools administer Individual Reading Inventories (IRI) multiple times per year to measure their students’ reading level. In School B, discussion of each student’s guided reading level was a continuous and centrally unifying aspect of the discussions regarding student learning witnessed during their observed PLC meetings. In contrast, discussion of a student’s IRI results or guided reading level was never heard in
School A’s two observed PLC meetings. While both schools appeared to have common assessments tied to specific instructional units in social studies and science, these assessments appeared to play a more dominant role in School A in the development of grades for their standards based report card and in the identification of effective instructional practices to maintain and ineffective practices to alter for the following year. The similarities as well as differences seen between these two schools in relation to DuFour et al.’s (2006) second question will be discussed more fully in Chapter Six.

Teachers from both PLC teams use their assessment results to respond to the learning needs of students who struggle (DuFour et al.’s, 2006, third question). Both schools use results from benchmark assessments to identify students who fall below the expected level of performance. Teachers from both schools also use these results as well as other diagnostic forms of assessment and observations to determine the specific area(s) of need and to develop and design interventions and differentiated instructional ideas to use to improve these students’ learning. Results from various assessments are also used in both school systems to determine the effectiveness of these interventions and to determine if students are closing the gap.

In regards to the fourth guiding question that DuFour, et al. (2006) believes drives the work of PLCs, there are some differences in how the two schools use assessment results to respond to students who already know the intended learning targets. School A does not put as much emphasis on using assessment results to differentiate instruction for high end students as was seen in School B. The manner in which they group students for instruction may have a role to play in this difference. Flexible grouping of students for
instruction is more dynamic in School B’s Team Lit model than in the way School A
groups students for instruction. In addition, School B shared that they purposefully are
trying to make sure that all children are receiving challenging instruction at their
appropriate level that will enable them to continue to learn and grow.

Overall, the types of assessments that School B uses and how they respond to data
from these assessments tends to be more formative in nature than how assessment data is
collected and used in School A. This difference will be more fully described in Chapter
VI along with analysis of how this difference relates to the first research question
regarding the philosophical tenets of a PLC.
CHAPTER VI

DISCUSSION OF RESULTS

Chapter VI presents a summary of results for each of the two research questions examined in this dissertation study and will share results related to the theoretical proposition associated with this study. Interpretation of the results for each research question and the relationship between PLCs and common formative assessments is provided followed by a discussion of these results with previous research literature. Implications stemming from the results of this study are presented as well as the limitations associated with this study. The chapter concludes with a brief discussion of future research that should be considered to more completely address the intent of the study.

Summary of Results

Summary of Results for First Research Question

Understanding the philosophical tenets on which a PLC is based helps to explain why the PLC model helps teachers to improve student learning. DuFour and Eaker (1998) and later DuFour et al. (2006) identified these tenets as (1) Collaborative Culture; (2) Collective Inquiry and Action; (3) Shared Vision and Goals; (4) Focus on Learning; (5) Mind Set of Continuous Improvement; and (6) Results Oriented. These tenets form the essence of how teachers come together as a learning community to discuss and examine student learning and ultimately to make changes in actual teaching practices that
can lead to improved student learning.

The following section provides a summary of the data obtained from the two schools involved in this dissertation related to the question of how each underlying philosophical tenet of a PLC helps teachers to develop common formative assessments, analyze and then use the results from such assessments as a means for improving student learning. A summary of the quantitative results from the teacher survey that asked perceptual information regarding the level to which each individual in the two PLC teams perceived each tenet to exist within their team and school will be provided. A summary of the quantitative information regarding the number of times a tenet was discussed in the focus group interview or seen during the observed PLC meetings will also be provided for each tenet. Common themes that emerged from these observations and interviews that help to explain how each tenet helps teachers to develop assessments and then analyze and use the results to improve student learning will also be summarized.

In general, the results reveal that all six tenets commonly associated with PLCs are solidly evident in each of the two PLC teams examined in this study. A collaborative culture exists in each team; each school and team has developed a shared vision and focus on student learning; staff members are willing to work together to learn and apply new ideas to meet student needs and improve learning; and staff in both schools examine and use the results of their efforts to improve student learning.

Collaborative culture. Results from the staff survey indicate teachers from both schools perceive their school and team as demonstrating a collaborative culture in which trust and respect are demonstrated and collegial relationships reflect a shared
commitment to improvement. All of the teachers in School A and most teachers in School B feel comfortable observing in one another’s classrooms. There was some discrepancy between the two schools in the teachers’ perception of whether appropriate time is provided to facilitate collaborative work and for them to engage in the sharing of practices and collective learning. School A’s more negative perceptions regarding time for collaboration is most likely due to the elimination of their team’s common planning time this year.

The number of coded examples showing evidence of a collaborative culture heard during the interview or witnessed during the observations was very high for both schools. For School A, the Collaborative Culture tenet had the highest number of coded examples of any tenet, with over twice as many coded examples as any other tenet. This was also the only tenet in which School A had more coded examples than School B.

Common themes that emerged across both schools from the coded examples of a Collaborative Culture include constant communication; a strong sense of community within the team; mutual respect for team members; willingness to work together to plan curriculum, instruction and assessment; willingness to work together to share ideas and information with one another; willingness to ask for input and give suggestions; desire to support one another and push each member to their best performance level; cooperation to share the workload and an expectation to hold each other accountable. There were some minor differences in themes between the two schools with School A discussing how they value this dedicated time together and how they demonstrate a great deal of flexibility and cooperation when working together. School B emphasized how they feel
a collective sense of responsibility for all of the students on the team.

**Collective inquiry and action orientation.** Perceptual information gained from the teacher survey indicates that teachers at both schools believe they work together to learn new knowledge, solve problems and address student learning needs and teaching challenges. However, there were a somewhat limited number of examples of teachers engaging in collective inquiry and action oriented response during the observed PLC meetings or discussing examples of this type of work in the focus group interview. The tenet of Collective Inquiry and Action Orientation had the second lowest count of coded responses at both schools.

A common theme that emerged from the examples of how the two schools engage in collective inquiry and action orientation involves collective work on curriculum and instruction. Both schools also collectively discuss and work on assessments. However differences between the two schools were seen in how they formatively use the information they obtain from assessments with School B’s Team Lit PLC using data to plan next instructional steps more frequently than School A’s fourth grade team. The PLC team in School B showed more examples of being solution driven and task oriented while the PLC group in School A could occasionally get off task and take a longer time to reach a decision or solution.

**Shared vision and goals.** Teachers from both schools believe that their school has developed a shared vision that focuses on student learning and that decisions are made in alignment with this vision. School A indicated less than universal agreement on the teacher survey that a collaborative process was used to create the vision. References
to the school’s vision were made during both schools’ focus group interview. Because the vision for both schools was a strong focus on the learning of all students, examples of teachers demonstrating this tenet in action during the observed PLC meetings were coded as examples of a Focus on Learning and not as an example of Shared Vision and Goals. Therefore the frequency count for this tenet of Shared Vision and Goals is the lowest of all six tenets. This should not be interpreted that the two schools do not have a strong shared vision and goals but rather a decision made by the researcher to not double count examples of tenets.

**Focus on learning.** Teachers from both schools examined in this study believe their school has a strong focus on student learning. Both PLC groups believe they set high expectations for student learning, assume shared responsibility for student achievement and are committed to programs that enhance learning. Teachers in both schools share ideas for improving student learning and work together to search for solutions to address student needs. In both schools, there was some disagreement of whether professional development focuses on teaching and learning.

The teachers’ perceptions regarding a strong focus on learning was mirrored by a high number of examples of this Focus on Learning being coded in the transcripts of both schools’ focus group interview and observed PLC meetings. It is important to note that while both schools had a high number of coded examples, the number from the first grade Team Lit PLC from School B was double that of School A. For School B, the Focus on Learning tenet and the Results Orientation tenet were the two strongest tenets observed in the PLC meetings.
School A and B had three similar themes as it relates to their Focus on Learning. Both schools are clear on what they want students to learn. Both schools are also committed to their students’ learning and relate their own success to the success of their students. And both schools will problem solve and are willing to take the next step to improve their students’ learning.

**Mind set of continuous improvement.** Teacher perception regarding whether a Mind Set of Continuous Improvement exists within the school culture was somewhat mixed for both schools. There was universal agreement among both PLC teams that collegial relationships among the staff reflect a commitment to school improvement and that staff review student work and share ideas in order to improve student learning. However, fewer teachers from both schools reported on the survey that they regularly apply new knowledge and discuss the results of their practices or that they frequently provide feedback regarding instructional practices to their peers. On the survey, there also was not universal agreement on School B’s first grade Team Lit PLC that there was a sustained effort to embrace or embed change into the school culture although other members commented in the interview that they see change as organic and a natural part of their work.

The frequency count of how often examples of a Mind Set of Continuous Improvement were seen or heard in the interview or observed PLC meetings fell within the mid-range for both schools. Common themes found in both schools that reflect a Mind Set of Continuous Improvement include a willingness to try new ideas, a motivation to continue to learn and grow professionally, reflective conversations and
continuous review of instruction. The fourth grade team from School A frequently analyzes assessment data to make changes the next time they teach a unit. Whereas, School B uses information from frequent teacher observations and informal assessments to plan the very next step to take with a given student or group of students.

**Results orientation.** The teacher survey revealed that a focus on examining results was perceived by the PLC teams in both schools to be evident but was more prevalent as it relates to examining student work and evidence of student learning than it was to discussing and sharing results of specific instructional practices. The number of examples of a Results Orientation coded in the transcripts of the focus group interview and observed PLC meetings differed between the two schools in this study. For the first grade Team Lit PLC from School B, this tenet along with a Focus on Learning, were the two most frequently coded tenets. It is important to note that the number of coded examples from School B was double that of School A. The number of coded examples relating to a Results Orientation fell into the mid-range frequency of coded examples of tenets for School A.

There were a few common themes in how the two schools displayed a Results Orientation during their PLC meetings or in their focus group interview. Teachers from both schools frequently discuss student learning concentrating on both the learning of individual students and the learning of all students. Teachers from both schools ultimately believe that their professional success is linked to the success and learning results of their students. Differences, however, were seen in how each school examined and used actual results of student learning. In School A’s fourth grade PLC, assessments
were considered an integral part of any unit of study. In addition to end of unit assessments, unit pre-assessments were used to plan instruction and also to measure growth as a result of instruction. In general, the use of assessment results appeared to be more summative in School A. In contrast, the first grade Team Lit PLC measured students’ learning more frequently through informal running records and observations of students’ reading development while also using benchmark assessments tied to very clear established criteria for expectations. Results and evidence of a student’s reading development were analyzed in relation to these expectations to determine what changes should be made to a student’s instruction to accelerate their growth. The Team Lit PLC from School B also examined the results of all students on a regular basis and kept aggregate data over time to examine if instructional results were improving year to year as a result of their instructional model.

In looking at the data sources from both schools on all six tenets, each tenet is evident in how the two PLC groups operate as a professional team to improve student learning. As discussed, some tenets were observed or heard more frequently than others and may play a greater role in helping teachers develop and use assessments. In general, there does appear to be congruence between the data stemming from the teacher survey and the frequency count of how often each tenet was heard or observed. This congruence helps to develop construct validity that the tenets have in fact been internalized in each PLC team and influences the way teachers work together to examine and improve student learning.
Summary of Results for Second Research Question

As DuFour et al. (2006) state, “The questions posed by an organization – and the effort and energy spent in the pursuit of the answers – not only communicate priorities but also direct members in a particular direction” (p. 21). This is the reason why the DuFour et al. (2006) PLC model is built around the following four guiding questions:

1. What do we want students to learn?
2. How will we know when they have learned?
3. How will we respond when some students don’t learn?
4. How will we respond when some students already know?

The main focus or priority for schools choosing to have their teachers work as PLCs is to promote high quality student learning. In the DuFour et al. (2006) PLC model, high quality learning consists of teachers being clear about what students should learn, development and use of appropriate ways to measure if students have learned these expectations and teachers responding to the results of these assessments. Thus the PLC model and particularly DuFour et al.’s four guiding questions are intended to help teachers in a school to achieve its fundamental priority of all students learning at high levels. The question of how DuFour et al.’s questions help to prioritize and structure the work of teachers to achieve this priority is what the second research question is intended to answer.

The first question in DuFour et al.’s (2006) PLC model is reflective of the need for clearly established learning goals. The PLC teams from both schools examined in this dissertation study shared how they had collaboratively discussed and agreed upon
student learning targets and how important this was to their work with students and with each other as professionals. Teachers on both of the teams believe it is important to begin with the end in mind and have collaboratively identified what they want their students to know and be able to do as a result of their instruction. Teachers on both PLC teams believe this results in a common language they can use with students but also can use to collaboratively discuss specific student learning in relation to the agreed upon expectations.

In addition to establishing learning targets, teachers working in well-developed PLCs also frequently plan instructional units and lessons together and share effective instructional ideas. Teachers from both schools involved in this study reported that collaborative instructional planning frequently occurs when they meet as PLCs. A large majority of the teachers from both School A and B reported that they share instructional ideas and frequently plan instructional units together. Multiple examples of collaborative unit and lesson planning and sharing of ideas were seen in the firsthand observations of PLC meetings in both schools. In the focus group interviews, teachers from both schools stated how they value working together in this way planning lessons and sharing effective instructional ideas. At both sites, teachers felt this helped them to grow professionally and become better teachers.

Examination of how the PLC teams from the two schools engage in professional activities related to DuFour et al.’s (2006) second question regarding how will we know if students have learned the intended target reveal some interesting findings. First, there was more quantitative and qualitative discrepancy between the two case sites regarding
the development and use of assessments. Differences between the two PLC groups were seen on the survey in how frequently they reported spending time developing common assessments, discussing the results of common assessments and discussing results from other assessments. School A reported spending time developing or discussing common assessments less frequently than School B. As stated in Chapter V, these differences may be due to how teachers in each school system define “common assessments.” Teachers in School A, which is part of a larger elementary district comprised of four elementary schools, think of common assessments as those that have recently been developed by a district committee for use across the district at that particular grade level. In contrast, School B is a smaller district with only one school for primary students and the first grade teachers were more directly involved in designing the common assessments and have used them for a longer period of time.

Regardless of the specific name they attach to an assessment, the PLC teams from both schools do spend time discussing how student learning will be measured and developing common ways to approach this. Thus, the development of common assessments is an aspect of collaborative work that teachers from these two schools do engage in. However, this is not something that occurs every time they meet. On the survey, only a quarter of the teachers from School A reported this happens frequently and only half from School B reported common assessments are frequently developed when they meet as PLCs. With that said, examples of each team collaboratively discussing a new or existing assessment were observed during PLC meetings at each school. The fourth grade PLC team from School A discussed a new way to measure reading
comprehension and also examined and revised an existing common assessment they had previously developed to make sure it appropriately assesses their students’ learning.

School B is also concerned that the common assessments that they develop or administer should provide them with accurate and useful information that they can use to guide their instruction. They are currently working to develop common formative assessments for math that will provide them with useful information for differentiating instruction.

Both schools want assessment to provide them with accurate information about their students’ learning. However, a close examination of the descriptive data obtained from the interviews and the transcribed observations reveal that the fourth grade PLC team in School A uses assessment results for more summative purposes than the first grade PLC team in School B. It appeared, assessment results are used in School A at the end of an instructional unit to measure how well students learned the intended standards, to determine what changes to make the next time they teach this unit and to develop grades for the report card. In depth discussions of the next steps to take to ensure all students learn intended learning targets were not observed. In contrast, the first grade PLC from School B spent time in their meetings collaboratively focusing on the literacy development of every student. Team members discussed information gained from Individual Reading Inventories, daily observations of students’ progress and developmental spelling inventories and talked about how this information helps them to determine the next instructional step to take with each child or group of children.

The third question in the DuFour et al. (2006) PLC model asks teachers to consider how they will respond when some students don’t learn the intended objectives.
Teachers from both PLC teams examined in this study use assessment results to respond to student needs. All of the teachers from both schools reported on the survey that they frequently use their PLC time to determine which students need additional support or enrichment based on results. This professional activity was the one most similarly rated between the two schools and was the only response in which both schools had 100% of the teachers saying the activity occurred frequently during PLC meetings. Examples of teachers discussing and using results from benchmark assessments to identify students who fall below the expected level of performance were witnessed during observations of PLC meetings in both schools. This type of discussion and identification of struggling students is part of how each school incorporates a Response to Intervention (RTI) initiative in their schools. Information from these benchmark assessments and other diagnostic measures are used in conjunction with teacher observations to determine the specific area(s) of instructional need a particular student or group of students is displaying. Both schools then develop and design interventions and differentiated instructional ideas to improve these specific learning needs. All of the fourth grade teachers in School A reported this type of intervention planning occurs frequently when they meet, while a large majority of the Team Lit first grade teachers at School B reported this happens frequently when they meet. The specific manner in which interventions are provided differs between the two schools but both teams assume collective responsibility for the learning of all students on their team and use some form of flexible grouping to meet their students’ needs. Students receiving interventions in both schools are frequently assessed to monitor their learning progress and determine if
the intervention is effective and helping the child achieve closer to the expected level of performance. Teachers at both schools frequently discuss the results of these progress monitoring assessments when they meet and make adjustments to the instructional interventions as necessary.

There was more variance in how the two schools analyze and use assessment data to answer the fourth question in the DuFour et al. (2006) model (How will we respond when some students already know the learning targets?). Fourth grade teachers from School A admitted in the interview that they do not put as much emphasis on analyzing, discussing and responding to the high achieving students as they do the students who struggle. While teachers from School B’s first grade Team Lit PLC feel compelled to respond to the needs of low students, they also purposefully try to ensure that all children are receiving challenging instruction at an appropriate level. The more discernable response to meeting the needs of high achieving students in School B may be due in part to the manner in which each school groups students for instruction. Both schools will group students according to need for instruction but the grouping process is more dynamic in School B. The first grade Team Lit group from School B is also more likely to differentiate instruction even within a small homogeneous group.

Ongoing analysis of and response to student learning is a clear driving force in how the Team Lit first grade PLC at School B operates. While both schools discussed and displayed examples of how they analyze student learning and respond to students’ learning needs, the frequency and passion with which this occurs in School B was markedly different. “What are we going to do to help this student?” was a phrase
frequently interwoven into School B’s collaborative discussions. They used DuFour et al.’s (2006) first question to clearly identify what they wanted students to know and how they would measure learning (question 2) and then collaboratively and steadfastly focused on what the response should be if a student was not learning or making adequate progress toward the intended goal. This laser like focus on ensuring all first grade students develop strong reading skills was apparent throughout the focus group interview and observations of PLC meetings. The factors that may account for the more pronounced response to meeting student needs witnessed in the observations of School B’s PLC meeting will be discussed later in the interpretation of results section.

In general, the PLC teams from both schools do address all four of DuFour et al.’s (2006) guiding questions but there are some differences between the two schools in how frequently or explicitly they incorporate these questions into their professional work together. The first grade Team Lit PLC from School B tends to address all four of the questions more directly than the fourth grade PLC team from School A. School B’s response to the third and fourth questions reflects a more formative use of assessment results and a more focused emphasis on planning differentiated responses to meet student learning needs. Both schools tend to spend more time focusing on the first question related to intended learning targets and the third question regarding how to respond when students fail to learn these targets. While time is spent developing or discussing assessments, this is not something that happens every time they meet.
Relationship Between Research Questions and Common Formative Assessments

This dissertation was designed to examine how teachers working within a PLC, apply the philosophical tenets and utilize the structure of the four guiding questions of DuFour et al.’s (2006) PLC model to develop and use common formative assessments as a means for improving student learning. Two separate research questions were formulated and used to analyze how each of these factors (tenets and guiding questions) influenced the work of the PLC teams examined. It is also important, however, to analyze the relationship between these two factors and determine how they interrelate in a PLC team’s efforts to use common formative assessments to improve student learning.

The theoretical proposition connected with the relationship between the philosophical tenets and the four guiding questions of DuFour et al.’s (2006) model and the use of common formative assessments is whether groups of teachers who have internalized and apply the tenets and utilize the four guiding questions, more frequently and effectively develop, analyze and use common formative assessments to improve student learning. This theoretical proposition was tested by examining the data relating to the existence and application of the tenets of a PLC and the use of DuFour et al.’s four guiding questions in comparison to the data gathered regarding the professional activities centered on the development and use of common assessments.

The strength or level of implementation of the PLC tenets was measured by the Teacher Survey and the number of coded examples of each tenet seen in the observed PLC meetings or heard in the focus group interview. On the survey, teachers from both schools provided self-reported perceptions regarding the existence and strength of the six
tenets in their school and team. Both schools examined in this study reported that they believe the six tenets commonly associated with PLCs are evident in their school. However, the first grade Team Lit PLC from School B reported slightly higher perceptions regarding the existence and internalization of the tenets in their team. The number of coded examples of each tenet seen in the observed PLC meetings or heard in the focus group interview was reported in Table 10 in Chapter IV. The first grade Team Lit group from School B demonstrated more coded examples than the fourth grade team from School A on five out of the six tenets. School A had more coded examples than School B on only the tenet of a Collaborative Culture. In two of the six tenets (Focus on Learning and Results Orientation) School B had twice as many coded examples of these tenets than School A and on the tenet of Collective Inquiry, School B had almost twice as many coded examples as School A. These results would indicate that the tenets are stronger and more deeply internalized in School B.

Utilization of the four guiding questions was measured by specific questions on the Teacher Survey that asked how frequently the team engaged in activities associated with each question. Quantitatively, teachers from School B self-reported on the survey that they engaged in activities associated with the four guiding questions of a PLC slightly more frequently than School A. Responses from both School B’s focus group interview as well as the principal interview indicated that these questions were explicitly studied and serve as a guiding structure of School B’s work. Thus, the results indicate that the utilization of the four guiding questions is higher for School B than School A.

While both schools analyzed and used assessment data to ultimately improve
student learning, the Team Lit PLC from School B demonstrated a more intentional and frequent focus on analyzing student learning in an attempt to improve the learning of all students. This laser like focus on ensuring all first grade students develop strong reading skills was apparent throughout the focus group interview and observations of PLC meetings. The team steadfastly focused on what the response should be if a student was not learning or making adequate progress toward the intended goal. Progress was measured by a number of common formative assessments and practices. Teachers frequently administered running records to assess their oral reading, gave benchmark reading assessments to determine what guided reading level they were performing at, administered developmental spelling and phonics inventories, and carefully observed students during small group and one on one instruction.

The data indicates that School B demonstrated a higher level of internalization of the tenets, a deeper utilization of the four guiding questions and a frequent and more intentional analysis of student learning using a variety of formative assessments than School A. Thus the data from this dissertation study would support the theoretical proposition that the higher the level of internalization of PLC tenets and use of DuFour et al.’s guiding questions, the higher the likelihood of also effectively and more frequently using common formative assessments to improve instruction. The reasoning for how the tenets and guiding questions help a team to use common formative assessments to improve instruction and ultimately student learning can be found in the following section.
Interpretation of Results

Interpretation of Results From First Research Question

The first research question explored in this dissertation asks, how the underlying philosophical tenets of a PLC help teachers to develop common formative assessments, analyze and then use the results from such assessments as a means for improving student learning. Answers to this question can be found in the examination of quantitative results stemming from the teacher survey and the number of coded examples of tenets as well as a qualitative analysis of the themes that emerged from the focus group interviews and observations of PLC meetings.

The philosophical tenets of a Focus on Learning, a Results Orientation and a Collaborative Culture were the most prevalent tenets seen in how the two schools in this study function as PLCs. The results of this study would suggest that these three tenets matter the most to a school’s or team’s ability to ensure and improve student learning. These tenets form the foundation for a group of teachers to come together to develop common assessments and use the results to improve student learning. Examination of the common themes found in the two schools’ examples of these three tenets in action help to answer the first research question and explain how these tenets help teachers to develop and use the results of common assessments to improve student learning.

Focus on learning. “The professional learning community model flows from the assumption that the core mission of formal education is not simply to ensure that students are taught but to ensure that they learn (DuFour, 2005, p. 32). The results of this study would support that the philosophical tenet of a Focus on Learning is the most
fundamental element of a PLC and explains why PLCs exist. Both schools in this research study demonstrated a strong focus on learning and were committed to every child’s success. While one school had a focus on learning clearly embedded in their mission statement, the other school used this belief as their guiding force in their work as a PLC.

The results from this study suggest that there is a strong connection between this Focus on Learning tenet and DuFour et al.’s (2006) guiding questions. The schools in this study demonstrated their focus on learning by clearly establishing what students are intended to learn and be able to do (DuFour et al.’s first question). Determining what assessments will be used to know if students have learned the intended outcome (DuFour et al.’s second question) was also observed in both schools and coded as a focus on learning. DuFour et al’s third and fourth questions helped the PLC teams in this study to focus on their students’ learning by analyzing and using the results of assessments to determine if students had learned and discussing what steps should be taken next to ensure and improve learning. Collaboratively answering the third and fourth questions is at the heart of how teachers can use PLCs to improve student learning. Analyzing the results from frequent measures of student learning enables teachers to identify which students are meeting expectations, which are exceeding expectations and which students are struggling. Plans can then be developed to respond to the needs of all students to promote learning growth.

The results of this study would suggest that without a strongly embedded commitment to focus on student learning, teachers are less likely to use their professional
time to develop and use assessments to improve student learning. The commitment of ensuring the learning of all students drives their PLC work. DuFour et al.’s (2006) questions helps them to structure their work to achieve this goal.

**Results orientation.** The second tenet that appears from the results of this study to be strongly tied to a team’s ability to improve student learning is a focus on results. Professional learning communities judge their effectiveness on the basis of actual results, rather than intentions or actions, and embrace data as an essential tool in their process of collective inquiry (DuFour & Eaker, 1998). Both schools examined in this study publicly stated they base their own professional effectiveness on the results of student learning. Both schools examined in this study, also displayed evidence of being results oriented by frequently discussing student learning based on assessment results as well as their own professional observations.

Both schools in this study use the results of assessments to determine who needs additional support or interventions. They also use results to determine if interventions are making a difference and helping to close the gap for struggling students. This use of assessment data is very much aligned with the Response to Intervention (RTI) model that all schools are mandated to use. The results of this study would suggest that being results oriented may help schools to develop and use assessments and effectively use RTI to improve student learning.

As discussed previously in the summary of results for the first research question, there were differences in the frequency of coded examples of this tenet as well as the extent to which the two schools formatively used assessment data to drive instructional
decision-making. The first grade Team Lit PLC from School B had double the number of coded examples of a Results Orientation compared to the fourth grade PLC from School A. Similar differences were also found between the two schools for the number of coded examples of a Focus on Learning. These differences may be attributed to the Team Lit’s commitment to collaboratively discuss the reading progress of every student on their team every few weeks. This commitment helps them prioritize how they use their time when they meet together and results in more time spent analyzing student learning.

In addition to quantitative differences in how much time is spent discussing results, qualitative differences in how results were used were also found between the two schools. It appeared School B tended to analyze and use assessment information more formatively to immediately adapt instruction to meet the needs of students. School A in contrast tended to look at results from more of a summative manner to determine how well students learned overall and would discuss what changes to make the next time they teach that unit. The research suggests that schools can display a Focus on Learning and a Results Orientation but still use assessment results in some profoundly different ways. While both School A and School B develop common assessments and analyze the results from such assessments, it did not appear that School A always used assessment results to alter instruction for the group of students they were currently working with. The fourth grade teachers reported that some times they will go back and re-teach a concept that students had difficulty with on the assessment but sometimes they just make note of those areas and will adjust their instruction next year. This more summative use of common assessment results may be due to the scope and nature of units that is a part of the fourth
grade curriculum. The first grade literacy curriculum, in contrast, most likely spirals instruction with skills being revisited multiple times with increasingly difficult text. This type of curriculum may lend itself to more immediate formative use of results from common assessments. The nature of the curriculum may therefore influence the type of common assessments that are developed and used. It may be more important to develop and use common formative assessments for ongoing curriculum that spirals and is more developmentally sequential such as reading skills, writing and mathematical problem solving. Curriculum that entails more discrete concepts such as a unit of study in science may lend itself better to formative assessment practices during the period of study and use of common assessments that are more summative in nature at the end of the period of study.

While there were differences between the two schools in how they used the results of assessments, the research does support that having a results orientation matters. The research from this study supports that seeing results of student learning as important, causes assessment results to be valued and used to improve instruction and ultimately make a difference in student learning. Without a strong internalization of this tenet, teachers can see assessment as one more thing they have to do that takes away from instructional time rather than a tool that can help guide instructional time.

**Collaborative culture.** The third tenet that appears from the results of this study to be strongly tied to a team’s ability to improve student learning is a collaborative culture. Findings gathered from these two PLC teams suggest that when teachers see themselves as a community, value collaboration and demonstrate respect for one another,
it makes it easier for them to work together to carefully plan and execute a common curriculum and to measure student learning against this curriculum using common assessments. The study also suggests that when a collaborative culture exists, as was found in both schools examined in this research, teachers are more likely to share effective instructional ideas and to ask each other for input and advice. Providing this type of support and pushing one another to become the best teacher they can be, was evident in both schools examined and is likely linked with improved student learning.

Findings from Darling-Hammond (2000), McCaffrey, Lockwood, Loretz and Hamilton (2003), Sanders and Rivers (1996), Wenglinsky (2002), Wright, Horn and Sanders (1997) that improving teachers’ instructional expertise correlates with improvements in student learning would support this claim. Developing and sustaining a strong collaborative culture encourages teachers to support and learn from one another and improve their instructional expertise.

A collaborative culture also allows the team to view their efforts as shared work in which they are all responsible for the learning of all students on the team. This belief pushes them to share effective instructional ideas, to develop common ways to assess and measure student learning, to collectively discuss results of students’ learning, and to plan interventions as well as ideas for improving instruction.

Being a part of a collaborative effort typically increases buy in. The fourth grade teachers in School A may not have viewed their “common assessments” as something they were truly a part of developing, which in turn might explain why they used the results less formatively and saw the results as something they had to just turn into the
district. Working together to determine what is most important for students to learn and then collaboratively determining what this learning should look like via an assessment or a rubric helps teams of teachers to value the results and use them to closely examine student learning and plan next instructional steps.

Time for collaboration has been cited in previous research and literature on PLCs as a critical factor in a team’s ability to work together to improve student learning (DuFour et al., 2006; DuFour & Eaker, 1998; Hord & Hirsch as cited in Blankenstein et al., 2008; Hord & Sommers, 2008). The fourth grade teachers in School A indicated on their teacher survey and in their focus group interview that the loss of common planning time this year made it more challenging for them to engage in collaborative work relating to the analysis of student learning and the sharing of instructional practices. Whether this lack of common planning time contributes to the differences noted between the two schools would be difficult to determine but time for collaboration whether it is during a common planning time or some other time during the week needs to be provided if teachers are to use PLCs to improve student learning.

**Mind set of continuous improvement.** The philosophical tenet of a Mind Set of Continuous Improvement would also appear from the results of this study to be important to the work of a PLC. Findings from the two schools indicated this mind set of continuous improvement translated into a willingness to try new ideas, a motivation to continue to learn and grow professionally, reflective conversations and continuous review of instruction. The results suggest that if teachers are committed to improve their practices in order to improve student learning, they will be willing to review student work
and assessment results and use their time together to discuss ideas to meet student needs.

**Integration of tenets.** The tenets of a Focus on Learning, a Results Orientation, a Collaborative Culture and a Mind Set of Continuous Improvement is each important on its own but it is also the integration of these tenets that enables a team to improve student learning. When teachers are focused on student learning, they have a need to pay attention to results. And when they focus on learning and pay attention to results, they need to be willing to make changes to improve the results of student learning. A collaborative culture is the glue that allows teachers to do this work together rather than work in isolation in a less productive fashion.

Having a shared vision and common goals are also important to a PLC’s work and often integrated with the other tenets. If the school or PLC values a collaborative culture it is likely they are going to have a common vision and goals for their school and their teams. Likewise, if the school or team has a strong focus on learning and analyzing the results of student learning, it is likely the vision of the school or team will have something to do with ensuring that all students are learning through continuous improvement efforts. The case studies conducted in this dissertation serve as examples of how the tenets integrate with one another to support the PLC teams in the improvement of student learning through the use of common assessments.

**Interpretation of Results From Second Research Question**

The second research question this dissertation was designed to study is how the four guiding questions in DuFour et al.’s (2006) PLC model help elementary teachers to develop common formative assessments, analyze their results and use this information to
improve student learning. Answers to this question can be found in a close examination of the data gained from the observations of PLC meetings in both schools and the responses to the focus group interview.

If the main focus or priority for schools choosing to have their teachers work as PLCs is to promote high quality student learning, then it would seem logical that teachers should have a clear sense of what it is they want students to know and be able to do. Establishing clear learning targets is an important factor in student achievement (DuFour & Eaker, 1998; Marzano, 2007). The results of this study would support the importance of having clearly defined and agreed upon learning targets. Both of the PLC teams examined in this study, spent time working together to establish clearly defined learning targets. The data stemming from the observations of the two PLC teams indicate that having common learning targets and a common language to use when discussing student learning helps a team to collaboratively and effectively use their time focused on student learning. Answering the first question in DuFour et al.’s (2006) model provides teachers with a common language from which to discuss specific student learning in relation to the agreed upon expectations.

The data from this study would also suggest that when teams go beyond the establishment of common learning targets to actually planning instructional units together as a team, it helps to build an even deeper understanding of what the team wants the students to learn. Both teams spoke about the value they gain from working together to design instructional activities. In addition to strengthening their understanding of and commitment to common learning targets, collaborative instructional design also develops
a team sense of responsibility for student learning. Working together in this way promotes professional growth and also helps to strengthen collaboration.

Developing common formative assessments to answer the second question in DuFour et al.’s (2006) model (How will we know when students have learned the targeted outcome?), was not a professional activity seen as frequently as anticipated. The two PLC teams examined in this study did spend some time discussing or refining common assessments as part of their instructional planning, but spent more time discussing the results of student learning. This would suggest that common assessments are tools that PLCs use in their professional work to provide high quality instruction but are not the driving force of their work together. Examining and discussing student learning was the activity that these two teams engaged in most frequently and was the primary focus of their work together. Results from common assessments were discussed along with other anecdotal information gained from working with the students.

The two schools examined in this study are located in two different school districts. The schools were selected for inclusion in this study based on reported information that they both have established PLC teams and use common formative assessments. In working directly with the teachers and principals from the two schools, it became apparent that variances exist in how the two schools define common formative assessments. Analysis of the two school’s use of common assessments reveals that how a team defines common assessments can impact how and to what extent they are used to improve instruction. In School A, the term “common assessments” referred to assessments tied to Science and Social Studies units that were developed at the district
level. The fourth grade team also developed some of their own common assessments for use with particular units of study. In contrast, the first grade team from School B was involved in development of their common assessments. Some of these were tied to particular units and some were designed to measure learning progress against a continuum of skill development and progress. As discussed in the summary section, the PLC team from School B tended to use the results from their assessments in a more formative manner to drive changes in instruction. There are several reasons that could explain why School B used results from common assessments in a more formative manner than School A.

The first reason for the difference in how assessments results were used in the two schools may stem from who was involved in the development of the common assessment. More direct involvement in the development of common assessments may help teachers to value these assessments more highly and use the results to make instructional changes to improve learning.

Some of the difference between the two schools in how they used assessments may also be attributable to the different approach and emphasis placed on grading in the intermediate years vs. early years of elementary education. Greater emphasis on generating grades at some levels or in some schools may influence if assessment results are used more formatively to plan the next instructional step or summatively to measure learning at the end of instruction or at a given point in time and to assign a grade.

Another difference that might account for why School B appeared to use assessments more formatively is the dynamic and developmental nature of early reading
development. The time spent with School B’s PLC was during their Team Lit PLC time in which the group collaboratively focuses on the literacy development of every student. Team members discussed information gained from Individual Reading Inventories, daily observations of students’ progress and developmental spelling inventories and talked about how this information helps them to determine the next instructional step to take with each child or group of children. The nature of the learning task may therefore impact how assessments are used. More ongoing sequential learning progressions such as beginning reading skills may lend themselves to greater use of formative assessments than a specific unit of study in which learning specific content is the aim.

While there were differences in how the two PLC groups used assessment results to respond to student learning, the results of the study did indicate that using assessment results to identify what students need additional support is fundamental to the work of PLCs. This common step frequently addressed by PLCs is most likely influenced by the RTI mandate, which calls for schools to use assessments to identify student performance on key tasks against benchmark standards. Students who fail to reach these benchmark targets are identified to receive extra instruction in the form of specific interventions. Both schools in this study used assessments for this purpose.

The results of this study also indicate that responding to DuFour et al.’s (2006) third question (i.e., planning how to respond to students who fail or struggle to learn an intended learning target) is the activity that PLCs engage in most frequently. Again, this response is likely influenced by the RTI mandate. Both PLCs in this study worked as a grade level team alongside reading specialists and special education staff to
collaboratively plan the specific support their below benchmark students would receive. Developing a collective sense of responsibility for student learning and having a strong collaborative culture in which mutual respect and a willingness to share and work together enables PLCs to develop plans for how to respond to student needs and ultimately improve student learning. This third question drives a team’s improvement efforts.

While responding to students who struggle or fail to reach intended learning targets may be a central, common focus of PLC teams, this study would suggest that there may be more variance in how frequently PLCs focus on DuFour et al.’s (2006) fourth question of responding to the needs of high achieving students. Differences were seen between the two schools in this study in how intensely they differentiated to meet the learning levels of high achieving students. This difference may be related to whether the focus on learning is thought to apply to the learning of all students. If advancing the learning growth of all students is valued and incorporated into a team’s collaborative work as a PLC, this study would suggest that asking and answering DuFour et al.’s fourth question takes on more importance. Answering this question may influence how a team flexibly groups students for instruction or provides differentiated instruction that stretches students to learn more advanced skills or learn at a different rate.

Overall, the first grade Team Lit PLC from School B demonstrated a more focused response to both the third and fourth questions. As previously stated, this team tended to use assessment results in more formative ways to plan the next instructional step they would take to improve and advance students’ learning. Two factors may
account for the more pronounced response to meeting student needs that were witnessed in the observations of School B’s PLC meetings. First, the purpose of the weekly Team Lit meeting is clearly and solely focused on the students’ literacy development and how the team will work together to meet student needs. The first grade teachers in School B meet other times during the week to discuss math instruction and other general instructional topics. In contrast, PLC meetings in School A are intended to address four main areas: the School Improvement Plan, planning and implementing a common school wide thematic unit of study, meeting the needs of students through Response to Intervention (RTI) and planning and implementing instructional units of study and related assessments. The broader scope of their PLC meetings may contribute to less concentrated focus on using assessment results to improve student learning. The differences seen between these two schools in the scope of their PLC’s work may suggest that keeping the goals of the PLC narrowly focused on analyzing and responding to student learning might help the team to better accomplish its goal of ensuring high quality learning for all students.

The second reason School B may appear to use their PLC time to more explicitly focus on planning how to respond to students’ learning needs could lie in the amount of formal training each school received in the actual DuFour et al. model. Teachers in School B had more explicit training in this specific PLC model. As a result, the teachers in this school may be more familiar with the four guiding questions and incorporate them more frequently and explicitly into their PLC work together. Interview responses from both the principal and teachers in School B regarding their use of the four questions
would support this. While both said the questions are not explicitly addressed in the PLC’s agenda every time they meet, the questions have become an embedded part of School B’s Team Lit model. In contrast, the principal of School A admitted the teams in her school have tailored their PLCs more toward their school improvement plan and do not use the structure of the DuFour et al. (2006) model as much. The results of this study may indicate that formal training on PLCs and particularly the DuFour et al. model might help teachers to more effectively use their PLC time to develop ideas for improving student learning. More explicit training on the model may help teachers to incorporate the questions into their professional work and guide them in particular directions.

**Interpretation of the Relationship Between the Research Questions and Common Formative Assessments**

The theoretical proposition on which this dissertation study is based is whether there is a relationship between a school’s establishment of the characteristic tenets of a PLC, use of guiding structure for identifying essential student learning, measuring such learning and analyzing the results of such learning and then actually using the results to improve student learning. The results of this study would suggest that there is a relationship that helps to explain why PLCs can help a school or group of teachers to improve student learning. Together the PLC tenets and DuFour et al.’s (2006) model influence a group of teachers’ efforts to measure, analyze and use assessment results to improve student learning. The tenets form the foundation for this relationship and enable teachers to effectively engage in professional discourse around the four questions. The cornerstone of this foundation is a focus on high levels of learning for all students. This
becomes both the reason the school exists and the fundamental responsibility of all who work within the school (DuFour et al., 2006). The collaborative nature and shared vision that focuses on the successful learning of all students and the results orientation characteristic of well developed PLCs assists a team to determine clear, common expectations for student learning that all teachers value and teach to. A team’s focus on learning and results orientation also influences them to carefully spend time to make sure that assessments are valid and provide an accurate measure of student learning. Teams are thus drawn to identify or design common formative assessments that are collaboratively developed to match intended learning targets. Collective inquiry and a commitment to continuous improvement drive a team to frequently analyze the results of student learning and to search for ways to build on strengths and address weaknesses in learning.

The questions of DuFour et al.’s (2006) model form the essence of what a Focus on Learning, a Results Orientation, Collective Inquiry and Action and a Mind Set of Continuous Improvement are about. And without a Shared Vision that aims to ensure high quality learning for all students, the four questions have no significant relevance. Teams of teaching working together collaboratively share this common vision and assume collective responsibility for high levels of learning for all students. They use the four questions to guide their work knowing that collectively they can learn from each other, make better decisions regarding teaching and learning and be motivated to push each other towards continued improvement.

The characteristic tenets of a PLC and the structure of DuFour et al.’s (2006)
model work together to influence and support teachers in the critical work of using assessments and the data gathered from them to improve student learning. This study would suggest that trying to develop and use common formative assessments to drive improved learning without the benefits of a well-developed PLC would be difficult. As Ainsworth and Viegut (2006) posit, learning communities provide the foundational structure needed to fully implement common formative assessments.

**Discussion of Findings with Past Literature**

Numerous researchers believe PLCs offer promising implications for improving student learning through the improvement of teaching practices (DuFour et al., 2004, 2006; Hipp et al., 2008; Hord, 1997; Hord & Sommers, 2008; McLaughlin, 1993; McLaughlin & Talbert, 1993; Mizell, 2010; Vescio, Ross & Adams, 2008). Their claims are based on the contention that a collective and collaborative approach that focuses on improving the learning of both adults and students through an intense examination of learning goals, instructional practices and actual results can lead to real changes in teaching practices. While this dissertation study did not directly examine changes in student learning or teaching practices as a result of PLCs, it did explore the characteristic tenets known to be associated with effective PLCs and how they influence the team’s use of common assessments as part of their teaching practice. Results from this qualitative multi case study support several key findings from previous research focusing on the how the tenets influence professional work.

The philosophical tenet that is frequently associated with PLCs is a collaborative culture (DuFour & Eaker, 1998; Hord, 2004; Hord & Sommers, 2008). The data from
the two PLC teams examined in this dissertation study, most clearly indicates that a
collaborative culture exists in these teams and is thought to play a critical role in how the
teachers work together to improve student learning. The key importance of a
collaborative culture to the work of PLCs is based on DuFour’s (2004) belief that “people
who engage in collaborative team learning are able to learn from one another and thus
create momentum to fuel continued improvement” (p. 3). Two themes related to a
collaborative culture that emerged from the two schools in this dissertation study support
DuFour’s belief regarding momentum for improvement. Teachers in both schools
studied were willing to work together to share ideas and information and felt a strong
desire to support one another and push each member to their best performance level.
These themes match Parry’s (2007) and Bolman et al.’s (2005) research that found that
professional collaboration and the sense of support that is derived from it are often the
strongest themes evident in PLCs and that this sense of community support plays a
significant role in the level of teacher improvement documented. Professional support
and accountability to each other, as the teachers in the two schools examined in this
dissertation called it, help teachers to want to improve their own performance in order to
improve the performance of their students. The teachers in the PLCs studied in this
dissertation were willing to share ideas, discuss instructional decisions and support one
another to take risks which parallel the results found in Louis and Marks (1998) study.

The collaborative support teachers gain from working in a PLC leads to the
development of a mind set of continuous improvement. Strahan’s (2003) case study
found that as elementary teachers worked together and emerged as a PLC, teachers
became more willing to engage in data driven dialogue and change instructional practices. While the frequency of comments or actions associated with a mind set of continuous improvement only fell within the mid-range for the schools examined in this dissertation study, teachers did discuss a willingness to try new ideas, a motivation to continue to learn and grow professionally and engagement in continuous review of instruction.

As was evidenced in the teams examined in this dissertation, teachers working within a PLC do spend time agreeing upon the intended learning outcomes and discussing and developing effective instructional practices to achieve these aims. It is, however, the intense focus on what students actually learn, not just what they are taught, that is what DuFour (2005) labels a focus on learning and what he believes distinguishes a PLC from other collaborative groups of teachers working together. The frequency count of comments and actions associated with this focus on learning evidenced in the two schools examined in this study supports Bolman et al.’s (2005) findings that in effective PLCs pupil learning is the foremost concern. School B had a significantly higher frequency count for actions associated with a focus on learning and conversely was viewed by this researcher as the more effective PLC of the two teams studied.

In both schools examined, their focus on learning translated into a collective sense of responsibility for student learning. This finding aligns with Hord’s (1997) and Hord and Sommers’ (2008) research on PLCs and how they impact change in teachers’ practice and consequently student learning. These studies found that the collaborative nature of PLCs fosters the development of a collective responsibility for student success
and a willingness to adapt instruction to meet student needs. Dunne, Nave and Lewis (2000) and Maynor (2010) also found in their studies that when PLCs focus on student learning, they are more likely to adapt pacing and use more flexible arrangements to accommodate student needs. This matches with the results found for School B, which indicated a high level of adaptation of instruction in response to student needs and the results from common assessments.

Analyzing results of student learning and formatively responding to what this data indicates about student learning is a key component of how PLCs work to improve student learning. Berry et al.’s (2005) study found that when professional learning teams developed instructional strategies based on student data, improvements in student learning occurred. While this dissertation did not formally analyze any actual changes in student learning, the significance of incorporating a results orientation was evidenced in the two PLC’s teams studied and would support Berry et al.’s findings and Schmoker’s (2003) research regarding the importance of paying attention to and using results. Teachers from the two schools examined in this dissertation set high expectations for student learning, examined the results from a variety of assessments, frequently discussed the learning of both individual students and the learning of all students and made changes in instruction as a result. The results of this dissertation would support the theoretical assumption that it is this focus on learning and consequent use of results that drives changes in instructional practice and ultimately improves student learning.

When this type of professional work is frequently and commonly engaged in by teams throughout a school, the school develops a shared vision that is focused on
ensuring and improving the learning of all students. Strahan’s (2003) case study research found that as schools emerged as PLCs, they developed a shared vision and values. Hord’s (1997) study also found that organized PLCs realized increased commitment to strengthen the school’s vision and goals and development of a collective responsibility for student’s success. Hord’s (2004) synthesis of research literature on PLCs went further in claiming that the development of a shared vision, values and goals was a recurring component of PLCs in schools that realized improved student learning. The results from this dissertation study provide evidence to support these previous research findings relative to a shared vision that focuses on student learning. Both schools in this study have developed a shared vision that is clearly focused on having all students learn at high levels and that is the collective responsibility of the team to ensure that this happens. The vision of one of the schools described it quite clearly: “Learning for all, whatever it takes.”

Thus the results of this dissertation study help support previous research that a collaborative culture, a shared vision that incorporates a focus on learning, use of results and a mind set of continuous improvement are key components that teams must develop and utilize if they are to improve their instructional practice and make a difference in actual student learning. Teams that demonstrate these philosophical tenets have resulted in improved achievement (Bolman et al., 2005; Louis & Marks, 1998; Suppovitz, 2002; Suppovitz & Christman, 2003). While improvement in student achievement was not a factor examined in this study, anecdotal information shared by principals in both schools that participated in this study revealed that student achievement had improved since the
schools had started to function as professional learning communities.

In addition to examining the philosophical tenets of PLCs that help drive changes in instructional practice, this dissertation study also sought to examine the structure of how PLCs worked and used common assessments to improve student learning. The use of DuFour et al.’s (2006) four guiding questions as a frame for the two team’s professional PLC work was looked for and analyzed in this multi-case dissertation study. Results from the two teams examined in this dissertation support Fisher and Frey’s (2007) research that found that use of a collaborative protocol for designing and using common assessments helped teachers to more closely examine their instruction and develop a clearer and cohesive understanding of content standards, greater understanding of student thinking and better ability to intervene when students do not understand. The structure that the Fisher and Frey protocol provided is similar to DuFour et al.’s (2006) four guided questions in that it helps teachers to understand the intended learning outcomes, how these standards will be demonstrated and assessed, what instruction is effective in producing the desired learning and what to do when students don’t learn at the desired level.

In case study research, Fisher and Frey (2008) conducted in elementary and high schools in the San Diego area, they found that when teams incorporated common assessments as part of their ongoing instructional development process, they developed common curriculum and pacing guides similar to the work of DuFour et al.’s (2006) first question of “What do we want students to learn?” They also used commonly developed formative and summative assessments to engage in in-depth item analysis to determine
areas of strength and areas of misconception, similar to the professional inquiry DuFour et al.’s second question promotes. Fisher and Frey also found that teams of teachers attempted to address DuFour et al.’s third question and used the results of the assessments to discuss necessary steps to take to re-teach information and/or provide interventions. Similar types of professional activities were documented in the two schools examined in this dissertation study. In particular, the fourth grade team from School A’s professional discussions support Fisher, Frey, Grant and Johnson’s (2008) contention that “item analysis is key to instructional conversations and the interventions that flow from them because it enables teachers to look across the student body for trends – content or concepts they need to re-teach, assessment items they need to change, or pacing guides they need to revise” (p. 65). While these researchers believe that talking with teachers who teach the same content helps teachers to determine which instructional strategies are working and most effective and which students still need help to master the standards, the teams examined in my dissertation study tended to focus more on identification of students who needed intervention and specific items or topics that were difficult but did not explicitly discuss and identify which instructional strategies yielded the best results. None the less, the results stemming from the examination of the two PLC teams studied in this dissertation do support the four benefits Fisher and Frey (2009) believe stem from the use of teacher created, standards aligned common formative assessments: (1) Development of teachers’ knowledge of grade/course content; (2) Better understanding of how to assess and check for understanding; (3) Practice and application of how to link assessment with instruction; and (4) Ability to identify students in need of
intervention.

The two research questions examined in this dissertation study involve a particular aspect of the relationship between professional learning communities and use of common formative assessment. In the first research question, the philosophical tenets that characterize PLCs was studied in relation to how these tenets help teams develop and use common assessments. In the second research question, the underlying structure or framework that a PLC uses to guide their work was looked at in relation to how this helps them to develop and use common formative assessments. Both questions are fundamentally grounded in the theoretical proposition that teams who have internalized and apply the tenets and utilize the four guiding questions, more frequently and effectively develop, analyze and use common formative assessments to improve student learning. This proposition was also examined by Birenbaum et al. (2010). They examined the qualitative level of a PLC team with how the group perceived and engaged in formative assessment practices and found that more advanced professional learning communities engaged in better quality formative assessment practices. In high PLC schools, formative assessment was valued and correctly perceived as a tool to improve teaching and student learning. In the Birenbaum et al. study, teachers used data from formative assessments to provide feedback to students and to adapt their teaching to meet the individual needs of the student. Schools with less developed PLCS did not use data to inform instruction or with students to provide feedback and in general thought of assessment in more a summative manner. The results of this dissertation mirror Birenbaum et al.’s findings. In general, School B was seen as the school with the more
highly developed PLC and was also the school thought to demonstrate better quality formative assessment practices. With the exception of using data with students to provide feedback, School B effectively used data to adapt instruction to meet the needs of individual students as well as groups of students. The fourth grade teachers from School A tended to use data in a more summative manner and engaged in less real time adjustment of instruction based on results from common assessments. The results of this dissertation do add support to the theoretical proposition that teams who have internalized and effectively apply the tenets of a PLC and utilize a structure similar to DuFour et al.’s (2006) four guiding questions to frame their professional work, will more frequently and effectively develop, analyze and use common formative assessments to improve student learning.

If the limited research (Birenbaum et al., 2010; Fisher & Frey, 2007 & 2008; Fisher et al., 2008) that has been conducted analyzing the power of common formative assessments to improve student learning is valid, the results of this dissertation study would indicate that use of well developed PLCs that utilize a structure similar to DuFour et al.’s (2006) model to focus their professional discourse and analysis will assist teachers to effectively incorporate the use of common formative assessments into their practice and ultimately improve student learning. This would have large-scale implications for schools that are attempting to improve student achievement in general and through the use of Response to Intervention (RTI) in particular.
Implications of Findings

Theoretical Implications

The results of this study are consistent with the constructivist theoretical framework on which the study was based. The teachers working within the two PLC teams examined in this study demonstrated many examples of a constructivist form of professional learning. Most notably, working within an authentic context, they collaboratively engaged in critical analysis of their students’ learning and focused on learning as inquiry, learning as a process of continuous improvement and learning as a dynamic social process. They perceived their professional time together as an opportunity to learn from one another and continue to grow in their ability to address students’ learning needs. Using the results of assessments formatively, the teachers particularly in School B perceived learning to be a dynamic process which could be altered by use of feedback. Teachers constructively used assessment results as feedback to guide their instructional improvement efforts.

Practical Implications

The results of this study support the potential power a well developed PLC can play in helping teachers to use common formative assessments as a means for improving instruction and ultimately student learning. Unlike formative assessment practices that can be created and used by individual teachers, common formative assessments require the collaboration and agreement of a group of teachers to clearly articulate the intended learning goals, agree upon how learning will be assessed and discuss results of such assessments. The common collaborative nature of this type of professional work has the
potential to create increased instructional coherence within a team and/or school. When you add in the formative response that the group of teachers can discuss and develop, you increase the potential for changes and improvements in instruction that can lead to improved learning outcomes. This is not easy work for teachers to take on without developing the philosophical tenets of a PLC. The focus on student learning and the collective sense of responsibility for student learning that is seen in a well developed PLC, enable this work to occur. Thus the development of PLCs may need to precede the development and use of common formative assessments.

Schools that are attempting to use data from assessments to analyze and improve student learning may do well to focus first on developing a PLC and firmly embedding the philosophical tenets into the manner in which teachers work together. Professional development regarding the purpose of a PLC, the foundational tenets as well as the structure of how the team will work together needs to be provided. The differences seen between the two schools examined in this study suggests that the amount of focused training on PLCs may influence the extent to which the team is able to incorporate the tenets into how they function as a PLC.

The results of this study support that the development of a strong focus on student learning and a culture of shared responsibility for student learning within the school and each team is critical to the team’s work. The results of this study also suggest that the vision and focus of the PLC should be kept on the improvement of student learning as the one and only goal. School A in this study may have been asking their PLC group to focus on too many related but separate priorities and thereby diluting the ability of the
team to focus on improvement of learning.

The results of this study also suggest that creating or utilizing a structure/framework that helps a team of teachers to stay focused on student learning can be beneficial to the team’s work. DuFour et al.’s (2006) four guiding questions work well because they simply and clearly lay out the tasks that teachers must focus on: what do we want students to learn, how will we know it when they have learned the objectives, and how will we respond. An additional fifth question that might also help teachers working in a PLC to improve student learning is to ask, what instructional practices deliver the best results. Analyzing results in relation to the instructional methodology or practice used, could help teachers to determine the best instructional response to take.

The results of this study have significant implications in the current era of school accountability and data based decision-making. As schools are being pushed to analyze and use data as well as a mandated Response to Intervention model for responding to the data, the philosophical tenets and structure of a PLC can be used to guide the school’s efforts. In particular, the tenets of a shared vision, a focus on learning, a results orientation and a mind set of continuous improvement, if properly cultivated, can help a school to critically examine how well their students are learning and how they can make improvements to have more students learn at higher levels. While use of DuFour et al.’s (2006) third question can help schools to effectively address the RTI initiative, use of the fourth question can enable a school to pay attention to the learning growth of all students and not just focus on the students who fail to reach expected benchmarks.
It is important to note that developing and using common formative assessments provides a tool for improving student learning that should be used along with other assessments such as classroom formative assessment practices, benchmark and other summative assessments. No one type of assessment alone can adequately measure student learning or help teachers to adjust their instruction to meet students’ needs. The results of this study help to support that a balance and variety of assessments are typically used. The study suggests that well developed PLCs might help teams of teachers to use all of these assessments to improve learning. Even if teachers are discussing results of more summative assessments, the collaborative nature of a PLC focused on student learning can lead to rich dialogues regarding instruction and learning and what might account for the results that are seen. It is far easier to analyze and use results in today’s “data driven decision making” culture when it is done collaboratively than if teachers are left on their own to do this type of deep analytical work. Having a structure to follow and guide the discourse is also beneficial.

**Research Implications**

As previously stated, the results of this study suggest that establishing the fundamental elements of a PLC is critical to helping teachers develop and use assessments. This assumes that the existence of a PLC is the critical variable in this endeavor. Can research determine if this assumption is true? Testing this assumption presents multiple implications for future research. Research could be conducted studying a number of schools that have developed and/or use common assessments and analyzing
whether the organization has incorporated PLCs as part of the process. Research methodologies other than qualitative case studies could be used to examine this. Determining if effective use of assessment data is dependent on the development of PLCs has serious implications for schools today and would help guide improvement efforts.

**Limitations**

This dissertation study was purposefully designed as a qualitative case study that was intended to closely examine and describe how two separate teams from two different school districts displayed and utilized the characteristic tenets of a PLC and the structure of DuFour et al.’s (2006) guiding questions to develop and use common formative assessments. The small-scale design of the study was not intended to generate results that could be generalized broadly to other schools. The limited number of cases examined as well as the limited number of teams examined in each case is a very real limitation of this type of study and therefore the results presented in this paper may only be representative of these individual school’s grade level teams.

Both teams examined in this study were part of elementary schools in relatively high achieving, middle to high income suburban communities. Because the size and scope of this study was limited to one PLC team from only two schools that are somewhat similar in nature, the results cannot be generalized to all schools. The fact that this study only investigated PLC teams at the elementary level is another limitation of this study. Examination of PLC teams at the middle and high school level and their use of common assessments might reveal drastically different results. Schools in more urban or rural communities or in less wealthy areas might also have an impact on how PLCs
function or how they use common formative assessments to improve student learning.

The selection criteria used to identify and choose schools for this study is another limitation that needs to be considered when interpreting the results. Schools selected for this study were known to be committed to the PLC concept and use of common formative assessments. This distinctive feature could potentially have a significant impact on the results and therefore the implications of this study may not be able to be generalized to other schools that have not already made the commitment to use PLCs and common formative assessments.

It is also important to note that the teams selected for this study were purposefully selected by the school principal as being more developed, exemplary examples of PLCs within their building. The fact that these teams were further along in their PLC journey and use of assessments could have positively impacted results. One cannot predict that the same results would have been found in other grade level teams within the same school much less the same results would be found in grade level teams in general.

Another similar limitation may be the voluntary nature of participants in this study. Teachers who willingly volunteer to be interviewed and have a researcher observe their PLC meetings may be more confident of their work as a PLC and the positive findings that would be discovered. Similar results may not be found in teams that were randomly chosen and/or forced to participate in a similar study.

**Future Directions**

As noted in Chapter II, empirical research examining common formative assessments and how they can be used to improve student learning is limited. Even more
scarce is research examining the relationship between PLCs and common formative assessments. Additional research is needed to determine the prevalence of schools developing and using common formative assessments and then more specifically, which of these schools operate as PLCs. As previously noted in this chapter, designing and conducting research to determine if PLCs are a critical dependent variable for schools to effectively develop and use common formative assessments would be very useful information for schools who are seeking to use assessment to drive improvement efforts.

Conducting additional qualitative as well as quantitative studies to more closely study schools that are using the PLC concept along with use of common formative assessments could reveal valuable information. Areas to focus on in particular are examination of actual changes in teaching practice and actual changes in student learning. In addition, research that focuses on what particular aspects of how a PLC is supported and functions that produce the greatest increase in student learning should be considered.

While this study was designed to analyze how PLCs help teachers to develop and use common formative assessments, it was apparent when observing the two PLC teams that teachers use and discuss a variety of means for measuring and analyzing student learning; they did not confine themselves to only discussing common formative assessments. Future research could study how the philosophical tenets and structure of DuFour et al.’s (2006) model help PLC teams to critically examine and use summative assessment data. In a similar manner, research could also look at whether use of a PLC helps teachers to incorporate use of classroom formative assessment practices. Research could examine if the existence of well developed PLCs have similar benefits with these
types of assessments and whether the tenets and structure of DuFour et al.’s model work in the same way to focus teachers’ improvement efforts.

Another research question that would be worth studying is whether other protocols for examining student learning, different than DuFour et al.’s (2006) model, are as useful in helping teachers to analyze student learning and determine next steps for improvement. In particular, protocols that incorporate some analysis of the instructional methods that produce the best results should be studied. In this era of Response to Intervention and data based decision-making, identifying protocols that serve as a beneficial guide to teachers’ professional work to improve teaching and ultimately student learning is extremely important.

Finding the most effective means for teachers to work together collaboratively to identify and deliver high quality instruction and ensure the learning growth of all students is critical if our schools are going to successfully educate students. The development and use of PLCs as a constructivist and collaborative approach to improving teaching and the development and use of formative assessment as a means for improving student learning both have great potential to help us reach our ultimate aim.
APPENDIX A

TEACHER SURVEY
Teacher Survey

Date ____________________________

Name _______________________________           School _______________________

Grade/Subject ________________________

How long have you been teaching?       ______________________

How long have you taught at this school? ______________________

How long have you been a member of this grade level team? ______________________

Grade Level Team Meetings

The following questions ask about your grade level team meetings. Select the answer that you believe most closely reflects what happens in your team meetings.

How often does this grade level team meet?

Monthly  2x a Month  Weekly  2x a Week  Daily

How often do you engage in the following professional activities when you meet?

Plan upcoming instructional units
Never  Infrequently  Frequently  Almost every time we meet

Develop and/or share specific instructional lessons or activities
Never  Infrequently  Frequently  Almost every time we meet

Develop common assessments
Never  Infrequently  Frequently  Almost every time we meet

Discuss results from common assessments
Never  Infrequently  Frequently  Almost every time we meet

Discuss results from other assessments
Never  Infrequently  Frequently  Almost every time we meet

Review examples of student work
Never  Infrequently  Frequently  Almost every time we meet
Determine which students need additional support or enrichment based on results
Never Infrequently Frequently Almost every time we meet

Plan for interventions/differentiation based on results of assessments
Never Infrequently Frequently Almost every time we meet

Review student learning results after intervention/differentiation has been provided
Never Infrequently Frequently Almost every time we meet

Identify effective instructional approaches based on results of assessments
Never Infrequently Frequently Almost every time we meet

Do you function as a professional learning community whenever you meet?
Never Infrequently Frequently Almost every time we meet

What other professional activities do you engage in during grade level team meetings?

The following questions ask about practices related to professional learning communities that may or may not occur in your school. Read each statement and use the scale below to select the scale point that best reflects your personal degree of agreement with the statement. There are no right or wrong answers.

<table>
<thead>
<tr>
<th>A culture of trust and respect exists to support risk taking.</th>
<th>Strongly Agree</th>
<th>Agree</th>
<th>Disagree</th>
<th>Strongly Disagree</th>
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<tbody>
<tr>
<td>Collegial relationships among the staff reflect a shared commitment to school improvement.</td>
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<td>School staff learn together and apply new knowledge to solve problems.</td>
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<tr>
<td>Staff plan and work together to search for solutions to address diverse student needs.</td>
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<td>The school schedule promotes collective learning and shared practice.</td>
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<td>Statement</td>
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<td>Time is provided to facilitate collaborative work.</td>
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<td>A collaborative process exists for developing a shared vision among staff.</td>
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<tr>
<td>School goals focus on student learning beyond test scores and grades?</td>
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<td>Decisions are made in alignment with the school’s values and vision.</td>
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<td>The staff shares visions for school improvement that have an undeviating focus on student learning.</td>
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<td>School staff are committed to programs that enhance learning.</td>
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<td>Professional development focuses on teaching and learning.</td>
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<td>Staff informally share ideas and suggestions for improving student learning.</td>
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<tr>
<td>Staff are actively involved in creating high expectations that serve to increase the achievement of all students.</td>
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<tr>
<td>Staff assume shared responsibility and accountability for student learning without evidence of imposed power and authority.</td>
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<tr>
<td>Staff exhibit a sustained and unified effort to embed change into the culture of the school.</td>
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<tr>
<td>Working together, the staff seeks new information, acquires new skills, and applies new strategies to meet</td>
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</table>
Individuals and teams regularly apply new knowledge and share the results of their practices.

Staff members provide feedback to peers related to instructional practices.

The staff collaboratively reviews student work to share and improve instructional practices.
APPENDIX B

FOCUS GROUP INTERVIEW QUESTIONS
Focus Group Interview Questions

Vision and Goals
1. How would you describe the common vision of this school?
2. What, if any, values are commonly shared by this school?
3. How does the vision and values influence the work of your grade level team?

Training
4. Describe the training and support you have received relative to PLCs.
5. Describe the training and support you have received relative to formative assessments and data analysis.

Structure of PLCs
6. How and by whom is the agenda set for grade level meetings?
7. Are there any required agenda items?
8. Describe a typical grade level meeting
9. Elaborate on how teachers routinely work together in planning, assessing, and analyzing student learning.

Collective Inquiry and Action Orientation
10. When you meet as a grade level group, what type of questions do you ask and try to answer as a group?
11. Describe how teachers on this team share their professional expertise with other team members?

Collaborative Culture
12. Describe some examples of how your team collaborates during grade level team meetings.
13. What barriers, if any, hinder collaboration among the team members?

Results Oriented
14. How does your grade level team define success?

Use of Assessment
15. How does your grade level team assess and address the instructional needs of students?
16. What supports the development and use of assessment data as a means to improve student learning in your school? Grade Level team?
17. What hinders the development and use of assessment data as a means to improve student learning in your school? Grade Level team?

Impact of PLC
18. In your opinion and based on your experience, what, if any, relationship exists between how your group operates as a professional learning community and improved instruction and student learning?
19. How have your teaching practices changed?
20. Has this had an effect on student learning?
APPENDIX C

PRINCIPAL INTERVIEW QUESTIONS
Principal Interview Questions

Vision and Goals
1. How would you describe the common vision of this school?
2. What, if any, values are commonly shared by the school?
3. How does this vision and values influence the work of grade level teams?

Development and Support for PLCs
4. How long have grade level teams worked as PLCs?
5. What sort of training did the teachers have regarding PLCs?
6. What sort of changes did you implement in order to create and sustain a PLC?
7. How would you define a successful grade level team?

Structure of PLCs
8. How and by whom is the agenda set for grade level meetings?
9. Are there any required agenda items?
10. How do teachers routinely work together to plan, assess, and analyze student learning?

Collaborative Culture
11. Describe some examples of how teams collaborate during grade level team meetings.
12. Describe how teachers share their professional expertise with their team members or other teachers in this school?

Use of Assessment
13. Describe the training and support teachers received relative to formative assessments and data analysis.
14. How do grade level teams assess and address the instructional needs of students?
15. What expectations, if any, do teams have for developing and using common formative assessments?

Impact of PLC
16. In your opinion and based on your experience, what, if any, relationship exists between how the teams operate as a professional learning community and improved instruction and student learning?
17. How have teaching practices changed?
18. Has this had an effect on student learning?
APPENDIX D

OBSERVATION PROTOCOL FORM
### Observation Protocol Form

School: _________________________  Date: _______________________
Focus of Meeting: __________________________________________________

Evidence of Key Tenets:
- CC = Collaborative Culture
- RO = Results oriented
- SV = Shared vision and goals
- FOL = Focus on learning
- CI = Mind set of continuous improvement
- IA = Inquiry and action oriented

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<thead>
<tr>
<th>Agenda Item</th>
<th>Observed Behavior</th>
<th>Tenet</th>
<th>Guiding ?</th>
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REFERENCES


VITA

Diane Gmitro Betts was born in Chicago, Illinois. She graduated from University of Illinois-Champaign/Urbana in 1977 with a Bachelors of Science in Elementary Education. In 1985, she earned a Masters of Science in Educational Administration from National Louis University.

Ms. Betts began her teaching career in Hawthorn District 73 in Vernon Hills, Illinois where she taught first and second grade for nine years before moving into administrative roles as an Assistant Principal and then Principal of the Primary Building. She served as the principal of Lincoln Elementary School in Highland Park, Illinois for eight years. From 2003-2012, Ms. Betts worked as the Assistant Superintendent for Student Learning in District 64 in Park Ridge, Illinois.

Ms. Betts is a member of ASCD and Learning Forward. She has presented at the ASCD Conference on Assessing the Whole Child Using Formative Assessments and has worked with educators in District 64 to design and utilize a variety of assessments to measure and improve student learning.
DISSERTATION COMMITTEE

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