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THE PROFESSIONAL LEARNING COMMUNITY MODEL OF CONTINUOUS SCHOOL IMPROVEMENT AND THE EFFECT ON JOB SATISFACTION, PROFESSIONAL COLLABORATION, AND IMPLEMENTATION OF BEST PRACTICES

by

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DISSERTATION

Submitted in partial fulfillment of the requirements
For the degree of Doctor of Education in Educational Leadership and Policy Analysis
In the Graduate School of the
University of Missouri – St. Louis

March 19, 2009

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Abstract

The purpose of this study was to determine whether a greater number of years of participation in the Professional Learning Communities Project positively impacts professional staff perceptions of job satisfaction, professional collaboration, and implementation of best practices as defined by the "Critical Issues for Team Consideration" (DuFour et al., 2006, pp. 100-101). A total of 223 participants completed the self-reporting survey out of a total 481 eligible teachers, school administrators and other staff members. Participants were divided into groups based on the number of years their respective schools had been involved in the PLC Project for a between-groups approach to the design. An analysis of variance (ANOVA) was conducted to determine any significant differences between groups with varying years of participation in the PLC Project for survey questions in each of the following areas: job satisfaction, professional collaboration, and implementation of best practices. Additionally, multivariate analysis (MANOVA) was conducted to analyze the questions as categories. After conducting the MANOVA, univariate analyses were conducted for each question in the clusters that were noted as significant ($p<.05$) on the MANOVA to identify the distinguishing variables that were individually affected by the years of experience in Professional Learning Communities. Finally, post hoc testing was conducted on the distinguishing variables that were deemed significant ($p<.05$) to identify the specific areas of significance between the different groups.

While there were significant findings in this study, the findings for this study did not consistently support the hypotheses that schools with a greater number of years of participation in the project would report higher levels of job satisfaction, professional collaboration, and implementation of best practices than schools with fewer years of experience in the PLC Project.

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Dedication

"I know the price of success: dedication, hard work, and an unremitting devotion to the things you want to see happen."

- Frank Lloyd Wright

Before starting this dissertation I was told that it should become my life's work. I was also told that pure endurance is the only way dissertations are ever completed. I am very lucky to be able to say that I completely believe in my work and research. I can see that it easily will become my life's work. I have several people that I must thank for their prodding, pushing, and tremendous support that helped me achieve this great task.

First, I must thank my mom and dad for their undying support and belief in me. Through their sacrifice and faith, I became the first person in my family to graduate from college. Through the opportunity of higher education, I have had many doors opened for me, and I am enjoying a life of success because of my parents' support, encouragement, and love. I am extremely proud of them and will be eternally thankful for the opportunities, support, and guidance that they have provided me.

My husband, Nathan, is my largest supporter. He has endured many lonely evenings and weekends while I have been finishing my education and completing this project. His support and love mean more to me than he will ever know.

I must also thank my mentor and friend Cathy Bear for giving me my first job in educational administration and for teaching me everything I know about leadership. She is a fantastic supporter, encourager, and friend. I am forever grateful for her guidance and friendship.

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CHAPTER 1

INTRODUCTION

The Professional Learning Community (PLC) initiative for comprehensive school reform has become more and more popular in school districts throughout the United States and Canada. The foundation of PLCs is grounded in breaking down teacher isolation and building teacher collaboration for increased professional capacity and student achievement. Schools that subscribe to the PLC philosophy have teachers collaboratively working in teams to answer three critical questions: What is it that we want our students to know? How will we know when they have learned it? What will we do when the do not learn it? In a nutshell, the teachers in PLCs work together to identify best teaching strategies, analyze student work, and find ways to support the individual learning for each child.

The PLC process for improving schools has evolved over several years. Many educators have attended conferences and summits on the topic, and school districts throughout the country have formally adopted the PLC initiative as a vehicle for improving schools. A major challenge facing school leaders in implementing this process on a school-wide or district-wide basis is that of providing high quality, long-term, job-embedded professional development and support for teachers as they work to adopt new paradigms and standards of practice.

This introductory chapter provides a background for the study, the purpose of the study, the need for the study and a statement of hypothesis, a description of the training protocol used in the study, the research questions, the scope of the study, a definition of terms and the significance of the study. The second chapter offers a review of related literature. This review will outline the history of research on effective schools and school improvement initiatives as well as a focus on research related to teacher collaboration in general and the DuFour & Eaker

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Model of Professional Learning Communities, in particular. Additionally, research into effective curriculum development and assessment practices will be explored. Chapter Three will discuss the research procedures and methodology with a description of the population and tests administered. Chapter Four will provide an analysis of the data. Chapter Five will summarize the findings and offer conclusions and recommendations for further research.

Background of the Study

The district in which this study will be carried out serves a suburban, middle class community located adjacent to a major metropolitan area in the Midwestern United States. The district is comprised of five elementary schools (grades K-4), one middle school (grades 5-6), one middle school (grades 7-8), two comprehensive high schools (grades 9-12), one alternative school (grades 5-12) for credit recovery and students serving long term suspensions, and one career technical school. Total student enrollment within the district is approximately 5,400.

One elementary school within the district began to explore the DuFour & Eaker Professional Learning Communities Model of school improvement during the 2002-2003 school year. During the following year that school was formally accepted into the inaugural cohort of state Professional Learning Communities Project (PLC Project). Two years later, three additional district schools, (one elementary, one middle and one high school), joined this state level professional development initiative. As of the 2008-2009 school year, both high schools, both middle schools and all five remaining elementary schools have joined the PLC Project. Two of the elementary schools initially involved with the project have since closed and teachers within those buildings have been reassigned to other district schools.

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Purpose of the Study

In the 2003-2004 school year, the Department of Elementary and Secondary Education launched a long-term training protocol to assist schools with the process of implementing the PLC process, based heavily upon the DuFour & Eaker Professional Learning Communities Model of School Improvement. This training protocol requires a three-year commitment in which building administrators and lead teachers are trained as a building leadership team to enable them to spearhead the implementation of the PLC process in their schools. Building leadership teams meet regularly with leadership teams from schools throughout the state and/or region to study various aspects of the PLC process, develop action plans for next steps in implementation and to support one another along the professional development journey.

In order for PLCs to be implemented and effective, it is necessary to provide teachers and administrators with long-term training. The nature of this training is designed to build a sufficient level of leadership capacity within the teaching and administrative staff to support and sustain high levels of professional collaboration and engagement as well as implementation of specified professional practices outlined in the training protocol. This study will investigate the effectiveness of this training protocol by measuring the impact of participation in the Professional Learning Communities Project on perceptions regarding job satisfaction, professional engagement and impact on professional practice.

Need for the Study and Hypothesis

The subject school district has encouraged the adoption of the PLC process for all district schools and has supported this effort both in terms of financial support and release time for professional development. As the district and its individual schools consider ways to optimize

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professional development resources, the need to evaluate the effectiveness of participation in the Professional Learning Communities Project becomes apparent.

For purposes of this study, the following hypotheses were developed:

1. Professional staff working in schools that have three to four years of participation in the Professional Learning Communities (PLC) Project, will report higher levels of job satisfaction than professional staff working in school communities that have less than one year of involvement with the PLC Project.
2. Professional staff working in schools that have three to four years of participation in the Professional Learning Communities (PLC) Project, will report higher levels of professional collaboration than professional staff working in school communities that have less than one year of involvement with the PLC Project.
3. Professional staff working in schools that have three to four years of participation in the Professional Learning Communities (PLC) Project, will report higher levels of implementation of best practices than professional staff working in school communities that have less than one year of involvement with the PLC Project.

Description of the Professional Learning Communities Project

The Department of Elementary and Secondary Education (DESE), in its efforts to support the work of public schools throughout the state in their mission to improve academic achievement for students, undertook an exploration of school improvement initiatives focusing on secondary schools. This exploration led the Department to critically examine the PLC process as more and more schools nationwide began to adopt this school improvement model as the vehicle to enhance student achievement. (Missouri Department of Elementary and Secondary Education, 2007)

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The Department of Elementary and Secondary Education provides the following description of the PLC Project on its website:

> The goal of the Missouri Professional Learning Communities (PLC) Project is to help schools in Missouri engage in sustained, substantive school improvement that will result in better outcomes for all of their students, especially in the area of student performance on the Show-Me Standards. The project is based on the work of Dr. Rick DuFour, formerly superintendent of Adlai E. Stevenson School District in Illinois. Professional Learning Communities (PLCs) have six characteristics: 1) Shared mission, vision, values and goals; 2) Collective inquiry; 3) Collaborative teams; 4) Action orientation; 5) Continuous improvement; 6) Results orientation.
>
> The Missouri Professional Learning Communities Project is a comprehensive school improvement program that offers guidance to Missouri schools in their efforts to focus on the fundamental purpose of schooling (learning), develop a vision of their ideal school where all students learn, commit to behaviors that will help reach the vision, and set goals that are SMART (specific and strategic, measurable, achievable, results-oriented, and time-bound). In a PLC, school efforts focus on improving student achievement. School faculties work in collaborative teams to continually ask and seek answers to the following three questions:
>
> 1) What should students know and be able to do?
> 2) How will we know if students have learned?
> 3) What will we do if they have not learned?
>
> Working together, teachers respond to the first question by identifying and agreeing to teach a core curriculum aligned to state standards with valid measures, such as local, state and national assessments. The collaborative teams of teachers focus on setting specific goals for student achievement and are provided useful information that helps them identify students who are not making progress. PLCs monitor student learning and continually respond to students who are not learning by providing them with additional time and more support during the school day. In a PLC, the school does not allow the students to fail (Missouri Department of Elementary and Secondary Education, http://dese.mo.gov/divteachqual/prolearning/description.htm, retrieved March 1, 2008).

The training involves a summer academy for teams from new schools and then monthly meetings throughout the school year. Team members are expected to serve as leaders in their own schools. Teams from schools continuing in the PLC Project meet three or four times per year during years two and three of the Project, and on-site assistance and mentor visits are

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provided to each participating school. During each of the three years of participation in the Project, a two-day *Powerful Learning Conference* offers participants the opportunity to network with and learn from other schools throughout the state that are in the process of developing their own professional learning communities. At the end of the second year of participation or at the beginning of the third year, the on-site mentor and his/her colleagues from the training site visit the school to conduct a review of the progress of implementation throughout the school. Feedback is provided regarding the systems and structures that have been established to support the PLC process, as well as feedback regarding cultural indicators of progress, such as teacher attitudes and practices. Ideas for moving forward and sustaining the effort are also discussed.

Research Questions

The basic premise of this study is that when a school makes a long term commitment to functioning as a professional learning community and formalizes this commitment with participation in a comprehensive training protocol designed to build leadership capacity for sustaining the effort, there will be a positive impact on teacher perception of job satisfaction, professional engagement and use of best practices as specified in the training protocol. In order to test this premise, the following research questions were formulated:

1. Do teachers in school communities that have had at least three years of direct involvement in the Professional Learning Communities Project report greater levels of job satisfaction than those in school communities that have less than one year of involvement in the project?
2. Do teachers in school communities that have had at least three years of direct involvement in the Professional Learning Communities Project report greater levels of

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professional collaboration than those in school communities that have less than one year of involvement in the project?

3. Do teachers in school communities that have had at least three years of direct involvement in the Professional Learning Communities Project report using specified practices, based on the "Critical Issues for Team Consideration," (DuFour et al., 2006, pp. 100-101) to greater degrees than do those in school communities that have less than one year of involvement in the project?

Scope of the Study and Limitations

This study will be conducted in a single school district with five elementary schools, two middle schools, two comprehensive high schools, one school for credit recovery and long term suspensions, and one career technical school. Of these schools, two buildings have had four years of involvement in the Professional Learning Communities Project, three have had three years of involvement, four are in their first year of formal training and the remaining schools have not had formal training through this Project.

All teachers, certified staff members, and school administrators in the subject school district were administered surveys to measure teacher engagement, teacher perceptions regarding job satisfaction, and use of specified practices. Results from the survey instrument were analyzed and the results from those school communities with three or more years of involvement with the Professional Learning Communities Project will be compared to results from schools that have less than one year of formal training. The data collected from all schools will help to determine if the focused training through the Professional Learning Communities Project and the length of time involved in developing a PLC has any significant impact on the teacher perceptions

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regarding job satisfaction, professional engagement and use of specified practices when compared with schools that have not had lengthy training in Professional Learning Communities.

This study is limited to investigating teachers and building level administrators self-reporting their perceptions regarding job satisfaction, professional engagement and use of specified best practices. Teacher reports on job satisfaction, in particular, may be impacted by significant circumstances other than participation in the PLC Project.

The scope of the study is limited to examining the impact of participation in the Professional Learning Communities Project among schools within the subject school district only. Results from schools within the district that have been formal participants in the Project for three or more years will be compared to results from schools within the district that have just begun participating or have not yet participated in the Professional Learning Communities Project. The study is further limited to those teachers, certified staff members, and school administrators within the subject school district who voluntarily complete the survey instruments.

Definition of Terms

1. Capacity Building: Developing the collective ability-the dispositions, knowledge, skills, motivation, and resources-to act together to bring about positive change (Fullan, 2005a, p. 4).
2. Collaboration: A *systematic* process in which people work together, *interdependently,* to analyze and *impact* professional practice in order to improve individual and collective results (DuFour, et al., 2006, p. 214).
3. Collective Inquiry: The process *of* building shared knowledge by clarifying the questions that a group will explore together. In PLCs, collaborative teams engage in collective

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inquiry into both best practices regarding teaching and learning as well as the reality *of* the current practices and conditions in their schools or districts (DuFour, et al., 2006, p. 214).

4. Common Formative Assessment: An assessment typically created collaboratively by a team *of* teachers responsible *for* the same grade level or course. *Common* formative assessments 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) program concerns-areas in which students generally are having difficulty achieving the intended standard-and (4) improvement goals *for* individual teachers and the team (DuFour, et al., 2006, p. 214).
5. Community: A group linked by *common* interests. Whereas the term "organization" tends to emphasize structure and efficiency, "community" suggests shared purpose, mutual cooperation, and supportive relationships (DuFour, et al., 2006, p. 214).
6. Continuous Improvement Process: The ongoing cycle *of* planning, doing, checking, and acting designed to improve results-constantly. In a PLC, this ongoing cycle includes gathering evidence *of* current levels *of* student learning, developing strategies and ideas to build on strengths and address weaknesses in that learning, implementing those strategies and ideas, analyzing the impact *of* the changes to discover what was effective and what was not, and applying the new knowledge in the next cycle *of* continuous improvement (DuFour, et al., 2006, p. 214).
7. Job Satisfaction: Perception of one's level of personal fulfillment and contentment with one's current teaching situation.

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8. Professional Learning Communities Project: Three-year professional development initiative targeting building level leadership teams. Membership on leadership teams ideally includes the building principal, three or more teacher leaders representing various grade levels and/or departments, and a district level liaison.
9. Professional Engagement: Perception of one's level of active participation and commitment to one's work.
10. Professional Learning Community: A K-12 school improvement model that increases student achievement by building the capacity of school personnel to create and sustain the conditions that promote high levels of student learning. (Missouri Department of Elementary and Secondary Education, http://dese.mo.gov/divteachqual/siiMPLC_FactSheet 2007.pdf, retrieved March 1, 2008). Educators in a PLC are committed to working collaboratively in ongoing processes of collective inquiry and action research to achieve better results for the students they serve. Professional learning communities operate under the assumption that the key to improved learning for students is continuous job-embedded learning for educators
11. Specified Best Practices: Specific practices regarding collaboration, planning, decisions regarding curricular priorities, development and use of assessment, instructional strategies and interventions. These practices are based on the *Critical Issues for Team Consideration* (DuFour, et al., 2006, pp. 100-101).
12. Team: A group of people working *interdependently* to achieve a *common goal* for which members are held *mutually accountable.* Collaborative teams are the fundamental building blocks of PLCs (DuFour, et al., 2006, p. 219).

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Significance of the Study

The Professional Learning Communities model of continuous school improvement has grown in popularity among schools throughout the United States and North America over the last several years. This school improvement model promises to help schools transform their cultures and enhance student achievement through the development of broad-based teacher leadership. This study focuses on the training protocol used for the Professional Learning Communities Project which focuses on helping teachers lead their colleagues in making changes to professional practices such as collaborative identification of essential learning outcomes, development of timely common assessments, and the establishment of systematic interventions to ensure optimal learning for all students. This training, however, does require significant obligation both in terms of actual dollars and in terms of the time commitment that leadership teams must make over time to transform the school faculty into a learning community. As school communities and districts seek to optimize their use of professional development resources, it is important to have information regarding the effectiveness and potential impact of the Professional Learning Communities Project in order to make sound decisions regarding participation. If the training protocol for the PLC Project is found to be related to job satisfaction, professional collaboration, and/or the implementation of specified best practices, then the PLC Project training protocol could be used in entirety or specific components adopted in other state-wide PLC initiatives. This research could also have direct application to schools implementing the PLC protocol in other countries throughout the world.

In addition to these practical considerations, this study will contribute to the body of knowledge and research regarding the connection between job satisfaction and perceptions of professional collaboration and implementation of best practices. The study will further contribute

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to the body of knowledge and research into the impact of a long term team-based professional development design, on teacher practice as well as the impact of this type of professional development model on the development of leadership capacity among faculty members. The study will also provide insight into how teachers both experience and put into practice the cultural and technical shifts involved in becoming part of a functional professional learning community.

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CHAPTER 2

REVIEW OF RELEVANT LITERATURE

Historical Context

Concerns about balancing goals of academic excellence and equality of educational opportunities have been central to policy debates in the United States for many decades. Since the landmark Supreme Court case *Brown v. Board of Education* (1954) brought the issue to the forefront of United States policymaking, various reports and legislative mandates have attempted to resolve the issues associated with this "excellence v. equity" debate. An examination of the historical context over the past 40 to 50 years is appropriate to aid in understanding the environment within which the Professional Learning Communities model for school improvement has evolved.

In 1966, a comprehensive report entitled *Equality of Educational Opportunity*, commonly known as the *Coleman Report* was published. This report originated as part of the Civil Rights Act of 1964 and mandated the Commissioner of Education to report to the President and Congress "concerning the lack of availability of equal educational opportunities for individuals by reason of race, color, religion, or national origin in public educational institutions at all levels in the United States." (Coleman et al., 1966, p. iii)

"The *Coleman Report* coincided with the administration of Lyndon B. Johnson and the Great Society initiatives, which supported increased spending to remedy social problems" (Wong & Nicotera, 2004, p.128). Coleman's study was a large scale investigation that included approximately 600,000 students, 60,000 teachers, and 3,100 schools nationwide. The report "exposed the underlying notions of equal educational opportunities by focusing on the notion

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that the concept implied effective equality of opportunity, that is, equality in those elements that are effective for learning" (Wong & Nicotera, 2004, p. 129).

Two major findings of the Coleman study have had major implications for U.S. educational policy over the past three decades. First, the report concluded that school "inputs," i.e. resources, including facilities, curriculum and teacher quality, do not show statistically significant effects on student achievement. As stated in the report:

> Differences in school facilities and curriculum, which are the major variables by which attempts are made to improve schools, are so little related to differences in achievement levels of students that, with few exceptions, their effects fail to appear even in a study of this magnitude. (Coleman et al., 1966, p. 316)

Despite this statement, the report did find some exceptions to its general conclusion that differences in school resources did not significantly impact student achievement. Among the most notable exceptions to this finding is the discrepancy between the impact of resources for majority white students vs. the minority black students. The report stated, "Again, it is for majority whites that the variations make the least difference; for minorities, they make somewhat more difference" (Coleman et al., 1966, p. 22). Also, in terms of teacher quality, the Coleman study noted that "differences in teacher quality have a cumulative effect on student achievement over the years and those differences influence the academic achievement of disadvantaged minority groups more than the achievement of white students. In addition, teachers' verbal scores and educational backgrounds show an impact on the academic achievement of minority students in the upper grades (Coleman et al., 1966, pp. 318-319).

The second major finding of the Coleman study dealt with the significance of the social composition of the school on student achievement:

> The higher achievement of all racial and ethnic groups in schools with greater proportions of white students is largely, perhaps wholly, related to effects associated with the student body's educational background and aspirations. This

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> means that the apparent beneficial effect of a student body with a high proportion of white students comes not from racial composition per se, but from the better educational background and higher educational aspirations that are, on the average, found among white students" (Coleman et al., 1966, p. 307).

A somewhat simplistic interpretation of the Coleman Report is that a school's resources, including facilities, curriculum and teacher quality have little impact on student achievement and little ability to overcome the much more significant impact of the social composition and background of the peer group/student body. Such an interpretation can lead to the conclusion that schools have relatively little opportunity to impact the achievement levels of their students in any significant way.

In the decade immediately following the release of this report, researchers began to look critically at the effects of schools on student learning. Over the past forty years, numerous educational researchers have examined schools in an attempt to identify specific attributes that contribute to their effectiveness in impacting student learning. Initial research in this area concentrated on identifying urban schools in which students were achieving at high levels, in contrast to the expectations set forth in the Coleman Report (Association for Effective Schools, Inc., 2008). The research then turned to the common characteristics of these successful schools in an attempt to identify concrete patterns that could be replicated. In 1982, Ronald Edmonds published a paper entitled *Programs of School Improvement: An Overview* in which he delineated a set of characteristics that formed the basis for his discussion of school improvement initiatives. He stated in this paper:

> Two important caveats must precede a description of the characteristics. First, researchers do not yet know whether the characteristics are the causes of instructional effectiveness that characterizes effective schools. Second, the characteristics are not rank ordered. We must thus conclude that to advance effectiveness a school must implement all of the characteristics at once.

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> The characteristics of an effective school are (1) the leadership of the principal notable for substantial attention to the quality of instruction; (2) a pervasive and broadly understood instructional focus; (3) an orderly, safe climate conducive to teaching and learning; (4) teacher behaviors that convey the expectation that all students are expected to obtain at least minimum mastery; (5) the use of measures of pupil achievement as the basis for program evaluation (Edmonds, 1982, p. 8)

The effective schools movement, in direct opposition to the conclusions of the Coleman Report, was committed to the belief that children of the urban poor could succeed in school and that the school could help them succeed. The overwhelming evidence from the large body of "Effective Schools Research" has galvanized educators around the idea that schools can and do make a difference, that there are specific characteristics and practices that effective schools have in common, and that it is possible to replicate these identified practices in a variety of situations with positive outcomes. Several studies undertaken in the effort to identify common "effective school" characteristics arrived at similar conclusions.

While the "Effective Schools Research" identified characteristics of schools that were achieving strong results in terms of student achievement, the research did not specify steps that schools could take to establish these characteristics and embed them within the school culture. Subsequent work from school and district level practitioners, as well as educational researchers, began to focus on how the professionals within the system, i.e. teachers and administrators, approached their work on a regular basis. Throughout the 1970's and 1980's, much attention was paid to teaching practices, with a particular focus on teacher behaviors in the classroom, as an avenue to establish more effective schools.

As education continued to evolve over the next several decades, efforts to emulate effective business practices, such as Total Quality Management and site-based decision-making became popular reform movements that promised to bring about substantive school improvement. During the late 1980's and throughout much of the 1990's, schools of educational

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leadership included a focus on the work of W. Edwards Deming, whose development of Total Quality Management first helped to rebuild Japan following World War II, and later helped to transform management practices in businesses across the United States. The theories and management strategies espoused by Deming to help United States businesses regain a competitive stance with Japan during the 1970's and 1980's began to be applied to educational systems in an effort to drive improvement in the quality of the American schools. *The Deming Management Method,* also known as Total Quality Management or TQM, identified fourteen principles for ensuring high quality. Among these principles were several that provided insight into issues plaguing American schools. The principles that applied most directly to education were used by educational leaders to prescribe ways to transform American schools. An overview of some of the Deming principles with the most direct application to educational leadership and an explanation of how each principle has impacted education, in either a proactive or reactive mode, follows.

Mission and Purpose:

> *Create a consistency of purpose for improvement of a product or service.* Dr. Deming suggests a radical new definition of a company role. Rather than making money, it is to stay in business and provide jobs through and innovation, research, constant improvement and maintenance (Walton, 1986, p. 34).

While the role of education is not to make money, the importance of having a clear, well-defined purpose for improvement is just as critical for educational systems as it is for businesses. In an effort to implement this principle, many school leaders at both the district and building levels spent a great deal of time and effort in developing well worded mission statements that were meant to impact and drive school improvement.

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High Standards and Accountability

> *Adopt the new philosophy.* Americans are too tolerant of poor workmanship and sullen service. We need a new religion in which mistakes and negativism are unacceptable (Walton, 1986, p. 34).

American schools have faced criticism on a number of issues from their inception with public cries for accountability reaching critical levels at various points throughout history. Over the last 50 years, pressure for increased accountability have followed the launching of Sputnik in 1957, the release of *A Nation at Risk* in 1983 and, most recently, the *No Child Left Behind Act of 2001*. At each of these critical junctures in history, expectations of schools have increased, and the lack of tolerance for substandard academic performance has served as a catalyst for change.

Teacher Empowerment

> *Cease dependence on mass inspection.* American firms typically inspect a product as it comes off the line or at major stages. Defective products are either thrown out or reworked; both are unnecessarily expensive. In effect, a company is paying workers to make defects and then to correct them. Quality comes not from inspection but from improvement (Walton, 1986, pp. 34-35).

The emphasis on time and effort wasted in producing substandard work and the focus on inclusion of employees in the process of determining how to improve the system were key elements of this principle that had, and continues to have, direct application to education. As school leaders began to embrace the notion that teachers should have a voice in improving schools, efforts to structure opportunities for teacher input into decision making increased. Additionally, school districts became more cognizant of the need to provide opportunities for collaboration and embedded professional development for teachers to help promote changes and improvements to teaching practices. During the 1980's and 1990's, many schools began to establish site councils or school improvement teams in an effort to involve staff in decision-

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making. Patrick Dolan describes his vision of the ideal site council and some pitfalls or misinterpretations encountered by schools as they began to develop shared decision-making structures:

> [The Site Council] is *not,* primarily a decision-making mechanism. This is not principalship by committee. A Site Council that focuses only on decision-making tends to make the intervention solely a power issue. It often exhausts itself on petty issues and control struggles and never gets onto the main business, which is *driving* the change. It never moves on to unstick the school, and its relationships, and never gets down to its real job. A Site Council is in place to push its own site, and as a result to push the larger system, to push the anchors, and the customer and community to look at fundamental issues of the school structure and delivery. Site Councils are there to create torque on the system, to create such tension that the system must unstick.
>
> The Site Council is, above all, a learning structure. Its job is to keep dreaming the school, inventing it, driving the change, and learning from it. It makes sure that everything that happens is done in a more collaborative fashion with deeper listening, in better contact with the customer, and with greater responsibility at the lower levels. It keeps driving, unsticking, and moving sites along through empowerment shifts. At every point it asks, "Where is the appropriate place for this decision to be made?" "With whom?" "In what configuration?" (Dolan, 1994, pp. 131-132).

Continuous Improvement

> *Improve constantly and forever the system of production and service.*
> Improvement is not a one-time effort. Management is obligated to continually look for ways to reduce waste and improve quality (Walton, 1986, p. 35).

Education in the United States has suffered for years from an unending quest for the "magic bullet," i.e. the one thing that will, once and for all, transform the system into one that ensures success for all students. Public pressure for accountability and the desire to demonstrate results in time for each new political cycle has tended to keep the educational system in a reactive rather than proactive mode. Deming's emphasis on ongoing, continuous improvement is in direct opposition to the typical "this year's new thing" approach to professional development and school reform initiatives that have characterized traditional operations in education for decades. Educators have always been frustrated by this tension between understanding that long term commitment to continuous improvement is critical to sustaining effective change, and the

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pressure to demonstrate results now. This is a tension that continues to exist, and continues to threaten the ability of public schools to realize substantive improvement.

Instructional Leadership

> *Institute leadership.* The job of a supervisor is not to tell people what to do or to punish them but to lead. Leading consists of helping people do a better job of learning by objective methods who is in need of individual help (Walton, 1986, p. 35).

Cries for accountability and increasing focus on the importance of strong instructional leadership have "ramped up" the expectations of educators in positions of leadership. Educational leaders today are faced with enormous pressure from various sectors to demonstrate improvement. According to Schwann and Spady:

> Educational leaders find themselves in an enormous quandary. They and their constituents live in a high-quality, global marketplace that:
>
> - Is extraordinarily dynamic and driven by transformational technologies that are almost obsolete the moment they are installed;
> - Offers employment conditions with limitless challenge, flexibility and opportunity for the able, adept, and highly motivated but with increasingly limited opportunities for others;
> - Contains exploding knowledge base with limitless access;
> - Functions within a society becoming more diverse and unequal every day and more divided about what to do about those differences and inequalities;
> - Holds powerful political and cultural pressures for everyone to pull his or her own weight or reap the consequences; and
> - Changes constantly (Schwann and Spady, 1998, pp. 13-14).

The role of instructional leadership in today's schools is clearly a critical one. Ron Edmonds cited the importance of instructional leadership in his original research stating, "the leadership of the principal notable for substantial attention to the quality of instruction" (Edmonds, 1982, p. 8). Over the years, a number of other researchers including Halligner & Heck, 2000; Lezotte, 1994 and Waters, Marzano & McNulty, 2003, have also identified the "leadership provide by the principal [as] a contributing factor to high student achievement"

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(O'Donnell et al., 2005, p. 56). Recently, a study was conducted by O'Donnell and White that sought to identify leadership behaviors that compose the dimension of promoting the school learning environment. According to their findings, the following practices are important for principals as instructional leaders:

- All principals should work with their teachers to identify their own strengths and weaknesses related to promoting the school learning climate;
- Principals in lower SES schools should collaborate with teachers and other school leaders to identify their strengths and weaknesses related to behaviors for defining the school mission;
- Principals should....conduct a comprehensive assessment of their own instructional leadership behaviors. Teachers expect to receive instructional expertise from principals. Because research continues to identify teacher perceptions of principal behaviors as linked to student achievement, principals should obtain and use this information. With regard to school learning climate, the phrase "perception is reality" might be more appropriate when adjusted to "teacher perception is reality" (O'Donnell et al., 2005, pp. 66-67)

Professional Development

> *Institute training.* Too often, workers have learned their job from another worker who was never trained properly. They are forced to follow unintelligible instructions. They can't do their job because no one tells them how (Walton, 1986, p. 35).

Professional development in the field of education has been available for a number of years; however the kinds of professional development opportunities afforded to teachers and administrators in service have seen dramatic evolution in the past decade. The National Staff Development Council has developed a comprehensive set of standards to provide guidance for educational leaders in the area of professional development. These standards reflect the most current understanding of what constitutes effective professional development. These standards include:

> *Learning Communities*: Staff development that improves the learning of all students organizes adults into learning communities whose goals are aligned with those of the school and district.

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> *Leadership*: Staff development that improves the learning of all students requires skillful school and district leaders who guide continuous instructional improvement.
> *Resources:* Staff development that improves the learning of all students requires resources to support adult learning and collaboration.
> *Data-Driven*: Staff development that improves the learning of all students uses disaggregated student data to determine adult learning priorities, monitor progress, and help sustain continuous improvement.
> *Evaluation*: Staff development that improves the learning of all students uses multiple sources of information to guide improvement and demonstrate its impact.
> *Research-Based*: Staff development that improves the learning of all students prepares educators to apply research to decision making.
> *Design*: Staff development that improves the learning of all students uses learning strategies appropriate to the intended goal.
> *Learning*: Staff development that improves the learning of all students applies knowledge about human learning and change.
> *Collaboration*: Staff development that improves the learning of all students provides educators with the knowledge and skills to collaborate.
> *Equity*: Staff development that improves the learning of all students prepares educators to understand and appreciate all students, create safe, orderly and supportive environments, and hold high expectations for their academic achievement.
> *Quality Teaching*: Staff development that improves the learning of all students deepens educators' content knowledge, provides them with research-based instructional strategies to assist students in meeting rigorous academic standards, and prepares them to use various types of classroom assessments appropriately.
> *Family Involvement:* Staff development that improves the learning of all students provides educators with knowledge and skills to involve families and other stakeholders appropriately
> (National Staff Development Council,
> http://web.nsdc.org/standards/index.cfm, retrieved March 5, 2008).

The NSDC Standards provide a framework for educators to use when designing and implementing the kind of attention to training and development of employee capacity that Deming identifies as one of the keys to building an effective, high quality organization. The NSDC Standards reject some of the traditional practices such as "one-shot workshops" or comprehensive menu-type offerings based on individual interest, and move toward more focused, job-embedded models of professional development featuring ongoing support, professional collaboration and alignment with district goals.

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Work as a Team

> *Break down barriers between staff areas.* Often staff areas, departments, units, whatever, are competing with each other or have goals that conflict. They do not work as a team so they can solve or foresee problems. Worse, one department's goals may cause trouble for another (Walton, 1986, p. 24).

Professional isolation in teaching has been the norm for more than a century in American schools. "This isolation was so complete that teachers quickly learned that they could teach whatever they liked (or did not like) however they liked." (Berliner, 1984; Marzano, Marzano & Pickering, 2003). Because the traditional structure of schools often hinders attempts to engage in routine professional collaboration, and because working in isolation is so strongly embedded into the traditional educational culture, teacher isolation continues in many settings. It is this legacy of isolation that school improvement initiatives such as DuFour and Eaker's PLC Model are designed to break down. Professional collaboration, as Deming correctly pointed out, is critical to keeping the entire organization moving in the same direction and it is at the heart of the PLC model of school improvement.

Take Action

> *Take action to accomplish the transformation.* It will take a special top management team with a plan of action to carry out the quality mission. Workers can't do it on their own, nor can managers. A critical mass of people in the company must understand the Fourteen Points, the Seven Deadly Diseases, and the Obstacles (Walton, 1986, p. 35).

Since the 1990's, some schools have established School Improvement Teams, representing teachers, administrators, support staff, parents and community members. These teams are typically charged with creating the School Improvement Plan to identify common goals and action steps to accomplish these goals.

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The Total Quality Management principles espoused by W. Edwards Deming infiltrated educational systems and, over time, impacted traditional thinking about how the effectiveness of schools should be measured. Many of the reform efforts spawned by the Deming philosophy recognized the role of teacher empowerment in helping schools to improve their effectiveness; however, the tendency to focus these efforts on involving teachers in decisions regarding school management rather than on ways to impact student learning, led to disappointing results.

No Child Left Behind

As we moved through the 1990's, and into the new millennium, renewed cries for accountability and increasing political pressure led to the passage of the *No Child Left Behind Act of 2001*. For the first time in American history, the federal government enacted legislation that placed significant sanctions on schools failing to meet the established performance criteria. Despite the numerous attempts at educational reform that had gone before, passage of this legislation left many educators scrambling to find ways to demonstrate improvement on standardized achievement test scores, as high stakes state-level standardized test scores now form the basis upon which sanctions are placed upon schools and districts. In a very real sense, educators are being forced, under *NCLB,* to focus on student achievement in a way that many have never done before.

Professional Learning Communities

Despite the various reform efforts that have been undertaken in public education over the past half century, teaching has remained a generally isolated profession in which practitioners have little opportunity for collaboration with colleagues regarding student learning. Efforts to transform this aspect of traditional teaching practice have centered in recent years of the development of collaborative models for school improvement. One of the most widely known of

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these models in the Midwestern United States is the Professional Learning Community Model developed by Drs. Robert Eaker and Richard DuFour. This comprehensive yet practical model for school improvement is solidly based in effective schools research, and provides a structure for ongoing professional collaboration focused on student learning. DuFour and Eaker outline six characteristics of Professional Learning Communities that draw strong parallels to the earlier work of W. Edwards Deming. These characteristics include:

> 1. *Shared Mission, Vision, and Values.* The *sine qua non* of a learning community is shared understandings and common values. What separates a learning community from an ordinary school is its collective commitment to guiding principles that articulate what the people in the school believe and what they seek to create. Furthermore, these guiding principles are not just articulated by those in positions of leadership; even more important, they are embedded in the hearts and minds of people throughout the world (DuFour and Eaker, 1998, p. 25).

This characteristic parallels Deming's call to "create a consistency of purpose." The recognition that members of an organization, whether a for-profit business or an educational enterprise, need to have a common sense of what it is they are working toward is a powerful aspect of human nature that is critical to the success of any organization.

> 2. *Collective Inquiry:* The engine of improvement, growth, and renewal in a professional learning community is inquiry. People in such a community are relentless in questioning the status quo, seeking new methods, testing those methods, and then reflecting on the results. Not only do they have an acute sense of curiosity and openness to new possibilities, they also recognize that the process of searching for answers is more important than having an answer (DuFour and Eaker, 1998, p. 25).

This characteristic of Professional Learning Communities has close connections to Deming's principle, "Improve constantly and forever the system of production and service." As educators engage in collective inquiry, thereby shifting the paradigm of the profession from one of knowledge delivery to one of problem solving, the quality of the educational system should be enhanced and students should have greater opportunities to succeed.

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> 3. Collaborative Teams: The basic structure of the professional learning community is a group of collaborative teams that share a common purpose. Some organizations base their improvement strategies on efforts to enhance the knowledge and skills of individuals. Although individual growth is essential for organizational growth to occur, it does not guarantee organizational growth. Thus, building a school's capacity to learn is a collaborative rather than an individual task (DuFour and Eaker, 1998, pp. 26-27).

This characteristic parallels Deming's admonition to "break down barriers between staff areas." Schools that embrace the Professional Learning Community Model of comprehensive school improvement must find ways to designate time within the regular working day for teachers to engage in routine collaboration. These schools must also attend to the needs of teachers to understand group dynamics and to learn how best to work together to enhance student learning.

> 4. Action orientation and experimentation: Professional learning communities are action oriented. Members of such organizations turn aspirations into action and visions into reality. Not only do they act; they are unwilling to tolerate inaction. They recognize that learning always occurs in a context of taking action, and they believe engagement and experience are the most effective teachers. Even seemingly chaotic activity is preferred to orderly, passive inaction (DuFour and Eaker, 1998, p. 27).

This characteristic reflects Deming's principle, "Take action to accomplish the transformation." Members of a fully functioning professional learning community understand the importance of moving forward, taking risks as needed, to work toward enhancing student learning. As in Deming's framework, the work of each PLC team is guided by the goals established by the building leadership team following the collection and analysis of relevant data that serve as the basis for goal-setting.

> 5. *Continuous Improvement*: A persistent discomfort with the status quo and a constant search for a better way characterize the heart of a professional learning community. Continuous improvement requires that each member of the organization is engaged in considering several key questions:
> - What is our fundamental purpose?

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- What do we hope to achieve?
- What criteria will we use to assess our improvement efforts?

A commitment to continuous improvement is evident in an environment in which innovation and experimentation are viewed not as tasks to accomplish or projects to complete, but as ways of conducting day-to-day business, *forever* (DuFour and Eaker, 1998, p. 28).

This characteristic also parallels Deming's call to, "Improve constantly and forever the system of production and service." Professional learning communities are never satisfied with the current reality, but are always seeking to improve what is in place. There is an innate understanding that regardless of how good they become with enhancing student learning, there will always be room for improvement; that the work represents a journey rather than a destination.

> *6. Results orientation*: Finally, a professional learning community realizes that its efforts to develop shared mission, vision and values; engage in collective inquiry, build collaborative teams; take action; and focus on continuous improvement must be assessed on the basis of results rather than intentions. Unless initiatives are subject to ongoing assessment on the basis of tangible results, they represent random groping in the dark rather than purposeful improvement (DuFour and Eaker, 1998, p. 29).

This characteristic closely parallels Deming's principle, "Adopt the new philosophy." This "philosophy" rejects substandard performance and establishes high expectations for workmanship, i.e. student achievement in the education sector. Schools embracing the PLC Model of comprehensive school improvement must also embrace the notion of accountability and high standards for all. These schools must reject the temptation to find excuses for poor student performance, and rather find ways to address the specific concerns to ensure that student achievement is constantly improving.

In addition to the six characteristics of professional learning communities, DuFour and Eaker have identified three key questions that should frame the work of educators:

1. What do we want students to learn?

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2. How will we know if they have learned it?
3. What are we going to do if they do not learn it? (Eaker et al., 2002, p. 41).

The first question refers to the identification of essential common outcomes that all students are expected to learn, i.e. curriculum. The second question highlights the importance of quality assessment instruments and procedures. The third question emphasizes the need for schools to have identified and developed a structured system of interventions to provide the necessary time and support for students who do not reach expected achievement levels and/or require additional challenges to meet their individual learning needs.

The framework for ongoing school improvement espoused by DuFour and Eaker is built upon the premise that schools can reach and sustain high levels of learning for all only through the establishment of a collaborative culture in which teachers are empowered to make decisions about curricular priorities, instructional methodology and appropriate interventions based on analysis of timely and meaningful student achievement data. It is a framework that relies upon ongoing, substantive professional development and collaboration among teachers and administrators that leads to greater collective understanding of essential curricular goals, meaningful data analysis and collaborative decision making regarding student learning.

One of the most important aspects of professional development to support the Professional Learning Communities model of ongoing school improvement involves meaningful assessment of student achievement data. This is an area that has traditionally not been emphasized in either pre-services or in-service training for teachers, yet the value of understanding the implications of any given assessment event is critical for teachers striving to address specific student learning needs in a timely and effective manner. According to the essay presented in the book *On Common Ground*, Doug Reeves states:

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> In the hands of a capable professional learning community, assessment is relentlessly constructive and focused on its singular purpose....the improvement of teaching and learning. Classroom assessments reflect consistently high expectations while providing a rich variety of methods for meeting a complex array of student needs. The feedback from these assessments is consistent...one teacher's proficiency is not another teacher's "superior"....and the communication of this feedback is timely (DuFour et al., 2005, p. 59).

Because assessment plays such a key role in providing teachers and other school leaders with the information they need to make appropriate decisions about instruction, the overall quality of assessment instruments as well as the capacity of teachers to use the information they provide, becomes critical. Additionally, the use of quality common assessments that form the foundation of professional discussions and collaboration about student achievement results is essential to ensure high levels of learning for all students (DuFour et al., 2005).

Assessment practices in the United States have been undergoing an evolution toward standards-based education for the past several decades. According to Stiggins:

> The idea that all students might be held to the same expectations has its origins in mastery learning models originated by Professor Bloom and his associates at the University of Chicago in the 1960's. The first sweeping application of this thinking took the form of the behavioral objectives movement in the 1970's, followed by the minimum competencies movement of the 1980's and the development of outcome-based education in the 1990's. Each new iteration has yielded a stronger following for the same basic concepts: effective schools do more than merely rank students by the end of high school...they maximize the achievement of all students (Stiggins et al., 2004, p. 30).

This evolution has brought educators to a general consensus about some of the essential conditions that must become firmly acculturated throughout the educational system in order for schools to make significant achievement gains. These essential conditions include:

- The system must confront and resolve teacher qualifications
- Every assessment must build student confidence and teacher efficacy
- Every assessment must accommodate differences among students
- Assessments must reveal trends in student achievement over time

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- Communities must understand and support sound assessment practices (Stiggins et al., 2004, pp. 46-50).

According to Stiggins, over the past 60 years, educational systems throughout the United States have religiously administered an ever-expanding array of standardized tests, yet the results have been largely static at best. He describes the "Testing Explosion" that has transpired in this country beginning with the institution of college placement exams in the 1950's, moving to district-wide standardized testing in the 1960's, state-wide standardized testing in the 1970's, national testing in the 1980's and international testing in the 1990's. As each new layer of testing was superimposed upon the other, scores were gathered, averaged and ranked and the results of these rankings were reported to the media. Stiggins believes that this virtual obsession with reporting rank orders of schools within districts, districts within states, states within the country, and countries within the world was built upon the mistaken belief that doing so would drive change. The premise of this effort, in Stiggin's mind, was to sufficiently embarrass low performing schools, districts, states and/or nations so as to compel them to improve. One of the fundamental flaws in this premise is the legacy of separation of the act of assessment from the business of teaching and learning. Almost from the outset of this 60-year "testing explosion," there was a deliberate break between those whose role it was to develop and score assessments, i.e. testing companies, and those whose role it was to teach students, i.e. teachers and administrators. As a result of this break, educators who were being held accountable for the results of standardized assessments typically had little idea of what the assessments were measuring or how to help students perform better on the assessments. Many teachers and administrators came to believe that the tests did not accurately measure student learning because there was often little correlation between the assessments and the curriculum that teachers were focusing on within their classrooms. The prevailing sentiment among educators became one of

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disillusionment and devaluation of standardized assessments. For a number of years, many schools saw the administration of standardized assessments as merely a compliance issue, something that was done because it was required, but largely ignored when making instructional decisions.

The latest wave of accountability has given birth to an era of "high stakes" testing unlike any previous movement in American education. The results of standardized tests can no longer be ignored or dismissed as irrelevant because they now carry accountability requirements that impact the ongoing viability of each public school and district. The *No Child Left Behind Act of 2001* brought accountability to the doorstep of each public classroom in the United States in a very real sense, and the need for educators to learn to understand and use assessment to inform and drive instructional decisions is critical. This effort cannot be undertaken without strong, sustained support in the form of both direct professional development focused on the development and interpretation of high quality classroom assessments, and ongoing collegial support in a structured system of regular professional collaboration.

An initial question that schools and districts must address involves how to develop a balanced assessment system that provides appropriate opportunities for both formative and summative assessment to occur. The assessment system must be such that teachers and students understand the purposes of different types of assessments, can rely upon the accuracy and timeliness of the assessments, and can use the information resulting from the assessments to enhance learning.

Stiggins has identified a series of steps that school districts can take to develop high quality assessment systems. An overview of these steps follows:

> Step 1 calls developing a clearly articulated and appropriate set of achievement standards for each student as the foundation for quality

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> assessment. We can assess accurately only those achievement targets we have defined.
>
> Step 2 requires a commitment to providing accurate, understandable, and usable information about student achievement to all key decision makers. Many users of assessment data use them in the service of student success. Therefore, we will consider how to plan to meet those many needs.
>
> Step 3 demands an assessment-literate school culture. All concerned with the quality of schools must understand the differences between sound and unsound assessment practices as well as the implications of both.
>
> Step 4 leads us to reconsider how best to collect, store, manage and communicate information about student achievement. All stakeholders in the educational system deserve information that is timely, accurate, and understandable and can lead to continued improvement.
>
> Step 5 directs us to lay a foundation of assessment policy that demands and supports quality practices. Some policies must be set at the state level. But most are put in place at the district and school levels. Sound assessment policy guides sound assessment practice (Stiggins, 2004, pp. 109-110).

The decisions of each PLC team are fundamentally dependent on the results obtained from the formative and summative assessments used within a given school or district. It is clear, therefore, that a great deal of time and attention must be afforded to the development of quality assessments as well as to the training of teachers to use and interpret the assessment results in order for the full impact of the PLC model to be realized.

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CHAPTER 3

METHODOLOGY

This chapter outlines the methodology for the study, including a description of the study design, participants, instruments, procedure, and limitations of the study.

Design

This study investigates the effectiveness of the training protocol provided by the Professional Learning Communities Project by measuring the impact of this training on perceptions regarding job satisfaction, professional collaboration, and implementation of best practices. Eligible participants completed a survey that was developed to measure perceptions of job satisfaction, professional collaboration, and implementation of best practices. The survey was developed by the researcher and was based the *Critical Issues for Team Consideration* (DuFour, et al., 2006, pp. 100-101) that provides the foundation for professional development in the PLC process. The survey questions were reviewed by educators for clarity, and a pilot was conducted to ensure that the data captured by the Survey Monkey system was accurate. Participants were invited to complete the electronic survey by accessing the survey through a web link. The responses to the survey were logged anonymously through the Survey Monkey system to maintain confidentiality.

Participants were divided into groups based on the number of years their respective schools have been involved in the PLC Project, i.e. less than one year, 3 years, and 4 years for a between-groups approach to the design. The subject district did not have any schools that were involved in the PLC Project for 2 years, so this grouping was omitted from this particular study. Analyses of variance (ANOVA) were conducted for each question to determine if there was a

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significant difference between groups of schools with various years of participation in the Professional Learning Communities Project and each of the following components:

- Levels of job satisfaction
- Levels of professional collaboration
- Levels of implementation of best practices

Additionally, to further strengthen the research, multivariate analysis (MANOVA) was conducted to analyze the questions as clusters based upon the groups of job satisfaction, professional collaboration, and implementation of best practices. The Wilks' Lambda method of MANOVA was used. After conducting the MANOVA, univariate analyses were conducted for each question in the clusters that were noted as significant ($p<.05$) on the MANOVA to identify the distinguishing variables that are individually affected by the years of experience in Professional Learning Communities. Finally, post hoc testing through the least squares difference method was conducted on the distinguishing variables that were deemed significant ($p<.05$) to identify the specific areas of significance between the different groups.

Participants

The participant pool for this study includes all teachers, certified staff members, and school administrators within the subject school district. The researcher administered an electronic survey which was based upon the *Critical Issues for Team Consideration* (DuFour, et al., 2006, pp. 100-101) to measure teacher perceptions regarding job satisfaction, professional collaboration, and implementation of best practices. This survey appears in Appendix C. This survey was also made available to teachers, certified staff members, and school administrators for a four week period from December 2008 to January 2009 to elicit responses from all who voluntarily complete the surveys.

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The district in which this study was carried out serves a suburban, middle class community located adjacent to a major metropolitan area in the Midwestern United States. The district is comprised of five elementary schools (grades K-4), one middle school (grades 5-6), one middle school (grades 7-8), two comprehensive high schools (grades 9-12), one alternative school (grades 5-12) for credit recovery and students serving long term suspensions, and one career technical school. Total student enrollment within the district is approximately 5,400. Ethnic make-up of students within the subject district is 0.8% Asian, 11.3% African American, 5.0% Hispanic, 0.2% Native American, and 82.6% Caucasian. A total of 1,782 students are eligible for Free/Reduced Lunch, accounting for 32.6% of the total student population. The average graduation rate over the past five (5) years is 85.6%.

A total of 481 teachers, school administrators, and other certified staff members form the eligible participant pool for this study. Within the eligible participant pool, 99.3% of the teachers hold regular teaching certificates, 0.2% hold temporary or special assignment certificates and 0.5% hold substitute or expired certificates. The average years of teaching experience within the eligible pool is 14.2 years and 35.3% of the teachers hold advanced degrees.

Instrument

An electronic survey instrument was used to elicit teacher perceptions regarding each of the three major aspects of this study. These aspects include: 1) professional collaboration, 2) job satisfaction, and 3) implementation of best practices.

According to Gallup's research, "actively disengaged workers tend to be significantly less productive, report being less loyal to their companies, are less satisfied with their personal lives, and are more stressed and insecure about their work than their colleagues" (Gallup, 2001,

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p. 1). Survey questions were developed to determine the degree of job satisfaction. This section of the survey was designed to measure levels of job satisfaction based on the following factors:

- Quality of working conditions
- Leadership and social interactions
- Other aspects of the job including clarity of job requirements, challenge and interest generated, and variety of tasks.

The second section of the survey is based on DuFour's "Critical Issues for Team Consideration," (DuFour et al., 2006, pp.100-101) and was designed to measure professional collaboration, best practices, and areas emphasized in the PLC Project. These competencies include: professional collaboration, decision-making regarding curriculum priorities and implementation, use of assessment to drive instruction. A copy of this survey appears in Appendix C.

This survey was reviewed and revised by a panel of educators prior to making it available to the eligible participant pool. This panel gave feedback on the content of the questionnaire, format, and clarity of the individual questions. Minor changes to the survey instrument were made based upon feedback from this review panel. The survey questions were uploaded to the Survey Monkey system which allowed the survey to be conducted electronically. A pilot of the survey was conducted. Minor revisions were made to the Survey Monkey electronic version of the questionnaire to ensure that the data was captured accurately. Participants were invited to complete the electronic survey by accessing the survey through a web link. The responses to the survey were logged anonymously through the Survey Monkey system to ensure confidentiality.

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Procedure

Data collection occurred over a four-week period in from December 2008 through January 2009. All teachers, certified staff members, and school administrators in the subject district received an email message from the researcher requesting their participation in the survey which measures job satisfaction, professional collaboration, and implementation of best practices. The email messages provided the potential participants with an explanation of the purpose of the survey and specific measures for ensuring the anonymity of the participants. After the survey was available for approximately three weeks, the participant sent a reminder email to all potential participants again requesting their participation. The survey was provided to the eligible participants in electronic format using *Survey Monkey*.

Data obtained from the survey was disaggregated based on the number of years participants have been involved with the PLC Project, i.e. less than one year, 3 years, and 4 years. The subject district did not have any schools with 2 years of involvement with the PLC Project, so this group was omitted from this survey. Categories of questions were designed to measure perceptions of job satisfaction, professional collaboration, and implementation of best practices. Survey participants responded to the questions by choosing strongly disagree, disagree, agree, or strongly agree. These responses were recoded to the following strongly disagree =1, disagree = 2, agree = 3, and strongly agree = 4. Analysis of variance (ANOVA) was used to determine the differences in responses to each question based on the number of years of participation in the PLC Project and variances in responses were considered both individually by question and holistically by category

Additionally, the multivariate analysis of variance (MANOVA) was conducted to analyze the questions as groups based upon the groups of job satisfaction, professional collaboration, and

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implementation of best practices. The Wilks' Lambda statistic test was used to test whether there are differences between the means of groups of respondents with varying years of Professional Learning Community training. After conducting the Wilk's Lambda test, univariate analyses were conducted for each question in the clusters that were noted as significant ($p<.05$) on the MANOVA to identify the distinguishing variables that are individually affected by the years of experience in Professional Learning Communities. Finally, post hoc testing through the least squares difference method was conducted to determine specifically where the significance occurred between the PLC training groups.

Limitations

This study is limited to teachers, school administrators, and other certified staff members self reporting their perceptions regarding job satisfaction, professional engagement and use of specified best practices. The reports on job satisfaction, in particular, may be impacted by significant circumstances other than participation in the PLC Project. Due to declining enrollment within the district, two elementary schools initially involved in the PLC Project were closed at the end of the 2006-2007 school year. Elementary schools within the district also moved from a K-5 configuration to a K-4 configuration, and the two middle schools moved from both having a 6-8 configuration to one serving grades 5-6 and the other serving grades 7-8. This transition required a significant reassignment of teachers, sometimes on an involuntary basis, that became effective in the 2007-2008 school year. Thus, some teachers who had previously been working in PLC schools are now working in schools that are either in the beginning stages or not formally part of the initiative while others who had previously been in non-participant schools are now working in schools that have been involved with the initiative for three or more years. As a result of this redistribution of staff at the elementary and middle school levels, results of the

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surveys may be impacted by varying levels of exposure to and/or participation in the PLC process as well as by residual negative feelings about the closing of schools and/or involuntary transfers.

The scope of the study was limited to examining the impact of participation in the Professional Learning Communities Project among schools within the subject school district only. Results from schools within the district that have been formal participants in the Project for three or more years will be compared to results from schools within the district that have had less than one year of formal training in the Project. The study is further limited to those teachers, school administrators, and other certified staff members within the subject school district who voluntarily complete the survey instruments.

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CHAPTER 4

RESULTS

The Professional Learning Community (PLC) training protocol requires a three-year commitment in which building administrators and lead teachers are trained as a building leadership team to enable them to spearhead the implementation of the PLC process in their schools. This protocol was adopted to provide teachers and administrators with long-term training and support. Participation requires a significant investment of time and financial resources on the part of the district. This study was designed as one measure of how participation in this training is impacting schools within the subject district.

This chapter will present results of the survey designed to gather feedback from teachers, administrators and other certified staff members regarding job satisfaction, professional collaboration, and implementation of best practices.

Overview of Methodology and Design

This study investigated the effectiveness of the PLC training protocol by asking eligible participants to self report on a survey that was used to measure perceptions of job satisfaction, professional collaboration, and implementation of best practices.

Participants were divided into groups based on the number of years their respective schools have been involved in the PLC Project, i.e. less than one year, 3 years, or 4 years for a between-groups approach to the design. The subject district did not have any schools with 2 years of PLC experience, so this group was omitted from the study. Analysis of variance (ANOVA) was conducted for each question to determine if there is a significant difference between groups of schools with various years of participation in the Professional Learning Communities Project and each of the following components:

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- Levels of job satisfaction
- Levels of professional collaboration
- Levels of implementation of best practices

Additionally, the multivariate analysis of variance (MANOVA) was conducted to analyze the questions as groups based upon the categories of job satisfaction, professional collaboration, and implementation of best practices. The Wilks' Lambda statistic test was used to measure whether differences exist between the means of groups of respondents with varying years of Professional Learning Community training. After conducting the Wilk's Lambda test, univariate analyses were conducted for each question in the clusters that were noted as significant ($p<.05$) on the MANOVA to identify the distinguishing variables that are individually affected by the years of experience in Professional Learning Communities. Finally, post hoc testing through the least squares difference method was conducted to determine specifically where the significance occurred between the PLC training groups.

A total of 223 participants completed this self-reporting survey out of a total of 481 eligible teachers, school administrators, and other certified staff members which created a 46% response rate. Of the 223 participants, 204 (91%) were teachers or other certified staff members such as librarians, literacy coaches, and speech therapists, while 9% or 19 respondents were administrators. The following tables break down the demographic information for the participants.

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Table 1.1: PLC Group Participants

Number of Years in PLC Training	Eligible Participant Pool (n)	% of Total Part. Pool	Number of Respondents (n)	% of Group Part. Pool	Number of Teachers or Certified Staff (n)	% of Teachers in Group Part. Pool	Number of Administrators (n)	% of Admin. In Group Part. Pool
< 1 year	227	47%	108	48%	98	91%	10	9%
3 years	121	25%	63	52%	59	94%	4	6%
4 years	133	28%	52	39%	47	90%	5	10%
Total	481	100%	223	46%	204	91%	19	9%

Table 1.2: Experience or Training in Professional Learning Communities

Experience / Training	Response Count	Percentage of Total Participants
No Experience / Training	16	7%
Very Little Experience / Training	37	17%
Some Experience / Training	111	50%
Much Experience / Training	59	26%
Total	223	100%

Research Questions

The study investigated whether or not participation in the PLC training protocol had a positive impact on job satisfaction, professional collaboration, and implementation of best practices as a result of involvement in this process over time. In order to test this premise, the following research questions were tested:

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1. Do teachers in school communities that have had at least three years of direct involvement in the Professional Learning Communities Project report greater levels of job satisfaction than those in school communities that have less than one year of involvement in the project?
2. Do teachers in school communities that have had at least three years of direct involvement in the Professional Learning Communities Project report greater levels of professional collaboration than those in school communities that have less than one year of involvement in the project?
3. Do teachers in school communities that have had at least three years of direct involvement in the Professional Learning Communities Project report using specified practices, based on the "Critical Issues for Team Consideration," (DuFour et al., 2006, pp. 100-101) to greater degrees than do those in school communities that have less than one year of involvement in the project?

ANOVA Results of the Job Satisfaction Survey Questions

Analyses of Variance (ANOVAs) were conducted on each job satisfaction survey question. The following data tables show the responses to the job satisfaction survey questions that were reported as significant ($p<.05$) between groups to provide information for the following research question: Do teachers in school communities that have had at least three years of direct involvement in the Professional Learning Communities Project report greater levels of job satisfaction than those in school communities that have less than one year of involvement in the project? Table 1.3 shows the responses to the job satisfaction survey questions reported as significant ($p<.05$) between groups and Table 1.4 indicates the ANOVA results for the job satisfaction survey questions reported as significant ($p<.05$) between groups.

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Twenty-one questions related to job satisfaction were asked of the participants. Of these twenty-one, the following three questions resulted in variance between groups that met the threshold of statistical significance ($p<.05$):

- Job Satisfaction Question 14: I have the materials and equipment that I need in order to do my work well.
- Job Satisfaction Question 19: My co-workers are committed to doing quality work.
- Job Satisfaction Question 20: My colleagues and I hold each other accountable.

Figure 1 shows the mean scores for both of the job satisfaction survey questions that met the threshold of statistical significance ($p<.05$) between the PLC training groups.

The job satisfaction survey question 14 regarding materials and equipment needed to do the job resulted in $F(2,203) = 6.508$, $p = .002$. Third year PLC schools reported higher perception levels ($M_{3years} = 3.23$, $SD=.73$) than the fourth year PLC schools ($M_{4years} = 2.90$, $SD=.80$) and schools with less than one year of formal PLC training ($M_{<1year} = 2.79$, $SD=.70$).

The job satisfaction survey question 19 regarding co-worker commitment to quality work resulted in $F(2,203) = 4.487$, $p = .012$. The group of schools that participated in 3 years of PLC training ($M_{3years} = 3.50$, $SD=.59$) and less than one year of PLC training ($M_{<1year} = 3.50$, $SD=.56$) both reported higher perception levels than the 4th year training group for this question ($M_{4years} = 3.21$, $SD=.67$).

The job satisfaction survey question 20 regarding colleagues holding one another accountable resulted in $F(2,203) = 3.301$, $p = .039$. The group of schools that participated in less than one year of PLC training ($M_{<1year} = 3.29$, $SD=.64$) reported higher perception levels for this

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question than the group of schools with 3 years of PLC training (M_{3years} = 3.18, SD=.71) and schools with four years of training (M_{4years} = 3.00, SD=.63).

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Table 1.3: Job Satisfaction Survey Analysis of Questions that are Reported as Significant Between-Groups

	Number of Years in PLC	N	Mean	Std. Deviation	Std. Error	95% Confidence Interval for Mean		Min.	Max.
						Lower	Upper		
JS14 I have the materials and equipment that I need in order to do my work well.	< 1	92	2.79	0.70	0.07	2.65	2.94	1	4
	3	62	3.23	0.73	0.09	3.04	3.41	1	4
	4	52	2.90	0.80	0.11	2.68	3.13	1	4
	Total	206	2.95	0.76	0.05	2.85	3.06	1	4
JS19 My coworkers are committed to doing quality work.	< 1	92	3.50	0.56	0.06	3.38	3.62	2	4
	3	62	3.50	0.59	0.08	3.35	3.65	2	4
	4	52	3.21	0.67	0.09	3.03	3.40	1	4
	Total	206	3.43	0.61	0.04	3.34	3.51	1	4
JS20 My colleagues and I hold each other accountable.	< 1	92	3.29	0.64	0.07	3.16	3.43	2	4
	3	62	3.18	0.71	0.09	3.00	3.36	1	4
	4	52	3.00	0.63	0.09	2.83	3.17	2	4
	Total	206	3.18	0.67	0.05	3.09	3.28	1	4

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Table 1.4: ANOVA Results for Job Satisfaction Survey Questions Reported as Significant Between Groups

		Sum of Squares	df	Mean Square	F	Sig.	Is the difference significant
JS14 I have the materials and equipment that I need in order to do my work well.	Between Groups	7.08	2	3.540	6.508	0.002	Yes
	Within Groups	110.43	203	0.544			
	Total	117.51	205				
JS19 My coworkers are committed to doing quality work.	Between Groups	3.23	2	1.617	4.487	0.012	Yes
	Within Groups	73.17	203	0.360			
	Total	76.41	205				
JS20 My colleagues and I hold each other accountable.	Between Groups	2.87	2	1.433	3.301	0.039	Yes
	Within Groups	88.12	203	0.434			
	Total	90.99	205				

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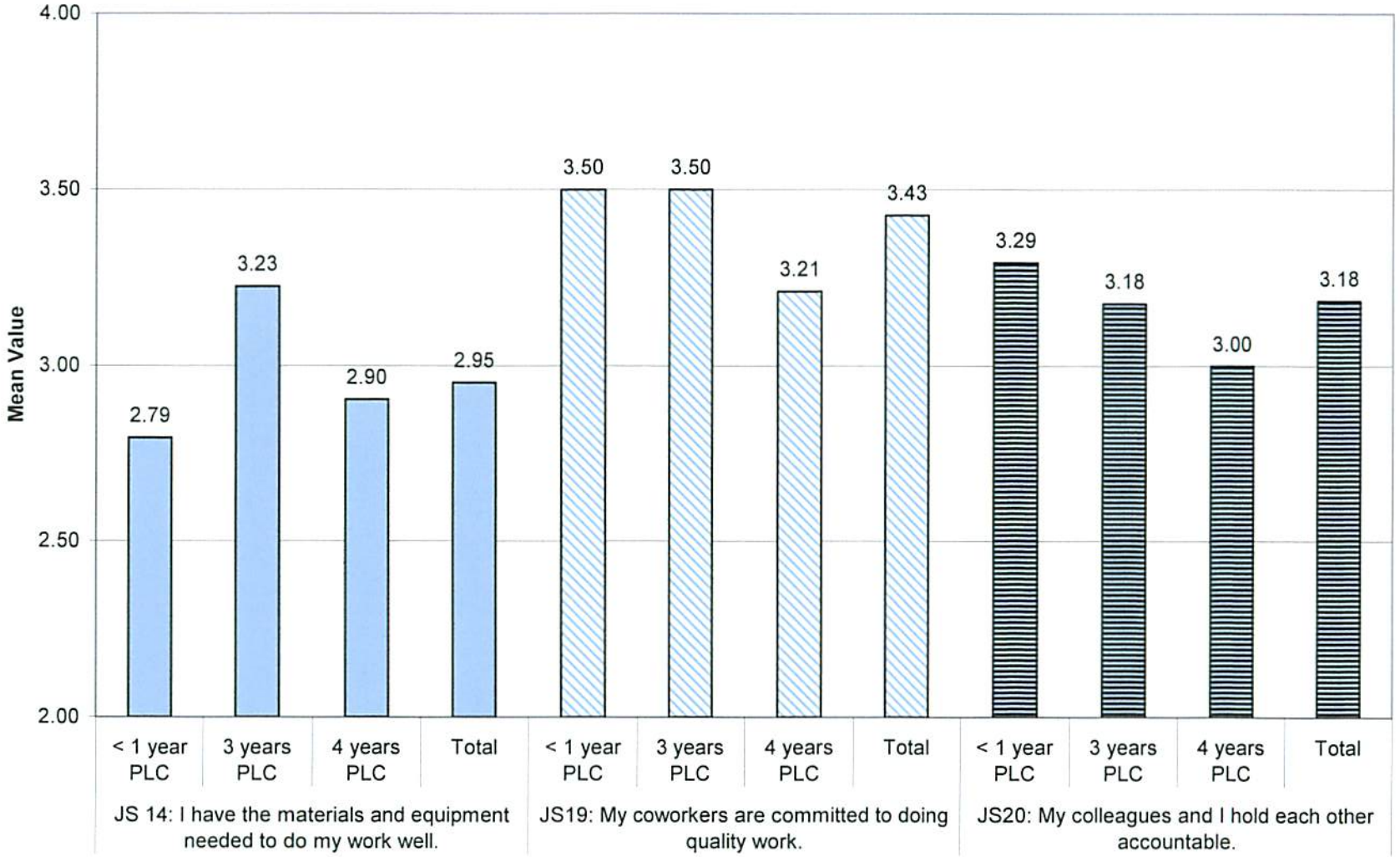
Figure 1 - Significant Job Satisfaction Significant Questions (p<.05)



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ANOVA Results of the Professional Collaboration Survey Questions

Analyses of Variance (ANOVAs) were conducted on each professional collaboration survey question. The following data tables show the responses to the professional collaboration survey questions that were reported as significant ($p<.05$) between groups to provide information for the following research question: Do teachers in school communities that have had at least three years of direct involvement in the Professional Learning Communities Project report greater levels of professional collaboration than those in school communities that have less than one year of involvement in the project? Table 1.5 shows the responses to the professional collaboration survey questions that reported significance ($p<.05$) between groups, and Table 1.6 indicates the ANOVA results for the professional collaboration questions reported as significant between groups.

Seven questions related to professional collaboration were asked of the participants. Of these seven, the following three questions resulted in variance between groups that met the threshold of statistical significance ($p<.05$):

- Collaboration Question 3: As a team, we are working interdependently to attain the established SMART goals.
- Collaboration Question 5: As a team, we formally evaluate our adherence to team norms.
- Collaboration Question 6: As a team, we formally evaluate our effectiveness at least twice a year.

Figure 2 shows the mean scores of the professional collaboration survey questions that met the threshold of statistical significance between the PLC training groups.

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The professional collaboration survey question 3 regarding teams working interdependently to attain the established SMART goal resulted in $F(2,201)=4.460$, $p = .013$. The group of schools that participated in three years of PLC training ($M_{3years} = 3.41$, $SD=.76$) reported higher perception levels than the schools with less than one year of PLC experience ($M_{<1year} = 3.35$, $SD=.73$) and the schools with four years of PLC training ($M_{4years} = 3.02$, $SD=.73$).

The professional collaboration survey question 5 regarding formal evaluation of adherence to team norms resulted in $F(2,200)=3.100$, $p = .047$. The group of schools that participated in 3 years of PLC training ($M_{3years} = 3.16$, $SD=.86$) reported higher perception levels than schools with less than one year of PLC training ($M_{<1year} = 3.12$, $SD=.87$) and schools with four years of PLC experience ($M_{4years} = 2.78$, $SD=.94$) for this question.

The professional collaboration survey question regarding formal evaluation of effectiveness resulted in $F(2, 199)=3.93$, $p = .021$. The group of schools that participated in three years of PLC training ($M_{3years} = 3.25$, $SD=.86$) reported higher perception levels than the schools with less than one year of PLC experience ($M_{<1year} = 3.18$, $SD=.88$) and the fourth year PLC schools ($M_{4years} = 2.80$, $SD=.98$) for this question.

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Table 1.5: Professional Collaboration Survey Analysis of Questions Reported as Significant Between-Groups

	Number of years in PLC	N	Mean	Std. Deviation	Std. Error	95% Confidence Interval for Mean		Min.	Max.
						Lower	Upper		
Collaboration03 As a team, we are working interdependently to attain the established SMART goals.	< 1	92	3.35	0.73	0.08	3.20	3.50	2	4
	3	61	3.41	0.76	0.10	3.21	3.60	1	4
	4	51	3.02	0.73	0.10	2.81	3.23	1	4
	Total	204	3.28	0.75	0.05	3.18	3.39	1	4
Collaboration05 As a team, we formally evaluate our adherence to team norms.	< 1	91	3.12	0.87	0.09	2.94	3.30	1	4
	3	61	3.16	0.86	0.11	2.94	3.38	1	4
	4	51	2.78	0.94	0.13	2.52	3.05	1	4
	Total	203	3.05	0.89	0.06	2.93	3.17	1	4
Collaboration06 As a team, we formally evaluate our effectiveness at least twice a year.	< 1	91	3.18	0.88	0.09	2.99	3.36	1	4
	3	60	3.25	0.86	0.11	3.03	3.47	1	4
	4	51	2.80	0.98	0.14	2.53	3.08	1	4
	Total	202	3.10	0.91	0.06	2.98	3.23	1	4

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Table 1.6: ANOVA Results for Professional Collaboration Survey Questions Reported as Significant Between-Groups

		Sum of Squares	df	Mean Square	F	Sig.	Is the difference significant
Collaboration03 As a team, we are working interdependently to attain the established SMART goals.	Between Groups	4.91	2	2.45	4.46	0.013	Yes
	Within Groups	110.60	201	0.55			
	Total	115.51	203				
Collaboration05 As a team, we formally evaluate our adherence to team norms.	Between Groups	4.85	2	2.42	3.10	0.047	Yes
	Within Groups	156.66	200	0.78			
	Total	161.51	202				
Collaboration06 As a team, we formally evaluate our effectiveness at least twice a year.	Between Groups	6.34	2	3.17	3.93	0.021	Yes
	Within Groups	160.48	199	0.81			
	Total	166.82	201				

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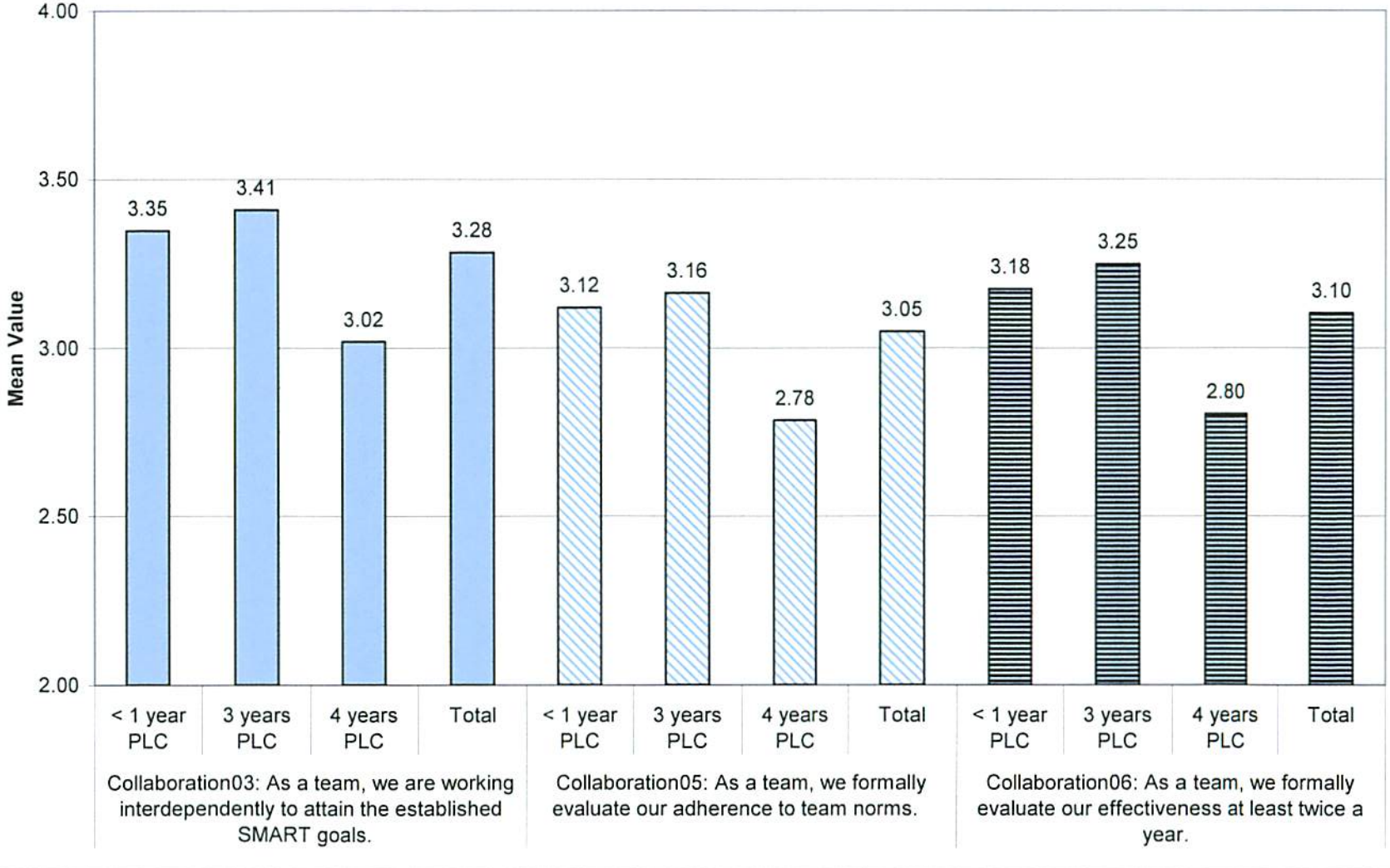
Figure 2 - Significant Professional Collaboration Survey Questions (p<.05)



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ANOVA Results of the Implementation of Best Practices Survey Questions

Analyses of Variance (ANOVAs) were conducted on each implementation of best practices survey question. Survey questions were designed to assess implementation of best practices and provide information for the following research question: Do teachers in school communities that have had at least three years of direct involvement in the Professional Learning Communities Project report using specified practices, based on the "Critical Issues for Team Consideration," (DuFour et al., 2006, pp.100-101) to greater degrees than do those in school communities that have less than one year of involvement in the project? Seventeen questions related to implementation of best practices were asked of the participants. Of these seventeen, none of questions resulted in variance between groups that met the threshold of statistical significance ($p<.05$).

MANOVA Results of Survey Clusters

A multivariate analysis of variance (MANOVA) was conducted to analyze clusters of survey questions by category: job satisfaction, professional collaboration, and implementation of best practices. The Wilks' Lambda statistic test was used to test whether there are differences between the means of groups of respondents with varying years of experience with the PLC Project. When this analysis was conducted, the job satisfaction cluster met the threshold of statistical significance ($p<.05$) while significance was not noted for the professional collaboration and implementation of best practices clusters. Table 1.7 provides the results of the Wilks' Lambda MANOVA analysis. The Job Satisfaction cluster resulted in $F(42,366)=1.996$, $p<.001$.

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Table 1.7: MANOVA RESULTS OF SURVEY QUESTION CLUSTERS

Multivariate Tests (MANOVA)							
Survey Cluster	Statistical Test	Value	F	Hypothesis df	Error df	Sig.	Significant?
Job Satisfaction	Wilks' Lambda	0.66	1.996	42	366	0.00	Yes
Professional Collaboration	Wilks' Lambda	0.89848031	1.49241263	14	380	0.11	No
Implementation of Best Practices	Wilks' Lambda	0.869386555	0.759020404	34	356	0.83	No

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Once the job satisfaction cluster of survey questions was noted as meeting the level of significance ($p<.05$) through the MANOVA analysis, the univariate analysis of variance (ANOVA) was conducted on each job satisfaction survey question to see which of the survey questions were individually affected by the years of Professional Learning Community training and experience. Table 1.8 shows the results for the job satisfaction survey questions that were noted as significant. Of the twenty-one job satisfaction survey questions, the following three questions met the statistical significance level ($p<.05$):

- Job Satisfaction Question 14: I have the materials and equipment that I need in order to do my work well.
- Job Satisfaction Question 19: My coworkers are committed to doing quality work.
- Job Satisfaction Question 20: My colleagues and I hold each other accountable.

The job satisfaction survey question 14 regarding individuals having the materials and equipment needed to do their work well resulted in $F(2,203)=6.508$, $p = .002$.

The job satisfaction survey question 19 regarding coworker commitment to quality work resulted in $F(2,203) = 4.487$, $p = .012$.

The job satisfaction survey question 20 regarding colleagues holding each other accountable resulted in $F(2,203)= 3.301$, $p = .039$.

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Table 1.8: Significant Job Satisfaction Survey Questions Identified through Univariate Analysis of Variance

	Type III Sum of Squares	df	Mean Square	F	Sig.	Significant
JS14 I have the materials and equipment that I need in order to do my work well.	7.080535704	2	3.540267852	6.50773	0.002	Yes
JS19 My coworkers are committed to doing quality work.	3.234690067	2	1.617345034	4.48691	0.012	Yes
JS20 My colleagues and I hold each other accountable.	2.865817209	2	1.432908604	3.30079	0.039	Yes

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Post hoc testing through the least squares difference method was used to determine specifically between which groups of PLC training the levels of significance occurred for the following job satisfaction questions:

- Job Satisfaction Question 14: I have the materials and equipment that I need in order to do my work well.
- Job Satisfaction Question 19: My coworkers are committed to doing quality work.
- Job Satisfaction Question 20: My colleagues and I hold each other accountable.

A post hoc analysis of the job satisfaction question 14 regarding materials and equipment was conducted. The 3rd year PLC group reported higher perception levels than the 1st year group which resulted in a significance level of p=.001. The 3rd year PLC group also reported higher perception levels than the 4th year group which resulted in a significance level of p=.021. No significance was noted between the 1st and 4th year PLC groups.

A post hoc analysis of the job satisfaction question 19 regarding coworker commitment to quality work was also conducted. The 1st year PLC group reported higher perception levels than the 4th year PLC group which resulted in a significance level of p=.006. The 3rd year PLC group reported higher perception levels than the 4th year PLC group which resulted in a significance level of .011. No significance was noted between the 1st and 3rd year PLC groups.

A post hoc analysis of the job satisfaction question 20 regarding holding colleagues accountable was also conducted. The 1st year PLC group reported higher perception levels when compared to the 4th year PLC groups which resulted in a significance level of p=.011. No significance was noted between the 1st year and 3rd year PLC groups or between the 3rd year and 4th year PLC groups.

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Table 1.9: Post Hoc Testing Results of Significant Job Satisfaction Survey Questions

	(I) Years PLC	(J) Years PLC	Mean Difference (I-J)	Std. Error	Sig.	Significant
JS14: I have the materials and equipment that I need in order to do my work well.	1 year of PLC	3 years of PLC	-0.432328191	0.121192024	0.001	Yes
		4 Years of PLC	-0.110367893	0.12796438	0.389	No
	3 years of PLC	1 year of PLC	0.432328191	0.121192024	0.001	Yes
		4 Years of PLC	0.321960298	0.138694215	0.021	Yes
	4 Years of PLC	1 year of PLC	0.110367893	0.12796438	0.389	No
		3 years of PLC	-0.321960298	0.138694215	0.021	Yes
JS19: My coworkers are committed to doing quality work.	1 year of PLC	3 years of PLC	4.44089E-16	0.098650262	1.000	No
		4 Years of PLC	0.288461538	0.104162957	0.006	Yes
	3 years of PLC	1 year of PLC	-4.44089E-16	0.098650262	1.000	No
		4 Years of PLC	0.288461538	0.112897038	0.011	Yes
	4 Years of PLC	1 year of PLC	-0.288461538	0.104162957	0.006	Yes
		3 years of PLC	-0.288461538	0.112897038	0.011	Yes
JS20: My colleagues and I hold each other accountable.	1 year of PLC	3 years of PLC	0.116058906	0.108260705	0.285	No
		4 Years of PLC	0.293478261	0.114310444	0.011	Yes
	3 years of PLC	1 year of PLC	-0.116058906	0.108260705	0.285	No
		4 Years of PLC	0.177419355	0.123895393	0.154	No
	4 Years of PLC	1 year of PLC	-0.293478261	0.114310444	0.011	Yes
		3 years of PLC	-0.177419355	0.123895393	0.154	No

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Summary of Study

An analysis of variance (ANOVA) was conducted to determine if variance existed between the groups of schools with varying years of PLC training in their responses to each survey question that met the threshold for significance ($p<.05$). The responses were analyzed by the research categories of job satisfaction, professional collaboration, and implementation of best practices.

Overall for the ANOVAs, mean scores for questions regarding job satisfaction ranged from 2.79 to 3.73 on a 4 point scale. Significance between groups was found for 14% or three of the twenty-one questions related to job satisfaction. The highest mean score for Job Satisfaction question 14 regarding having the materials and equipment needed to do the job was reported by the group of schools with three years of PLC training. The lowest mean score for this question was 2.79 for the group with less than 1 year of training. A mean of 3.50 was reported by both the group with less than one year and the group with three years training for Job Satisfaction question 19 regarding co-worker commitment to quality work. The group with four years of training reported a mean score of 3.21 on this question. For Job Satisfaction question 20 regarding colleagues holding each other accountable, the group with less than one year of training reported the highest mean score of 3.29 as compared to the three year group which had a mean score of 3.18 and the four year group which had a mean score of 3.00.

Overall for the ANOVAs, the mean scores for questions regarding professional collaboration ranged from 2.78 to 3.49 on a four point scale. Of the questions in this category, 43% or three of the seven questions met the ($p<.05$) threshold for statistical significance. Collaboration question 3 regarding teams working interdependently to attain SMART goals resulted in the highest mean score of 3.41 by the group of schools with three years of PLC

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training. The lowest mean score for this question was 3.02 reported by the group with four years of PLC training. The highest mean score for Collaboration question 5 regarding teams evaluating their adherence to team norms was 3.16 reported by the group of schools with three years of PLC training. The lowest mean score of 2.78 was reported by the group of schools with four years of training. The highest mean score for Collaboration question 6 regarding formally evaluation of effectiveness was 3.25 reported by the group of schools with three years of training. The lowest mean score was 2.80 reported by the group of schools with four years of training. On all professional collaboration questions that met the ($p<.05$) threshold of significance, the highest mean scores were consistently reported by the three year training group and the lowest mean scores were reported by the group with four years of training.

Overall for the ANOVAs, the mean scores for questions regarding implementation of best practices ranged from 3.57 to 3.15. None of the implementation of best practices survey questions met the ($p<.05$) threshold for statistical significance.

Since multiple ANOVAs were conducted, a multivariate analysis of variance (MANOVA) was also used to strengthen the research methodology. The survey questions were grouped into the following clusters for the MANOVA: Job Satisfaction, Professional Collaboration, and Implementation of Best Practices. Through the Wilks' Lambda method of multivariate analysis of variance, the job satisfaction cluster was the only grouping of questions that resulted in $F(42,366)=1.996$, $p=.001$. After the job satisfaction cluster was identified as having significance, the univariate analysis of variance (ANOVA) was conducted for each question separately to determine which specific survey questions were significant. Of the twenty-one job satisfaction survey questions, three were identified as being significant:

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- Job Satisfaction Question 14: I have the materials and equipment that I need in order to do my work well which resulted in $F(2,203) = 6.508$, $p = .002$.
- Job Satisfaction Question 19: My coworkers are committed to doing quality work which resulted in $F(2,203) = 4.487$, $p = .012$.
- Job Satisfaction Question 20: My colleagues and I hold each other accountable resulted in $F(2,203) = 3.301$, $p = .039$.

Post hoc testing through the least squares difference method was conducted on the three job satisfaction survey questions 14, 19, and 20 to identify where significance was reported between which PLC training levels. The following are the results of this post hoc analysis:

- Job satisfaction question 14 regarded materials and equipment. The 3rd year PLC group reported higher perception levels than the 1st year group which resulted in a significance level of p=.001. The 3rd year PLC group also reported higher perception levels than the 4th year group which resulted in a significance level of p=.021. No significance was noted between the 1st and 4th year PLC groups.
- Job satisfaction question 19 regarded coworker commitment to quality work. The 1st year PLC group reported higher perception levels as compared to the 4th year PLC group which resulted in a significance level of p=.006. The 3rd year PLC reported higher perception levels than the 4th year PLC group which resulted in a significance level of .011. No significance was noted between the 1st and 3rd year PLC groups.
- Job satisfaction question 20 regarded holding colleagues accountable. The 1st year PLC group reported higher perception levels when compared to the 4th year

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PLC groups which resulted in a significance level of p=.011. No significance was noted between the 1st year and 3rd year PLC groups or between the 3rd year and 4th year PLC groups.

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CHAPTER 5

SUMMARY AND DISCUSSION

This chapter of the dissertation restates the problem and reviews the methodology used in this study. The remaining sections of the chapter summarize the results of this quantitative research project, discuss the results, share possible implications of the study, and provide recommendations for further research.

Statement of the Problem

The Professional Learning Community (PLC) model of continuous school improvement has become more popular in North America over the last few years. The PLC process provides a framework for professional collaboration, and implementation of best practices intended to lead to increased student learning. The foundation of PLCs is grounded in two premises of breaking down teacher isolation to promote professional collaboration and focusing on evidence of learning rather than teaching strategies. There are three corollary questions that PLCs ask themselves: What is it that we want our students to learn? How will we know when they have learned it? What will we do differently when they have not learned it or have already learned it? These questions guide the work of the Professional Learning Communities.

The increased interest in and popularity of the PLC initiative has coincided with ever-increasing accountability mandates from federal and state governments. Many districts have invested significant time and resources in providing professional development for staff members to learn about this framework for comprehensive school reform. In the subject district's state, the PLC initiative is one of only a few recognized initiatives for school improvement that receives resources in the form of state-organized professional development support. School districts in the state can apply through the Department of Elementary and

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Secondary Education to be a part of the PLC Project which provides three years of ongoing support and training for schools beginning the PLC process. This training protocol strictly follows the teachings of DuFour and Eaker regarding the Professional Learning Community model of school improvement.

The subject district has provided support and professional development for all schools within the district to learn more about Professional Learning Communities. It is the expectation of the subject district that all schools will participate in the PLC Project and will conduct themselves as PLCs. Due to the district's commitment to the PLC process, this research study was developed to assess the level of PLC development and its effect on the perceptions of job satisfaction, professional collaboration, and implementation of best practices. The following research questions were identified:

1. Do teachers in school communities that have had at least three years of direct involvement in the Professional Learning Communities Project report greater levels of job satisfaction than those in school communities that have less than one year of involvement in the project?
2. Do teachers in school communities that have had at least three years of direct involvement in the Professional Learning Communities Project report greater levels of professional collaboration than those in school communities that have less than one year of involvement in the project?
3. Do teachers in school communities that have had at least three years of direct involvement in the Professional Learning Communities Project report using specified practices, based on the "Critical Issues for Team Consideration," (DuFour et al., 2006,

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pp. 100-101) to greater degrees than do those in school communities that have less than one year of involvement in the project?

Review of Methodology

As explained in Chapter 3, this quantitative study used a between-groups design approach and an analysis of variance (ANOVA) was conducted to determine the effect of Professional Learning Community (PLC) training by number of years (i.e. 4 years, 3 years, or less than 1 year) on job satisfaction, professional collaboration, and implementation of best practices. The subject district did not have any schools in the second year of PLC training, so this group was omitted from the study. In December 2008, an email (Appendix A) was sent to 481 potential participants in the subject school district inviting them to complete an electronic questionnaire. In January 2009, a reminder email (Appendix B) was sent to the 481 potential participants requesting that they participate if they had not yet done so. The survey was open for responses during a four week period between the beginning of December 2008 and mid-January 2009. A total of 223 participants (46% of sample group) completed the survey.

The questionnaire (Appendix C) consisted of questions designed to assess perceptions of job satisfaction, professional collaboration, and implementation of best practices. The survey was developed by the researcher and was based the *Critical Issues for Team Consideration* (DuFour, et al., 2006, pp. 100-101). The survey questions were reviewed by educators for clarity, and a pilot was conducted to ensure that the data captured by the Survey Monkey system were accurate. Participants were invited to complete the electronic survey by accessing the survey through a web link. The responses to the survey were logged anonymously through the Survey Monkey system to maintain confidentiality.

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The participants selected their responses to the survey from the following choices: strongly disagree, disagree, agree, or strongly agree. The responses were then recoded from 1 (strongly disagree) to 4 (strongly agree). An ANOVA was conducted to determine the questions that produced significance when comparing between schools with varying levels of PLC training and experience. Participants were divided into groups based upon the experience level (4 years, 3 years, and less than 1 year) as defined by the number of years the school was involved in formal PLC training. For this study, the researcher used a statistical significance level of 95% ($p<.05$).

Additionally, the multivariate analysis of variance (MANOVA) was conducted to analyze the questions as groups based upon the groups of job satisfaction, professional collaboration, and implementation of best practices. The Wilks' Lambda statistic test was used to test whether there are differences between the means of groups of respondents with varying years of Professional Learning Community training. After conducting the Wilk's Lambda test, univariate analyses were conducted for each question in the clusters that were noted as significant ($p<.05$) on the MANOVA to identify the distinguishing variables that are individually affected by the years of experience in Professional Learning Communities. Finally, post hoc testing through the least squares difference method was conducted to determine specifically where the significance occurred between the PLC training groups.

Summary of the Results

Three hypotheses were developed to guide this study. The results of the study relative to each of these hypotheses will be discussed below.

Hypothesis #1 stated that professional staff working in schools that have three or four years of participation in the Professional Learning Communities (PLC) Project, will report higher

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levels of job satisfaction than professional staff working in school communities that have less than one year of involvement with the PLC Project. W. Edwards Deming, as well as DuFour and Eaker, emphasize the importance of developing a common purpose or shared vision among individuals working in the same organization. Thus, job satisfaction can be closely tied to the degree to which individuals believe that they are working to serve a common good:

> The *sine qua non* of a learning community is shared understandings and common values. What separates a learning community from an ordinary school is its collective commitment to guiding principles that articulate what the people in the school believe and what they seek to create. Furthermore, these guiding principles are not just articulated by those in positions of leadership; even more important, they are embedded in the hearts and minds of people throughout the world (DuFour and Eaker, 1998, p. 25).

Because educators who participate in the PLC training project spend a significant amount of time discussing and developing common mission, vision, values and goals that are designed to guide their work day-to-day, it was hypothesized that teachers with more experience in the PLC process would report higher levels of job satisfaction than those with less experience in the process.

Multiple ANOVAs were initially conducted for each of the job satisfaction survey questions. Overall, the mean scores for the questions regarding job satisfaction were relatively high, ranging from 2.79 to 3.73 on a 4-point scale. Of the 21 questions, the mean score for all three groups was 3.0 or above for 19 questions, suggesting generally high levels of job satisfaction overall.

Of the twenty-one questions designed to assess perceptions of job satisfaction, three met the threshold for statistical significance ($p<.05$) when multiple ANOVAs were conducted to analyze the mean scores among the PLC training groups. Of the questions meeting this threshold, the third year PLC training group ($M_{3years} = 3.23$, SD=.73) reported higher perception

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levels for the question regarding having the materials and equipment needed for the job as compared to the schools with four years of PLC experience (M_{4years} = 2.90, SD=.80) and the group of schools with less than one year of PLC training ($M_{<1year}$ = 2.79, SD=.70). The third year group (M_{3years} = 3.50, SD=.59) and the first year group ($M_{<1year}$ = 3.50, SD=.56) had equal mean scores for the question regarding co-worker commitment to quality work which was higher than the fourth year PLC schools (M_{4years} = 3.21, SD=.67). The first year group ($M_{<1year}$ = 3.29, SD=.64) reported higher perception levels for the question regarding holding one another accountable than the third year PLC schools (M_{3years} = 3.18, SD=.71) and the schools with four years of PLC experience (M_{4years} = 3.00, SD=.63).

Additionally, a multivariate analysis of variance (MANOVA) was conducted to analyze clusters of survey questions by category: job satisfaction, professional collaboration, and implementation of best practices. The Wilks' Lambda statistic test was used to test whether there are differences between the means of groups of respondents with varying years of experience with the PLC Project. When this analysis was conducted, the job satisfaction cluster met the threshold of statistical significance ($p<.05$). The Job Satisfaction cluster resulted in $F(42,366)=1.996$, $p<.001$.

Once the job satisfaction cluster of survey questions was noted as meeting the level of significance ($p<.05$) through the MANOVA analysis, the univariate analysis of variance (ANOVA) was conducted on each job satisfaction survey question to see which of the survey questions were individually affected by the years of Professional Learning Community training and experience. Of the twenty-one job satisfaction survey questions, the following three questions met the statistical significance level ($p<.05$):

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- Job Satisfaction Question 14: I have the materials and equipment that I need in order to do my work well resulted in $F(2,203)=6.508$, $p = .002$.
- Job Satisfaction Question 19: My coworkers are committed to doing quality work resulted in $F(2,203) = 4.487$, $p = .012$.
- Job Satisfaction Question 20: My colleagues and I hold each other accountable resulted in $F(2,203)= 3.301$, $p = .039$.

Post hoc testing through the least squares difference method was used to determine specifically between which groups of PLC training the levels of significance occurred for the following job satisfaction questions:

- A post hoc analysis of the job satisfaction question 14 regarding materials and equipment was conducted. The 3rd year PLC group reported higher perception levels than the 1st year group which resulted in a significance level of p=.001. The 3rd year PLC group also reported higher perception levels than the 4th year group which resulted in a significance level of p=.021. No significance was noted between the 1st and 4th year PLC groups.
- A post hoc analysis of the job satisfaction question 19 regarding coworker commitment to quality work was also conducted. The 1st year PLC group had higher perception levels than the 4th year PLC group which resulted in a significance level of p=.006. The 3rd year PLC group reported higher perception levels than the 4th year PLC group which resulted in a significance level of .011. No significance was noted between the 1st and 3rd year PLC groups.
- A post hoc analysis of the job satisfaction question 20 regarding holding colleagues accountable was also conducted. The 1st year PLC group reported

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higher perception levels when compared to the 4th year PLC groups which resulted in a significance level of p=.011. No significance was noted between the 1st year and 3rd year PLC groups or between the 3rd year and 4th year PLC groups.

Although significance was found among groups on three of the questions in this portion of the survey through both the multiple ANOVAs and the MANOVA and subsequent analysis, no definite trends emerged with respect to the number of years of participation in the PLC project, therefore Hypothesis #1 is not supported.

Hypothesis #2 stated that professional staff working in schools that have three or four years of participation in the Professional Learning Communities (PLC) Project, will report higher levels of professional collaboration than professional staff working in school communities that have less than one year of involvement with the PLC Project.

The issue of teacher isolation in traditional practice has been the focus of much of the literature regarding improving the quality of schools. "This isolation was so complete that teachers quickly learned that they could teach whatever they liked (or did not like) however they liked." (Berliner, 1984; Marzano, Marzano & Pickering, 2003). The PLC Model described by DuFour and Eaker is specifically designed to break down this legacy of isolation. Professional collaboration, as Deming correctly pointed out, is critical to keeping the entire organization moving in the same direction and it is at the heart of the PLC model of school improvement:

> *Break down barriers between staff areas.* Often staff areas, departments, units, whatever, are competing with each other or have goals that conflict. They do not work as a team so they can solve or foresee problems. Worse, one department's goals may cause trouble for another (Walton, 1986, p. 24).

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Because the PLC Project focuses so much attention on teaching teachers how to work effectively in collaborative teams, it was hypothesized that those teachers with more training and experience in the process would report higher levels of professional collaboration than those with less training and experience.

Multiple ANOVAs were initially conducted for each of the professional collaboration survey questions. The survey included seven questions related to perceptions of professional collaboration. The mean scores in this portion of the survey ranged from 2.78 to 3.49, with four questions resulting in mean scores of 3.0 or above. Of the seven questions designed to assess perceptions of professional collaboration, three met the threshold for statistical significance ($p<.05$) when multiple ANOVAs were conducted to analyze the mean scores among the PLC training groups. Of the three questions that were statistically significant when analyzing the results among groups, the PLC training group with three years of experience consistently reported the highest mean scores while the fourth year PLC training group consistently reported the lowest mean scores.

Additionally, a multivariate analysis of variance (MANOVA) was conducted to analyze clusters of survey questions by category: job satisfaction, professional collaboration, and implementation of best practices. The Wilks' Lambda statistic test was used to test whether there are differences between the means of groups of respondents with varying years of experience with the PLC Project. When this analysis was conducted, the professional collaboration cluster did not met the threshold of statistical significance ($p<.05$).

When reviewing the ANOVA results for each professional collaboration question, patterns seemed to emerge. A greater percentage of questions resulted in significance among the groups, and the third year PLC training group consistently had the highest mean scores for

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all of these questions. The fourth year PLC training group consistently reported the lowest mean score for all of these questions. While these results do not support Hypothesis #2, additional study may be appropriate to better understand the factors that contributed to these results.

Hypothesis #3 stated that professional staff working in schools that have three or four years of participation in the Professional Learning Communities (PLC) Project, will report higher levels of implementation of best practices than professional staff working in school communities that have less than one year of involvement with the PLC Project. The PLC Project is founded on teaching educators to focus their day-to-day work around the three essential questions developed by DuFour and Eaker:

- What do we want students to learn?
- How will we know if they have learned it?
- What are we going to do if they do not learn it? (Eaker et al., 2002, p. 41).

With these questions forming the foundation of the PLC process, educators who complete training in the PLC Project are expected to learn to identify essential common outcomes that all students are expected to learn, to understand how to develop and effectively use quality assessment instruments and procedures, and to develop a structured system of interventions to provide the necessary time and support for students who do not reach expected achievement levels and/or require additional challenges to meet their individual learning needs. Because these best practices are emphasized throughout the PLC Project training, it was hypothesized that teachers who have been involved with the project for the longest period of time, i.e. three to four years, would have developed the greatest expertise in implementing these practices.

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Multiple ANOVAs were initially conducted for each of the implementation of best practices survey questions. There were seventeen questions regarding implementation of best practices. Mean scores on these questions ranged from 3.11 to 3.57, indicating relatively strong perceptions of professional collaboration overall. None of the questions resulted in variances among groups that met the threshold of statistical significance ($p<.05$) on this portion of the survey.

Additionally, a multivariate analysis of variance (MANOVA) was conducted to analyze clusters of survey questions by category: job satisfaction, professional collaboration, and implementation of best practices. The Wilks' Lambda statistic test was used to test whether there are differences between the means of groups of respondents with varying years of experience with the PLC Project. When this analysis was conducted, implementation of best practices cluster did not met the threshold of statistical significance ($p<.05$). The results from this portion of the survey do not support Hypothesis #3.

Discussion of the Results

On the basis of this study alone, there is little evidence that the length of time a school has been formally studying the Professional Learning Communities model of school improvement has a positive impact on the perceptions of certified staff members on job satisfaction, professional collaboration, and implementation of best practices. When reviewing the results from the multiple ANOVAs, generally there is little variation among groups with different levels of PLC training in their responses to the survey questions. Overall, the perceptions of job satisfaction, professional collaboration, and implementation of best practices are strong among all groups with most mean scores above 3.00. The job satisfaction survey responses had a mean score range of 2.79 to 3.73 for all the job satisfaction questions. The

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professional collaboration survey responses had a mean score range of 2.78 to 3.49 for all the professional collaboration questions. The implementation of best practices survey responses had a mean score range of 3.11 to 3.57 for all the implementation of best practices questions.

While three of the twenty-one job satisfaction survey questions were noted as having significance among the groups from the multiple ANOVAs, and the category of job satisfaction resulted in significance through the MANOVA test, no conclusive pattern of variance on the job satisfaction portion of the survey was identified. The third year PLC group and the first year PLC group both had the highest mean score on two of the three questions. The fourth year PLC school's mean scores when compared to the other groups were consistently in the bottom two mean scores on all three questions.

When reviewing the data from the multiple ANOVAs conducted for each of the professional collaboration survey questions, this portion resulted in a larger percentage of questions noted as significant ($p<.05$) among groups than did the other portions of the survey. On the professional collaboration questions that resulted in significance among groups ($p<.05$), a pattern emerged in which the group with three years of PLC training consistently reported the highest mean scores while the group with four years of training consistently reported the lowest mean scores. Although the mean scores for professional collaboration were generally high, it is concerning that the fourth year schools consistently reported the lowest mean scores on those questions in which significance ($p<.05$) among groups emerged. No significance was reported through the multivariate analysis of variance (MANOVA) for the cluster of professional collaboration questions as a whole.

When reviewing the fourth year PLC training schools, there has been a significant staff turn-over at one of the schools as a result of the district re-organization, retirements, and staff

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attrition. Due to the large change in personnel, this school is contemplating starting the PLC Project training again to re-train the entire staff. A need may exist to conduct a follow up study and develop a hypothesis in the future which considers and incorporates a staff turnover dimension. After all, if the staff community is disrupted, what effect does that have on the professional learning community?

No pattern of variance among groups emerged for the implementation of best practices portion of the survey neither through the multiple ANOVAs for each question nor through the MANOVA for the implementation of best practices questions as a whole. The mean scores for this section of the survey reported through the multiple ANOVAs were the highest of the three areas researched. The mean scores in this section ranged from 3.11 to 3.57. The mean score responses indicate that there is a high level of awareness and good perceptions of implementation of best practices in the various PLC training groups within the district.

It was somewhat surprising that no areas of significance emerged in this portion of the survey as the primary purpose of PLC training is to move the professional staff toward implementing best practice in an environment that is supported by professional collaboration and accountability within the team. District expectations and related district-provided professional development for staff members may have impacted the results of the questions designed to assess the perceptions of the implementation level of best practices. Further study may be needed in order to determine the degree to which district-level emphasis placed on implementing PLC best practices at all schools may have impacted the survey results.

Implications of this Study

The survey results may have been impacted by significant attrition and relocation due to major reconfiguration of district schools. Some survey respondents did not have access to the

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full measure of PLC training as did other staff members in third and fourth year PLC schools. Likewise, some staff members from advanced PLC schools who were relocated to schools that have had little or no PLC training may have indicated generally higher perceptions on the survey than did their counterparts. A follow-up study may be needed to ascertain staff perceptions of the impact of PLC training once the school faculties have had the opportunity to develop a stronger and more cohesive culture following the district re-organization.

A concerning pattern that emerged was that the fourth year PLC schools consistently reported the lowest mean scores on all questions with significance ($p<.05$) among groups on the collaboration portion of the survey. While these results may have been impacted by the district re-organization, it is important to remember that the third year schools, (that were subject to the many of the same issues of re-organization as the fourth year schools), consistently reported the highest levels of collaboration on the questions with significance ($p<.05$) among groups. Therefore, additional study needs to be conducted to identify the factors that seemed to create more optimal environments for collaboration in the third year schools as compared to the fourth year schools. Further study may be necessary to see if there is a plateau effect or innovation fatigue that occurs after a few years of PLC implementation. Do the participants begin to lose interest? Has the novelty worn off? Is there an implementation dip occurring or is there a need for sustained training, resources, and focus on this initiative beyond the third year of study? These results may indicate a need for ongoing support beyond the initial three-year training protocol as fourth year schools are no longer receiving formal support and training through the PLC Project. There may also be a need for acclimation and training of new teachers and other professional staff to the expectations of the PLC process.

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Recommendations for Further Study

This study focused on the level of school experience with formal PLC training and staff perceptions of job satisfaction, professional collaboration, and implementation of best practices. The results of this study led to the following recommendations:

1. Conduct qualitative interviews and focus groups to gather further details regarding the factors leading to the relatively lower mean scores of the fourth year PLC training group. Is this the result of an implementation dip or possibly the elimination of formal training and support? Is it possible that there is a sort of "innovation fatigue" that sets in when the novelty of this (or any other school reform) wears off? Could the 4th year group have hit a "plateau"?
2. Conduct qualitative interviews and focus groups to gather further information regarding the factors present within the third year PLC training group which supported their more favorable ratings on the survey. This is important to ascertain which factors are present that help them be the group with the most favorable responses.
3. Conduct qualitative interviews and focus groups to gather further information regarding the responses for implementation of best practices. The subject district has focused on the implementation of best practices and the survey indicates that all PLC groups have positive responses to the survey questions. What factors are in place to ensure that the implementation of best practices are truly impacting student learning? Are there practices that are more effective than others?
4. Conduct qualitative interviews and focus groups to gather further information regarding perceptions of job satisfaction, professional collaboration, and

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implementation of best practices by veteran and novice teacher groups to identify any differences. There has been considerable staff turnover in the subject district and approximately half of the staff are in their first years of teaching. Many teacher preparation programs are now focusing on Professional Learning Communities and the implementation of best practices. It would be interesting to see if this has an impact on the responses from the novice teachers as compared with the veteran teachers. This would also allow for the opportunity to identify other factors that may or may not cause a difference in perception between the novice and veteran teachers.

5. Conduct a quantitative analysis of the impact of PLC training on student achievement. The purpose of schools is to educate children. The PLC process is designed to induce school improvement. As schools and districts continue to invest considerable resources into the PLC process, it is imperative that a study of its effects on student achievement is conducted.
6. Replicate the study using questionnaire responses by school level (i.e. elementary, middle school, and high school) as opposed to years in the PLC process. Increased opposition to the PLC process and other initiatives seem to occur as one looks from elementary to secondary schools. It seems that teachers in secondary schools tend to be more isolated in their approach to teaching while elementary teachers tend to be more collaborative in nature. Are there specific factors that may be present that cause differences in perceptions of job satisfaction, professional collaboration, and implementation of best practices between elementary and secondary schools?

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7. Replicate this study using questionnaire responses by the participant's actual years of involvement with PLCs rather than the school's formal affiliation with PLC's. This specific study analyzed the results of schools with certain numbers of years participating in professional learning community training. As staff members change within those schools, individual levels of PLC competency begin to vary. Additional information may be obtained when replicating this study on the individual training level rather than on the school training level.
8. Replicate this study in two years to assess whether or not further training in PLC impacts over time the perceptions of job satisfaction, professional collaboration, and implementation of best practices. Due to the subject district's re-organization and increased staff turnover, it is important to revisit the data once the school communities have strengthened and become more cohesive.
9. Replicate the study to measure the extent to which the "community" is maintained over time or affected by staff turnover or leadership transitions. As staff members change or leaders move on to new opportunities, what impact does that have on the sustainability of the Professional Learning Community or other school reform initiatives?
10. Conduct a similar study in a district with many "hard to staff" schools to gain insights on benchmarks to better compare this study. The subject district had very positive responses in regards to perceptions of job satisfaction, professional collaboration, and implementation of best practices. Conducting a similar survey in another district that may be more troubled or difficult to staff would be an

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opportunity to begin to develop benchmarks that can be used to further analyze and understand the data in this specific study.

Concluding Remarks

The subject school district has dedicated a number of years and very considerable resources to the effort to train teachers and administrators in the Professional Learning Communities process. This researcher is convinced that the major tenets of the PLC process, if implemented fully and faithfully, will result in increased professional collaboration, increased implementation of best practices, and ultimately, increased student learning. This study has provided an initial glimpse into the impact that this effort has had on the professional staff in the subject district to date. Recognizing the noteworthy issues that may have impacted some of the results of this study, particularly the recent re-organization that occurred within the district, the survey did provide some important insights into the health of the PLC process overall. The relatively high mean scores for the survey in each of the three major categories seem to indicate that the district is moving in a positive direction. Continued focus on supporting and nurturing the PLC process remains a major district commitment. This researcher intends to conduct further study within the district to identify factors which may have contributed to areas of strength and weakness as indicated by the survey. The researcher also plans to repeat this survey within two years to ascertain the level of growth that may occur.

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APPENDIX A

EMAIL SENT TO POTENTIAL SURVEY PARTICIPANTS

-----Original Message-----
From: Tormala, Danielle Sullivan (UMSL-Student)
Sent: Mon 12/15/2008 5:17 PM
Subject: Dissertation Research

You are invited to participate in a dissertation research study approved by the University of Missouri - St. Louis Institutional Review Board. The purpose of this research is to determine the effect between the involvement in Professional Learning Communities and increased levels of job satisfaction, professional collaboration, and implementation of best practices.

This study is conducted by Danielle Tormala, doctoral candidate at the University of Missouri - St. Louis. Your participation will involve completing an online survey that will take approximately 5 - 10 minutes to complete.

Please click on the link listed below to access the survey.

http://www.surveymonkey.com/s.aspx?sm=CriJiE4II06Kk6jEynF_2bMg_3d_3d

All responses will remain confidential.

Thank you for your willingness to participate in this research.

Danielle Tormala

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APPENDIX B

REMINDER EMAIL SENT TO POTENTIAL SURVEY PARTICIPANTS

-----Original Message-----
From: Tormala, Danielle Sullivan (UMSL-Student)
Sent: Sun 01/04/09 10:23 PM
Subject: Dissertation Research

I'm in the home stretch of collecting data for my dissertation project. If you have already completed the survey, THANK YOU and please disregard this email. If you have a few minutes and would be willing to take this survey, I would really appreciate it.

Thanks again and have a great day!
Danielle

-----Original Message-----
From: Tormala, Danielle Sullivan (UMSL-Student)
Sent: Tue 12/16/2008 3:24 PM
Subject: FW: Dissertation Research - Hardin

You are invited to participate in a dissertation research study approved by the University of Missouri - St. Louis Institutional Review Board. The purpose of this research is to determine the effect between the involvement in Professional Learning Communities and increased levels of job satisfaction, professional collaboration, and implementation of best practices.

This study is conducted by Danielle Tormala, doctoral candidate at the University of Missouri - St. Louis. Your participation will involve completing an online survey that will take approximately 5 - 10 minutes to complete.

Please click on the link listed below to access the survey.

http://www.surveymonkey.com/s.aspx?sm=CriJiE4II06Kk6jEynF_2bMg_3d_3d

All responses will remain confidential.

Thank you for your willingness to participate in this research.

Danielle Tormala

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APPENDIX C

SURVEY TO EVALUATE JOB SATISFACTION, PROFESSIONAL COLLABORATION, AND IMPLEMENTATION OF BEST PRACTICES

ADMINISTERED ONLINE VIA SURVEY MONKEY

Informed Consent for Participation Portion of Survey:

Dear Research Participants,

You are invited to participate in a research study conducted by Danielle S. Tormala and Dr. Kathleen Sullivan Brown from the University of Missouri – St. Louis. The purpose of this research is to determine the effect between the involvement in Professional Learning Communities and increased levels of job satisfaction, professional collaboration, and implementation of best practices.

Your participation will involve voluntary completion of an online survey. The survey should take approximately 5 – 10 minutes to complete. Data will not be linked to identifying information and participants will be anonymous.

Approximately 400 participants may be involved in this research.

There are no anticipated risks associated with this research. There are no direct benefits for you participating in this study. However, your participation will contribute to the knowledge about Professional Learning Communities and may help educational leadership and the educational society.

Your participation is voluntary and you may choose not to participate in this research study or to withdraw your consent at any time. You may choose not to answer any questions that you do not want to answer. You will NOT be penalized in any way should you choose not to participate or to withdraw.

The survey is anonymous and your privacy will be protected. As part of this effort, your identity will not be revealed in any publication or presentation that may result from this study. In rare instances, a researcher's study must undergo an audit or program evaluation by an oversight agency (such as the Office for Human Research Protection). That agency would be required to maintain the confidentiality of your data.

If you have any questions or concerns regarding this study, or if any problems arise, you may call the Investigator, Danielle S. Tormala at 314-401-4146 or the Faculty Advisor, Dr. Kathleen Sullivan Brown at 314-516-5788. You may also ask questions or state concerns regarding your rights as a research participant to the Office of Research Administration, at 314-516-5897.

You may wish to print a copy of this disclosure form for your records.

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By continuing with this survey, I am indicating that I have read the above statement and have been given the opportunity to express concerns by contacting the investigator. Furthermore, I am indicating that I understand the purpose of the study, as well as the potential benefits and risk that are involved. I am, additionally, giving my permission to participate in the research described above.

○ Continue with Survey

Background / Demographic Portion of Survey:

- I am a:
  - Teacher, Counselor, Librarian, Therapist, etc.
  - Administrator

- I work at (if traveling, please list your home school):
  - Choose from a list of sample district schools

- I have been an educator for:
  - 0 – 2 years
  - 3 – 5 years
  - 6 – 10 years
  - 11 – 15 years
  - 16 – 20 years
  - more than 20 years

- I have been employed in the District for:
  - 0 – 2 years
  - 3 – 5 years
  - 6 – 10 years
  - 11 – 15 years
  - 16 – 20 years
  - more than 20 years

- I have been employed in my current building for:
  - 0 – 2 years
  - 3 – 5 years
  - 6 – 10 years
  - 11 – 15 years
  - 16 – 20 years
  - more than 20 years

- I am experienced and have been trained in Professional Learning Communities:
  - No Experience / Training
  - Very Little Experience / Training
  - Some Experience / Training
  - Much Experience / Training

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The following survey questions have the following responses:
□ Strongly disagree □ Disagree □ Agree □ Strongly agree

Job Satisfaction Portion of Survey:

- I am committed to a long term career in the District.
- My work gives me a feeling of accomplishment.
- I have a good relationship with:
    - My peers.
    - The administration in my school.
- I look forward to going to work on Monday morning.
- I feel positive most of the time when I am working.
- I have energy at the end of each work day to:
    - Attend to the people I care about.
    - Engage in personal interests.
- Most interactions at work are positive.
- I have good friends at work.
- I feel:
    - Valued at work.
    - Recognized at work.
    - Free to do things the way I like at work.
    - Involved in decisions that affect our organizational community.
    - Informed about what is going on.
- Work is a real plus in my life.
- I am engaged in meaningful work.
- My values fit with the organizational values.
- I am aligned with the organizational mission.
- I trust our leadership.
- I respect the work of my peers.
- I know what is expected of me at work.
- I have the materials and equipment that I need in order to do my work well.
- I have the opportunity to do what I do best every day at work.
- My administrators care about me as a person.
- I know someone at work who encourages my development.
- My opinions count.
- My coworkers are committed to doing quality work.
- My colleagues and I hold each other accountable for student results.
- My work with my PLC team has improved my effectiveness.

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Professional Collaboration Portion of Survey:

- My team has:
  - Identified team norms to guide us in working together.
  - Established strategic, measurable, attainable, results-oriented, and time bound (SMART) goals to improve student achievement.
- As a team, we:
  - are working interdependently to attain the established SMART goals
  - Analyze student achievement data to establish SMART goals.
  - Formally evaluate our adherence to team norms.
  - Formally evaluate our effectiveness at least twice a year.
  - Work well as a professional learning community.

Implementation of Best Practices Portion of Survey

- As a team, we have created essential learning outcomes that are aligned with the:
  - District standards.
  - High stakes assessments required of our students.
- Each member of my team is clear on the essential learning that students will acquire as a result of each unit within the grade level/course of study.
- My team has:
  - Identified course content that can be eliminated to allow us more time to devote to the essential learning outcomes.
  - Agreed on the best way to sequence the content of the course.
  - Established pacing guides to help students achieve the intended essential learning.
  - Identified the prerequisite skills students need to have in order to master the essential learning of each unit of instruction.
  - Established the proficiency standard we want each student to achieve on each concept.
  - Taught students the criteria we have established to judge the quality of student work.
- As a team, we:
  - Have created instruments to assess if students have the prerequisite skills.
  - Have developed frequent common formative assessments that help us determine each student's mastery of essential learning.
  - Have agreed on the criteria we will use in judging the quality of student work.
  - Have agreed that the criteria for assessment we have agreed on are related to the essential learning of our course.
  - Practice applying the agreed upon criteria to ensure consistency.
  - Assess our students' understanding of the concepts based on our previously established proficiency standards.
  - Have developed a common summative assessment.
  - Have developed common summative assessments that help us assess the strengths and weaknesses of our program.

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APPENDIX D

RESULTS OF DEMOGRAPHIC SURVEY QUESTIONS

Table D.1: PLC Group Participants

Number of Years in PLC Training	Eligible Participant Pool (n)	% of Total Part. Pool	Number of Respondents (n)	% of Group Part. Pool	Number of Teachers or Certified Staff (n)	% of Teachers in Group Part. Pool	Number of Administrators (n)	% of Admin. In Group Part. Pool
< 1 year	227	47%	108	48%	98	91%	10	9%
3 years	121	25%	63	52%	59	94%	4	6%
4 years	133	28%	52	39%	42	90%	5	10%
Total	481	100%	223	46%	204	91%	19	9%

Table D.2: Experience or Training in Professional Learning Communities

Experience / Training	Response Count	Percentage of Total Participants
No Experience / Training	16	7%
Very Little Experience / Training	37	17%
Some Experience / Training	111	50%
Much Experience / Training	59	26%
Total	223	100%

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Table D.3: Number of Years as an Educator

Number of Years as an Educator	Response Count	Percentage of Total Participants
0 – 2 Years	14	6%
3 – 5 Years	32	14%
6 – 10 Years	46	21%
11 – 15 Years	43	19%
16 – 20 Years	26	12%
More than 20 Years	62	28%
Total	223	100%

Table D.4: Years Employed in the District

Number of Years Employed in the District	Response Count	Percentage of Total Participants
0 – 2 Years	46	21%
3 – 5 Years	32	14%
6 – 10 Years	53	24%
11 – 15 Years	35	16%
16 – 20 Years	23	10%
More than 20 Years	34	15%
Total	223	100%

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Table D.5: Years Employed in Current Building

Number of Years Employed in the District	Response Count	Percentage of Total Participants
0 – 2 Years	90	40%
3 – 5 Years	37	17%
6 – 10 Years	34	15%
11 – 15 Years	29	13%
16 – 20 Years	16	7%
More than 20 Years	17	8%
Total	223	100%

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APPENDIX E

ANOVA RESULTS OF THE JOB SATISFACTION, PROFESSIONAL COLLABORATION, AND IMPLEMENTATION OF BEST PRACTICES SURVEY QUESTIONS

Table E.1: Results of the Job Satisfaction Survey Questions

	Number of Years in PLC	N	Mean	Std. Deviation	Std. Error	95% Confidence Interval for Mean		Min.	Max.
						Lower	Upper		
JS1 I am committed to a long term career in the District.	< 1	94	3.49	0.81	0.08	3.32	3.66	1	4
	3	62	3.48	0.95	0.12	3.24	3.73	1	4
	4	52	3.50	0.87	0.12	3.26	3.74	1	4
	Total	208	3.49	0.87	0.06	3.37	3.61	1	4
JS2 My work gives me a feeling of accomplishment.	< 1	94	3.71	0.58	0.06	3.59	3.83	1	4
	3	62	3.45	0.88	0.11	3.23	3.68	1	4
	4	52	3.65	0.59	0.08	3.49	3.82	1	4
	Total	208	3.62	0.69	0.05	3.53	3.71	1	4
JS3 I look forward to going to work on Monday morning.	< 1	94	3.32	0.68	0.07	3.18	3.46	1	4
	3	62	3.27	0.77	0.10	3.08	3.47	1	4
	4	52	3.37	0.53	0.07	3.22	3.51	2	4
	Total	208	3.32	0.67	0.05	3.23	3.41	1	4

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Table E.1: Results of the Job Satisfaction Survey Questions, continued

	Number of Years in PLC	N	Mean	Std. Deviation	Std. Error	95% Confidence Interval for Mean		Min.	Max.
						Lower	Upper		
JS4 I feel positive most of the time when I am working.	< 1	94	3.45	0.63	0.07	3.32	3.58	1	4
	3	62	3.39	0.73	0.09	3.20	3.57	1	4
	4	52	3.42	0.57	0.08	3.26	3.58	2	4
	Total	208	3.42	0.65	0.04	3.33	3.51	1	4
JS5 Most interactions at work are positive.	< 1	94	3.44	0.58	0.06	3.32	3.55	2	4
	3	62	3.34	0.54	0.07	3.20	3.48	2	4
	4	52	3.27	0.45	0.06	3.14	3.39	3	4
	Total	208	3.37	0.54	0.04	3.29	3.44	2	4
JS6 I have good friends at work.	< 1	94	3.39	0.69	0.07	3.25	3.54	1	4
	3	62	3.35	0.58	0.07	3.21	3.50	2	4
	4	52	3.38	0.66	0.09	3.20	3.57	2	4
	Total	208	3.38	0.65	0.04	3.29	3.47	1	4
JS7 Work is a real plus in my life.	< 1	94	3.50	0.65	0.07	3.37	3.63	1	4
	3	62	3.35	0.75	0.10	3.16	3.54	1	4
	4	52	3.54	0.54	0.08	3.39	3.69	3	4
	Total	208	3.47	0.66	0.05	3.38	3.56	1	4
JS8 I am engaged in meaningful work.	< 1	92	3.73	0.45	0.05	3.64	3.82	3	4
	3	62	3.63	0.55	0.07	3.49	3.77	2	4
	4	52	3.56	0.50	0.07	3.42	3.70	3	4
	Total	206	3.66	0.50	0.03	3.59	3.72	2	4

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Table E.1: Results of the Job Satisfaction Survey Questions, continued

	Number of Years in PLC	N	Mean	Std. Deviation	Std. Error	95% Confidence Interval for Mean		Min.	Max.
						Lower	Upper		
JS9 My values fit with the organizational values.	< 1	92	3.45	0.64	0.07	3.31	3.58	1	4
	3	62	3.44	0.76	0.10	3.24	3.63	1	4
	4	52	3.40	0.53	0.07	3.26	3.55	2	4
	Total	206	3.43	0.65	0.05	3.34	3.52	1	4
JS10 I am aligned with the organizational mission.	< 1	92	3.50	0.62	0.06	3.37	3.63	1	4
	3	62	3.40	0.73	0.09	3.22	3.59	1	4
	4	52	3.52	0.54	0.08	3.37	3.67	2	4
	Total	206	3.48	0.64	0.04	3.39	3.56	1	4
JS11 I trust our leadership.	< 1	92	3.17	0.87	0.09	2.99	3.35	1	4
	3	62	3.11	0.85	0.11	2.90	3.33	1	4
	4	52	3.15	0.70	0.10	2.96	3.35	1	4
	Total	206	3.15	0.82	0.06	3.04	3.26	1	4
JS12 I respect the work of my peers.	< 1	92	3.58	0.56	0.06	3.46	3.69	2	4
	3	62	3.55	0.56	0.07	3.41	3.69	2	4
	4	52	3.44	0.50	0.07	3.30	3.58	3	4
	Total	206	3.53	0.55	0.04	3.46	3.61	2	4
JS13 I know what is expected of me at work.	< 1	92	3.33	0.73	0.08	3.18	3.48	1	4
	3	62	3.52	0.62	0.08	3.36	3.67	2	4
	4	52	3.37	0.56	0.08	3.21	3.52	2	4
	Total	206	3.39	0.66	0.05	3.30	3.48	1	4

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Table E.1: Results of the Job Satisfaction Survey Questions, continued

	Number of Years in PLC	N	Mean	Std. Deviation	Std. Error	95% Confidence Interval for Mean		Min.	Max.
						Lower	Upper		
JS14 I have the materials and equipment that I need in order to do my work well.	< 1	92	2.79	0.70	0.07	2.65	2.94	1	4
	3	62	3.23	0.73	0.09	3.04	3.41	1	4
	4	52	2.90	0.80	0.11	2.68	3.13	1	4
	Total	206	2.95	0.76	0.05	2.85	3.06	1	4
JS15 I have the opportunity to do what I do best every day at work.	< 1	92	3.20	0.73	0.08	3.04	3.35	2	4
	3	62	3.34	0.75	0.09	3.15	3.53	1	4
	4	52	3.27	0.69	0.10	3.08	3.46	2	4
	Total	206	3.26	0.72	0.05	3.16	3.36	1	4
JS16 My administrators care about me as a person.	< 1	92	3.21	0.81	0.08	3.04	3.37	1	4
	3	62	3.23	0.78	0.10	3.03	3.42	1	4
	4	52	3.29	0.78	0.11	3.07	3.50	1	4
	Total	206	3.23	0.79	0.05	3.12	3.34	1	4
JS17 I know someone at work who encourages my development.	< 1	92	3.47	0.64	0.07	3.34	3.60	2	4
	3	62	3.45	0.64	0.08	3.29	3.62	2	4
	4	52	3.38	0.72	0.10	3.18	3.58	2	4
	Total	206	3.44	0.66	0.05	3.35	3.53	2	4

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Table E.1: Results of the Job Satisfaction Survey Questions, continued

	Number of Years in PLC	N	Mean	Std. Deviation	Std. Error	95% Confidence Interval for Mean		Min.	Max.
						Lower	Upper		
JS18 My opinions count.	< 1	92	3.14	0.81	0.08	2.97	3.31	1	4
	3	62	3.00	0.77	0.10	2.80	3.20	1	4
	4	52	3.17	0.79	0.11	2.95	3.39	1	4
	Total	206	3.11	0.79	0.05	3.00	3.22	1	4
JS19 My coworkers are committed to doing quality work.	< 1	92	3.50	0.56	0.06	3.38	3.62	2	4
	3	62	3.50	0.59	0.08	3.35	3.65	2	4
	4	52	3.21	0.67	0.09	3.03	3.40	1	4
	Total	206	3.43	0.61	0.04	3.34	3.51	1	4
JS20 My colleagues and I hold each other accountable.	< 1	92	3.29	0.64	0.07	3.16	3.43	2	4
	3	62	3.18	0.71	0.09	3.00	3.36	1	4
	4	52	3.00	0.63	0.09	2.83	3.17	2	4
	Total	206	3.18	0.67	0.05	3.09	3.28	1	4
JS21 My work with my PLC team has improved my effectiveness.	< 1	92	2.98	0.93	0.10	2.79	3.17	1	4
	3	62	3.19	0.94	0.12	2.96	3.43	1	4
	4	52	2.98	0.75	0.10	2.77	3.19	1	4
	Total	206	3.04	0.89	0.06	2.92	3.17	1	4

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TABLE E.2: ANOVA Results for the Job Satisfaction Survey Questions

		Sum of Squares	df	Mean Square	F	Sig.	Is the difference significant
JS1 I am committed to a long term career in the District.	Between Groups	0.01	2	0.004	0.005	0.995	No
	Within Groups	155.97	205	0.761			
	Total	155.98	207				
JS2 My work gives me a feeling of accomplishment.	Between Groups	2.63	2	1.313	2.794	0.064	No
	Within Groups	96.37	205	0.470			
	Total	99.00	207				
JS3 I look forward to going to work on Monday morning.	Between Groups	0.24	2	0.118	0.260	0.771	No
	Within Groups	92.82	205	0.453			
	Total	93.06	207				
JS4 I feel positive most of the time when I am working.	Between Groups	0.13	2	0.067	0.158	0.854	No
	Within Groups	86.64	205	0.423			
	Total	86.77	207				
JS5 Most interactions at work are positive.	Between Groups	1.00	2	0.498	1.723	0.181	No
	Within Groups	59.23	205	0.289			
	Total	60.23	207				
JS6 I have good friends at work.	Between Groups	0.06	2	0.029	0.068	0.934	No
	Within Groups	86.94	205	0.424			
	Total	87.00	207				

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TABLE E.2: ANOVA Results for the Job Satisfaction Survey Questions, continued

		Sum of Squares	df	Mean Square	F	Sig.	Is the difference significant
JS7 Work is a real plus in my life.	Between Groups	1.15	2	0.574	1.328	0.267	No
	Within Groups	88.62	205	0.432			
	Total	89.76	207				
JS8 I am engaged in meaningful work.	Between Groups	1.03	2	0.514	2.108	0.124	No
	Within Groups	49.50	203	0.244			
	Total	50.53	205				
JS9 My values fit with the organizational values.	Between Groups	0.06	2	0.030	0.069	0.933	No
	Within Groups	86.49	203	0.426			
	Total	86.55	205				
JS10 I am aligned with the organizational mission.	Between Groups	0.48	2	0.239	0.586	0.558	No
	Within Groups	82.90	203	0.408			
	Total	83.38	205				
JS11 I trust our leadership.	Between Groups	0.14	2	0.069	0.102	0.903	No
	Within Groups	138.20	203	0.681			
	Total	138.33	205				
JS12 I respect the work of my peers.	Between Groups	0.61	2	0.306	1.026	0.360	No
	Within Groups	60.65	203	0.299			
	Total	61.26	205				

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TABLE E.2: ANOVA Results for the Job Satisfaction Survey Questions, continued

		Sum of Squares	df	Mean Square	F	Sig.	Is the difference significant
JS13 I know what is expected of me at work.	Between Groups	1.39	2	0.696	1.609	0.203	No
	Within Groups	87.76	203	0.432			
	Total	89.15	205				
JS14 I have the materials and equipment that I need in order to do my work well.	Between Groups	7.08	2	3.540	6.508	0.002	Yes
	Within Groups	110.43	203	0.544			
	Total	117.51	205				
JS15 I have the opportunity to do what I do best every day at work.	Between Groups	0.77	2	0.384	0.731	0.483	No
	Within Groups	106.60	203	0.525			
	Total	107.36	205				
JS16 My administrators care about me as a person.	Between Groups	0.23	2	0.114	0.183	0.833	No
	Within Groups	126.59	203	0.624			
	Total	126.82	205				
JS17 I know someone at work who encourages my development.	Between Groups	0.24	2	0.118	0.271	0.763	No
	Within Groups	88.56	203	0.436			
	Total	88.80	205				

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TABLE E.2: ANOVA Results for the Job Satisfaction Survey Questions, continued

		Sum of Squares	df	Mean Square	F	Sig.	Is the difference significant
JS18 My opinions count.	Between Groups	1.05	2	0.523	0.838	0.434	No
	Within Groups	126.61	203	0.624			
	Total	127.65	205				
JS19 My coworkers are committed to doing quality work.	Between Groups	3.23	2	1.617	4.487	0.012	Yes
	Within Groups	73.17	203	0.360			
	Total	76.41	205				
JS20 My colleagues and I hold each other accountable.	Between Groups	2.87	2	1.433	3.301	0.039	Yes
	Within Groups	88.12	203	0.434			
	Total	90.99	205				
JS21 My work with my PLC team has improved my effectiveness.	Between Groups	1.99	2	0.996	1.259	0.286	No
	Within Groups	160.61	203	0.791			
	Total	162.61	205				

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TABLE E.3: Results of the Professional Collaboration Survey Questions

	Number of years in PLC	N	Mean	Std. Deviation	Std. Error	95% Confidence Interval for Mean		Min.	Max.
						Lower	Upper		
Collaboration01 My team has identified team norms to guide us in working together.	< 1	92	3.43	0.58	0.06	3.31	3.55	2	4
	3	61	3.44	0.67	0.09	3.27	3.61	1	4
	4	51	3.31	0.76	0.11	3.10	3.53	1	4
	Total	204	3.41	0.66	0.05	3.32	3.50	1	4
Collaboration02 My team has established strategic, measurable, attainable, results-oriented, and time bound (SMART) goals to improve student achievement.	< 1	92	3.41	0.74	0.08	3.26	3.57	1	4
	3	61	3.49	0.62	0.08	3.33	3.65	2	4
	4	51	3.24	0.76	0.11	3.02	3.45	1	4
	Total	204	3.39	0.72	0.05	3.29	3.49	1	4
Collaboration03 As a team, we are working interdependently to attain the established SMART goals.	< 1	92	3.35	0.73	0.08	3.20	3.50	2	4
	3	61	3.41	0.76	0.10	3.21	3.60	1	4
	4	51	3.02	0.73	0.10	2.81	3.23	1	4
	Total	204	3.28	0.75	0.05	3.18	3.39	1	4

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TABLE E.3: Results of the Professional Collaboration Survey Questions, continued

	Number of years in PLC	N	Mean	Std. Deviation	Std. Error	95% Confidence Interval for Mean		Min.	Max.
						Lower	Upper		
Collaboration04 As a team, we analyze student achievement data to establish SMART goals.	< 1	92	3.27	0.80	0.08	3.11	3.44	1	4
	3	60	3.22	0.80	0.10	3.01	3.42	1	4
	4	51	2.94	0.81	0.11	2.71	3.17	1	4
	Total	203	3.17	0.81	0.06	3.06	3.28	1	4
Collaboration05 As a team, we formally evaluate our adherence to team norms.	< 1	91	3.12	0.87	0.09	2.94	3.30	1	4
	3	61	3.16	0.86	0.11	2.94	3.38	1	4
	4	51	2.78	0.94	0.13	2.52	3.05	1	4
	Total	203	3.05	0.89	0.06	2.93	3.17	1	4
Collaboration06 As a team, we formally evaluate our effectiveness at least twice a year.	< 1	91	3.18	0.88	0.09	2.99	3.36	1	4
	3	60	3.25	0.86	0.11	3.03	3.47	1	4
	4	51	2.80	0.98	0.14	2.53	3.08	1	4
	Total	202	3.10	0.91	0.06	2.98	3.23	1	4
Collaboration07 As a team, we work well as a professional learning community.	< 1	90	3.38	0.71	0.08	3.23	3.53	1	4
	3	61	3.33	0.81	0.10	3.12	3.54	1	4
	4	50	3.28	0.81	0.11	3.05	3.51	1	4
	Total	201	3.34	0.76	0.05	3.23	3.44	1	4

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TABLE E.4: ANOVA Results for the Professional Collaboration Survey Questions

		Sum of Squares	df	Mean Square	F	Sig.	Is the difference significant
Collaboration01 My team has identified team norms to guide us in working together.	Between Groups	0.59	2	0.30	0.69	0.504	No
	Within Groups	86.64	201	0.43			
	Total	87.23	203				
Collaboration02 My team has established strategic, measurable, attainable, results-oriented, and time bound (SMART) goals to improve student achievement.	Between Groups	1.90	2	0.95	1.86	0.158	No
	Within Groups	102.73	201	0.51			
	Total	104.63	203				
Collaboration03 As a team, we are working interdependently to attain the established SMART goals.	Between Groups	4.91	2	2.45	4.46	0.013	Yes
	Within Groups	110.60	201	0.55			
	Total	115.51	203				
Collaboration04 As a team, we analyze student achievement data to establish SMART goals.	Between Groups	3.75	2	1.88	2.90	0.057	No
	Within Groups	129.21	200	0.65			
	Total	132.97	202				
Collaboration05 As a team, we formally evaluate our adherence to team norms.	Between Groups	4.85	2	2.42	3.10	0.047	Yes
	Within Groups	156.66	200	0.78			
	Total	161.51	202				

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TABLE E.4: ANOVA Results for the Professional Collaboration Survey Questions, continued

		Sum of Squares	df	Mean Square	F	Sig.	Is the difference significant
Collaboration06 As a team, we formally evaluate our effectiveness at least twice a year.	Between Groups	6.34	2	3.17	3.93	0.021	Yes
	Within Groups	160.48	199	0.81			
	Total	166.82	201				
Collaboration07 As a team, we work well as a professional learning community.	Between Groups	0.32	2	0.16	0.27	0.765	No
	Within Groups	116.68	198	0.59			
	Total	117.00	200				

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TABLE E.5: Results for the Implementation of Best Practices Survey

	Number of Years in PLC	N	Mean	Std. Deviation	Std. Error	95% Confidence Interval for Mean		Min.	Max.
						Lower	Upper		
ImplementationBestPract01 As a team, we have created essential learning outcomes that are aligned with the District Standards	< 1	90	3.40	0.75	0.08	3.24	3.56	1	4
	3	61	3.44	0.87	0.11	3.22	3.66	1	4
	4	47	3.57	0.65	0.09	3.38	3.77	3	4
	Total	198	3.45	0.76	0.05	3.35	3.56	1	4
ImplementationBestPrac02 As a team, we have created essential learning outcomes that are aligned with the high stakes assessments required of our students	< 1	90	3.36	0.89	0.09	3.17	3.54	1	4
	3	61	3.36	0.97	0.12	3.11	3.61	1	4
	4	47	3.43	0.83	0.12	3.18	3.67	2	4
	Total	198	3.37	0.90	0.06	3.25	3.50	1	4
ImplementationBestPrac03 Each member of my team is clear on the essential learning that students will acquire as a result of each unit within the grade level/course of study	< 1	90	3.34	0.85	0.09	3.17	3.52	1	4
	3	61	3.34	0.95	0.12	3.10	3.59	1	4
	4	47	3.32	0.84	0.12	3.07	3.56	1	4
	Total	198	3.34	0.87	0.06	3.22	3.46	1	4

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TABLE E.5: Results for the Implementation of Best Practices Survey, continued

	Number of Years in PLC	N	Mean	Std. Deviation	Std. Error	95% Confidence Interval for Mean		Min.	Max.
						Lower	Upper		
ImplementationBestPrac04 My team has identified course content that can be eliminated to allow us more time to devote to the essential learning outcomes.	< 1	90	3.22	0.86	0.09	3.04	3.40	1	4
	3	61	3.34	0.95	0.12	3.10	3.59	1	4
	4	47	3.15	1.00	0.15	2.86	3.44	1	4
	Total	198	3.24	0.92	0.07	3.11	3.37	1	4
ImplementationBestPrac05 My team has agreed on the best way to sequence the content of the course	< 1	90	3.23	0.90	0.09	3.04	3.42	1	4
	3	61	3.38	1.00	0.13	3.12	3.63	1	4
	4	47	3.23	0.89	0.13	2.97	3.50	2	4
	Total	198	3.28	0.93	0.07	3.15	3.41	1	4
ImplementationBestPrac06 My team has established pacing guides to help students achieve the intended essential learning	< 1	90	3.18	0.97	0.10	2.98	3.38	1	4
	3	61	3.23	1.10	0.14	2.95	3.51	1	4
	4	47	3.19	0.99	0.14	2.90	3.48	2	4
	Total	198	3.20	1.01	0.07	3.06	3.34	1	4
ImplementationBestPrac07 My team has identified the prerequisite skills students need to have in order to master the essential learning of each unit of instruction.	< 1	90	3.21	0.87	0.09	3.03	3.39	1	4
	3	61	3.16	1.00	0.13	2.91	3.42	1	4
	4	47	3.28	0.90	0.13	3.01	3.54	2	4
	Total	198	3.21	0.92	0.07	3.08	3.34	1	4

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TABLE E.5: Results for the Implementation of Best Practices Survey, continued

	Number of Years in PLC	N	Mean	Std. Deviation	Std. Error	95% Confidence Interval for Mean		Min.	Max.
						Lower	Upper		
ImplementationBestPrac08 My team has established the proficiency standard we want each student to achieve on each concept.	< 1	90	3.19	0.90	0.09	3.00	3.38	1	4
	3	61	3.33	0.91	0.12	3.10	3.56	1	4
	4	47	3.32	0.96	0.14	3.04	3.60	2	4
	Total	198	3.26	0.91	0.06	3.13	3.39	1	4
ImplementationbestPrac09 My team has taught students the criteria we have established to judge the quality of student work.	< 1	90	3.26	0.92	0.10	3.06	3.45	1	4
	3	61	3.23	0.94	0.12	2.99	3.47	1	4
	4	47	3.21	1.02	0.15	2.91	3.51	2	4
	Total	198	3.24	0.94	0.07	3.10	3.37	1	4

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TABLE E.5: Results for the Implementation of Best Practices Survey, continued

	Number of Years in PLC	N	Mean	Std. Deviation	Std. Error	95% Confidence Interval for Mean		Min.	Max.
						Lower	Upper		
ImplementationAssess01 As a team, we Have created instruments to assess if students have the prerequisite skills.	< 1	89	3.15	0.98	0.10	2.94	3.35	1	4
	3	61	3.20	1.09	0.14	2.92	3.48	1	4
	4	47	3.26	1.07	0.16	2.94	3.57	1	4
	Total	197	3.19	1.04	0.07	3.04	3.33	1	4
ImplementationAssess02 As a team, we Have developed frequent common formative assessments that help us determine each student's mastery of essential learning.	< 1	89	3.21	0.97	0.10	3.01	3.42	1	4
	3	61	3.34	0.98	0.13	3.09	3.60	1	4
	4	47	3.32	1.07	0.16	3.01	3.63	1	4
	Total	197	3.28	0.99	0.07	3.14	3.42	1	4
ImplementationAssess03 As a tea, we Have agreed on the criteria we will use in judging the quality of student work.	< 1	89	3.24	0.85	0.09	3.06	3.42	1	4
	3	61	3.31	0.98	0.12	3.06	3.56	1	4
	4	47	3.36	1.03	0.15	3.06	3.66	2	4
	Total	197	3.29	0.93	0.07	3.16	3.42	1	4

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TABLE E.5: Results for the Implementation of Best Practices Survey, continued

	Number of Years in PLC	N	Mean	Std. Deviation	Std. Error	95% Confidence Interval for Mean		Min.	Max.
						Lower	Upper		
ImplementationAssess04 As a team, we have agreed that the criteria for assessment we have agreed on are related to the essential learning of our course.	< 1	89	3.31	0.90	0.10	3.13	3.50	1	4
	3	61	3.30	0.99	0.13	3.04	3.55	1	4
	4	47	3.45	1.04	0.15	3.14	3.75	1	4
	Total	197	3.34	0.96	0.07	3.21	3.47	1	4
ImplementationAssess05 As a team, we practice applying the agreed upon criteria to ensure consistency.	< 1	89	3.16	0.94	0.10	2.96	3.36	1	4
	3	61	3.23	1.02	0.13	2.97	3.49	1	4
	4	47	3.28	1.12	0.16	2.95	3.60	1	4
	Total	197	3.21	1.01	0.07	3.07	3.35	1	4
ImplementationAssess06 As a team, we assess our students' understanding of the concepts based on our previously established proficiency standards.	< 1	89	3.28	0.93	0.10	3.09	3.48	1	4
	3	61	3.28	0.99	0.13	3.03	3.53	1	4
	4	47	3.40	0.99	0.14	3.11	3.70	2	4
	Total	197	3.31	0.96	0.07	3.17	3.44	1	4

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TABLE E.5: Results for the Implementation of Best Practices Survey, continued

	Number of Years in PLC	N	Mean	Std. Deviation	Std. Error	95% Confidence Interval for Mean		Min.	Max.
						Lower	Upper		
ImplementationAssess07 As a team, we have developed a common summative assessment.	< 1	89	3.29	0.97	0.10	3.09	3.50	1	4
	3	61	3.31	1.03	0.13	3.05	3.57	1	4
	4	47	3.36	1.07	0.16	3.05	3.68	1	4
	Total	197	3.31	1.01	0.07	3.17	3.46	1	4
ImplementationAssess08 As a team, we have developed common summative assessments that help us assess the strengths and weaknesses of our program.	< 1	89	3.17	1.06	0.11	2.95	3.39	1	4
	3	61	3.11	1.14	0.15	2.82	3.41	1	4
	4	47	3.30	1.10	0.16	2.97	3.62	1	4
	Total	197	3.18	1.09	0.08	3.03	3.34	1	4

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TABLE E.6: ANOVA Results for the Implementation of Best Practices Survey Questions

		Sum of Squares	df	Mean Square	F	Sig.	Is the difference significant
ImplementationBestPract01 As a team, we have created essential learning outcomes that are aligned with the District Standards	Between Groups	0.95	2	0.48	0.81	0.445	No
	Within Groups	114.14	195	0.59			
	Total	115.09	197				
ImplementationBestPrac02 As a team, we have created essential learning outcomes that are aligned with the high stakes assessments required of our students	Between Groups	0.17	2	0.08	0.10	0.903	No
	Within Groups	158.18	195	0.81			
	Total	158.34	197				
ImplementationBestPrac03 Each member of my team is clear on the essential learning that students will acquire as a result of each unit within the grade level/course of study	Between Groups	0.02	2	0.01	0.01	0.985	No
	Within Groups	150.31	195	0.77			
	Total	150.33	197				
ImplementationBestPrac04 My team has identified course content that can be eliminated to allow us more time to devote to the essential learning outcomes.	Between Groups	1.08	2	0.54	0.64	0.530	No
	Within Groups	165.28	195	0.85			
	Total	166.36	197				

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TABLE E.6: ANOVA Results for the Implementation of Best Practices Survey Questions, continued

		Sum of Squares	df	Mean Square	F	Sig.	Is the difference significant
ImplementationBestPrac05 My team has agreed on the best way to sequence the content of the course	Between Groups	0.87	2	0.43	0.50	0.606	No
	Within Groups	168.85	195	0.87			
	Total	169.72	197				
ImplementationBestPrac06 My team has established pacing guides to help students achieve the intended essential learning	Between Groups	0.10	2	0.05	0.05	0.953	No
	Within Groups	201.22	195	1.03			
	Total	201.32	197				
ImplementationBestPrac07 My team has identified the prerequisite skills students need to have in order to master the essential learning of each unit of instruction.	Between Groups	0.34	2	0.17	0.20	0.819	No
	Within Groups	164.75	195	0.84			
	Total	165.09	197				
ImplementationBestPrac08 My team has established the proficiency standard we want each student to achieve on each concept.	Between Groups	0.90	2	0.45	0.54	0.586	No
	Within Groups	163.44	195	0.84			
	Total	164.34	197				
ImplementationbestPrac09 My team has taught students the criteria we have established to judge the quality of student work.	Between Groups	0.06	2	0.03	0.03	0.966	No
	Within Groups	175.78	195	0.90			
	Total	175.84	197				

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TABLE E.6: ANOVA Results for the Implementation of Best Practices Survey Questions, continued

		Sum of Squares	df	Mean Square	F	Sig.	Is the difference significant
ImplementationAssess01 As a team, we have created instruments to assess if students have the prerequisite skills.	Between Groups	0.37	2	0.19	0.17	0.841	No
	Within Groups	209.68	194	1.08			
	Total	210.05	196				
ImplementationAssess02 As a team, we have developed frequent common formative assessments that help us determine each student's mastery of essential learning.	Between Groups	0.72	2	0.36	0.36	0.698	No
	Within Groups	192.93	194	0.99			
	Total	193.64	196				
ImplementationAssess03 As a tea, we have agreed on the criteria we will use in judging the quality of student work.	Between Groups	0.53	2	0.26	0.30	0.740	No
	Within Groups	169.98	194	0.88			
	Total	170.51	196				

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TABLE E.6: ANOVA Results for the Implementation of Best Practices Survey Questions, continued

		Sum of Squares	df	Mean Square	F	Sig.	Is the difference significant
ImplementationAssess04 As a team, we have agreed that the criteria for assessment we have agreed on are related to the essential learning of our course.	Between Groups	0.72	2	0.36	0.39	0.679	No
	Within Groups	179.50	194	0.93			
	Total	180.21	196				
ImplementationAssess05 As a team, we practice applying the agreed upon criteria to ensure consistency.	Between Groups	0.48	2	0.24	0.23	0.791	No
	Within Groups	197.99	194	1.02			
	Total	198.47	196				
ImplementationAssess06 As a team, we assess our students' understanding of the concepts based on our previously established proficiency standards.	Between Groups	0.55	2	0.28	0.30	0.742	No
	Within Groups	179.56	194	0.93			
	Total	180.11	196				

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TABLE E.6: ANOVA Results for the Implementation of Best Practices Survey Questions, continued

		Sum of Squares	df	Mean Square	F	Sig.	Is the difference significant
ImplementationAssess07 As a team, we have developed a common summative assessment.	Between Groups	0.15	2	0.07	0.07	0.929	No
	Within Groups	198.34	194	1.02			
	Total	198.49	196				
ImplementationAssess08 As a team, we have developed common summative assessments that help us assess the strengths and weaknesses of our program.	Between Groups	0.92	2	0.46	0.39	0.681	No
	Within Groups	232.50	194	1.20			
	Total	233.42	196				

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Table F.1: MANOVA Results of Survey Question Clusters

Multivariate Tests (MANOVA)							
Survey Cluster	Statistical Test	Value	F	Hypothesis df	Error df	Sig.	Significant?
Job Satisfaction	Wilks' Lambda	0.66	1.996	42	366	0.00	Yes
Professional Collaboration	Wilks' Lambda	0.89848031	1.49241263	14	380	0.11	No
Implementation of Best Practices	Wilks' Lambda	0.869386555	0.759020404	34	356	0.83	No

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TABLE F.2: Results of the Univariate Analysis of the Job Satisfaction Survey Cluster

Dependent Variable	Type III Sum of Squares	df	Mean Square	F	Sig.	Significant
JS1 I am committed to a long term career in the District.	0.026998597	2	0.013499299	0.01833	0.982	No
JS2 My work gives me a feeling of accomplishment.	2.50372706	2	1.25186353	2.64166	0.074	No
JS3 I look forward to going to work on Monday morning.	0.240575643	2	0.120287821	0.26366	0.768	No
JS4 I feel positive most of the time when I am working.	0.179694922	2	0.089847461	0.21152	0.810	No
JS5 Most interactions at work are positive.	1.115038174	2	0.557519087	1.92326	0.149	No
JS6 I have good friends at work.	0.051735244	2	0.025867622	0.06077	0.941	No
JS7 Work is a real plus in my life.	1.145510612	2	0.572755306	1.31949	0.270	No
JS8 I am engaged in meaningful work.	1.027939462	2	0.513969731	2.10774	0.124	No
JS9 My values fit with the organizational values.	0.059116567	2	0.029558283	0.06938	0.933	No
Dependent Variable	Type III Sum of Squares	df	Mean Square	F	Sig.	Significant
JS10 I am aligned with the organizational mission.	0.478516707	2	0.239258354	0.58588	0.558	No
JS11 I trust our leadership.	0.138651963	2	0.069325982	0.10183	0.903	No
JS12 I respect the work of my peers.	0.612982831	2	0.306491416	1.02586	0.360	No
JS13 I know what is expected of me at work.	1.391530857	2	0.695765429	1.60941	0.203	No

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TABLE F.2: Results of the Univariate Analysis of the Job Satisfaction Survey Cluster, continued

Dependent Variable	Type III Sum of Squares	df	Mean Square	F	Sig.	Significant
JS14 I have the materials and equipment that I need in order to do my work well.	7.080535704	2	3.540267852	6.50773	0.002	Yes
JS15 I have the opportunity to do what I do best every day at work.	0.767950795	2	0.383975398	0.73124	0.483	No
JS16 My administrators care about me as a person.	0.227660424	2	0.113830212	0.18254	0.833	No
JS17 I know someone at work who encourages my development.	0.236265943	2	0.118132972	0.27077	0.763	No
JS18 My opinions count.	1.045134266	2	0.522567133	0.83789	0.434	No
JS19 My coworkers are committed to doing quality work.	3.234690067	2	1.617345034	4.48691	0.012	Yes
JS20 My colleagues and I hold each other accountable.	2.865817209	2	1.432908604	3.30079	0.039	Yes
JS21 My work with my PLC team has improved my effectiveness.	1.992085792	2	0.996042896	1.25889	0.286	No

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Table F.3: Post Hoc Testing Results of Significant Job Satisfaction Survey Questions

	(I) Years PLC	(J) Years PLC	Mean Difference (I-J)	Std. Error	Sig.	Significant
JS14: I have the materials and equipment that I need in order to do my work well.	1 year of PLC	3 years of PLC	-0.432328191	0.121192024	0.001	Yes
		4 Years of PLC	-0.110367893	0.12796438	0.389	No
	3 years of PLC	1 year of PLC	0.432328191	0.121192024	0.001	Yes
		4 Years of PLC	0.321960298	0.138694215	0.021	Yes
	4 Years of PLC	1 year of PLC	0.110367893	0.12796438	0.389	No
		3 years of PLC	-0.321960298	0.138694215	0.021	Yes
JS19: My coworkers are committed to doing quality work.	1 year of PLC	3 years of PLC	4.44089E-16	0.098650262	1.000	No
		4 Years of PLC	0.288461538	0.104162957	0.006	Yes
	3 years of PLC	1 year of PLC	-4.44089E-16	0.098650262	1.000	No
		4 Years of PLC	0.288461538	0.112897038	0.011	Yes
	4 Years of PLC	1 year of PLC	-0.288461538	0.104162957	0.006	Yes
		3 years of PLC	-0.288461538	0.112897038	0.011	Yes
JS20: My colleagues and I hold each other accountable.	1 year of PLC	3 years of PLC	0.116058906	0.108260705	0.285	No
		4 Years of PLC	0.293478261	0.114310444	0.011	Yes
	3 years of PLC	1 year of PLC	-0.116058906	0.108260705	0.285	No
		4 Years of PLC	0.177419355	0.123895393	0.154	No
	4 Years of PLC	1 year of PLC	-0.293478261	0.114310444	0.011	Yes
		3 years of PLC	-0.177419355	0.123895393	0.154	No

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APPENDIX G

INSTITUTIONAL REVIEW BOARD APPROVAL

OFFICE OF RESEARCH ADMINISTRATION

Interdepartmental Correspondence

Name: Danielle Tormala

Title: The effect of Professional Learning Communities Model of Continuous Improvement on Job Satisfaction, Professional Collaboration and Implementation of Best Practices

The chairperson of the Human Subjects Committee for UM-St. Louis has reviewed the above mentioned protocol for research involving human subjects and determined that the project qualifies for exemption from full committee review under Title 45 Code of Federal Regulations Part 46.101b. The time period for this approval expires one year from the date listed below. You must notify the Human Subjects Committee in advance of any proposed major changes in your approved protocol, e.g., addition of research sites or research instruments.

You must file an annual report with the committee. This report must indicate the starting date of the project and the number of subjects to date from start of project, or since last annual report, whichever is more recent.

Any consent or assent forms must be signed in duplicate and a copy provided to the subject. The principal investigator must retain the other copy of the signed consent form for at least three years following the completion of the research activity and they must be available for inspection if there is an official review of the UM-St. Louis human subjects research proceedings by the U.S. Department of Health and Human Services Office for Protection from Research Risks.

This action is officially recorded in the minutes of the committee.

Protocol Number	Date	Signature - Chair
080929T	10/9/08	

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