
DISSERTATION

Presented in Partial Fulfillment of the Requirements for the Degree Doctor of Philosophy in the Graduate School of The Ohio State University

By

Mary Catherine Sebenoler
Graduate Program in Education

The Ohio State University
2014

Dissertation Committee:
Eric Anderman, Advisor
Sandra Stroot
Bryan Warnick
Abstract

In today’s world, educators are expected to maintain the knowledge and skills necessary to meet the diverse learning needs of their students. Through America’s history, this expectation has garnered consensus and is now established to begin in pre-service teaching programs (Cochran-Smith & Fries, 2001) and continue throughout an educator’s career (Desimone, 2011). Within schools and districts, professional development activities are created with the intention to advance teaching practice; unfortunately, they are generally not effective at changing classroom processes, teacher understanding, or student achievement (Wei, Darling-Hammond, & Adamson, 2010).

Research has defined the features of effective professional development, including reform type, duration, collective participation, active learning, coherence and content focus (Garet, Porter, Desimone, Birman, & Yoon, 2001); each of these features has additional aspects illuminating a guide for improving teacher learning. The two aspects studied in this research are time and collaboration. For time, the hours spent in professional development activities are binned into categories of effectiveness: under 14 hours is not effective, 14-29 hours showed small effects, and 30-100 hours showed the largest effects on teacher learning and student achievement (Banilower, Heck, & Weiss, 2007; McGill-Franzen, Yokoi, Brooks, & Allington, 1999, Yoon, Duncan, Lee, Scarloss, & Shapley, 2007). The next aspect studied is collaboration, defined here as the process...
that brings educators together to analyze and improve their practice (DuFour, 2005) and enables them to teach and learn from each other (Schmoker, 2005) to benefit the school, the district, and their students (Cochran-Smith & Lytle, 1999; Goddard, Goddard, & Tschannen-Moran, 2007; Saunders, Goldenberg, & Gallimore, 2009).

This empirical case study examines how one urban district distributes the 856 professional development activities that occurred in one school year in terms of time and collaboration. The district delineated types of activities according to how they were created, at the schools, within the feeder patterns, or by district departments. Utilizing data collected by the district, the amount of time in professional development activities are categorized, examined, and analysis of variance (ANOVA) completed. Additionally, participants in these activities completed district created evaluations that included their perceptions of collaboration within the activities. The activity means are examined and ANOVA utilized. Secondarily, chi-square tests are used to analyze the association between the types of activities, time, and collaboration.

Generally, the findings of this study revealed that in this district, professional development activities created by the schools were longer than those created by feeder patterns or district departments; although it appeared that the hours in the activities were not long enough to significantly impact teacher or student learning according to the literature. Findings on the perceptions of collaboration suggest that the district’s activities were collaborative, with school site activities generally noted as more collaborative. More research is needed to understand the association, advance the
literature, and assist schools and districts in creating effective professional development that increases teacher and student learning.
This dissertation is dedicated to my amazing parents, Richard and Ruth Steven.

With your love, I achieve all of my dreams.
Acknowledgments

So many people, on both a professional and a personal level, have enhanced this journey. Without their guidance, insights, and support, I am certain that this degree could not have been completed. It seems ironic that this research, which is centered on time and collaboration, has taken so long and has involved such extensive collaboration. I am truly humbled and forever grateful.

At The Ohio State University, there are countless students, staff, and professors who aided my development. For Eric Anderman, your assistance has been paramount. Your approach with me has allowed me to grow beyond anything that I would have imagined. Who knew that I, with my background in English and Literature, would learn to love data? Thank you for accepting my complicated situation, pushing me when I needed it, and allowing this dream to become a reality. To Sandy Stroot, I can still remember you asking, “What do you want to do when you grow up?” and me thinking, “What? I have to decide?” You are a perfect mentor and a wonderful friend. Our work together is a joy, your support has been invaluable, and your perspectives are always appreciated. For Bryan Warnick, thank you for thoughtfully expanding my thinking and for your willingness to continue this journey with me. Without Bob Hite, my graduate work would not have been the same. Your outlook on learning and teacher education, your vast experiences, and your extensive knowledge helped me to understand this
profession, its impact, and its possibilities. I sincerely thank Scott Herness for all of your work on my behalf. Finally, I also need to acknowledge the selfless assistance that Kate Kovach provided to help me see and understand the important stories that are told by statistics.

Numerous colleagues and friends supported this process from the beginning. For Kristy Leigh, experiencing this undertaking with you was outstanding; through our classes, our work, and our conversations, you always helped me to understand things in different and deeper ways. For Greg Mild, your friendship means the world to me and I thank you for helping me to grow into the data geek I am today. To Gene Harris, I can’t imagine my career without your support and mentorship; you are forever in my head and in my heart. To Rhonda Johnson, I love that you always believe in me and supported our work together; you have expanded my understanding of too many topics to count and I am grateful that our paths crossed so long ago. For Kari Yates, my gratitude for your friendship, support, and perspective is without limit; it was a lucky day for me when you walked onto the 3rd floor of that high school. Numerous other educators provided invaluable and on-going encouragement, including Dean Fowls, Kris Crombie Stotik, Pete Trautmann, Pam Million, Randy Flora, Dave Axner, Beverly Moss, and Julia Simmerer. Additionally, I can’t forget Mike Barnes, with his mad data skills, or Liz McNally, who made me see that I could really get this done – exactly at the time I needed to hear it. Thanks to you all!
Finally, I need to acknowledge my amazing, supportive family! For Dave, my husband of 23 years, I can remember when we originally discussed this idea of how a doctorate would be needed so that, someday, our three kids could go to the college where I worked… now I just need to find the perfect university. For those three wonderful children, Alison, Jenna, and Thomas, I hope that you see that hard work and continuous learning is the pathway to success, I know I continue to learn from you every day. Additionally, to my brother and my extended family (all the aunts, uncles, and cousins) your support in this effort, just like in all my others, is much appreciated. My acknowledgements would not be complete without including Richard and Ruth Steven, my mom and dad; two of the most wonderful gifts that I have been given. Words do not express how fortunate I am to be your daughter or how grateful I am to have you as my parents. I’m everything I am because of you.
Vita

1987. ........................................Marion Harding High School

1991.................................B.S. in Education, Ashland University

2004.................................M.A. in English, Middlebury College

1992 – present .......................Teacher and Administrator, Columbus City Schools

Fields of Study

Major Field: Education

Cognate: Educational Psychology
Table of Contents

Abstract ........................................................................................................................................ ii

Acknowledgments .................................................................................................................... vi

Vita ............................................................................................................................................... ix

Table of Contents ........................................................................................................................ x

List of Tables ................................................................................................................................ xii

List of Figures ............................................................................................................................ xiii

Prologue ....................................................................................................................................... xiv

Chapter 1: Introduction ................................................................................................................ 1

Significance of the Study ........................................................................................................... 4

Research Questions ................................................................................................................... 6

Chapter 2: Review of the Literature ............................................................................................ 9

History of Educator Learning in America ............................................................................... 9

Understanding Effective Professional Learning ................................................................... 16

Features of Effective Professional Learning ...................................................................... 22

Time ......................................................................................................................................... 27

Collaboration ............................................................................................................................ 34
List of Tables

Table 3.1. 2012-13 Student Demographic Data.............................................. 46
Table 3.2. 2012-13 Educator Demographic Data............................................ 47
Table 3.3. 2012-13 School Grade Levels and Numbers of Buildings................. 48

Table 4.1. Activity Types and Number of Hours ............................................ 63
Table 4.2. Results of Chi Square Test for Types of Activities by Amount of Time in
          Hours.................................................................................................. 65
Table 4.3. Activity Participants and Responses.............................................. 66
Table 4.4. Results of Chi Square Test for Types of Activities by Perception of
          Collaboration.......................................................................................... 67
Table 4.5. Results of Chi Square Test for School Activities, Amount of Time by
          Perception of Collaboration ................................................................. 68
Table 4.6. Results of Chi Square Test for Department Activities, Amount of Time by
          Perception of Collaboration .................................................................. 69
Table 4.7. Results of Chi Square Test for All District Activities, Amount of Time by
          Perception of Collaboration .................................................................. 70
List of Figures

Figure 5.1. Time and Collaboration in Professional Development ................................ 81
Prologue

I started my career in education twenty years ago in a large, urban district in Ohio. This district was different from the small town where I grew up forty miles away from the big city. These students were mainly poor minorities and I had come from a modest, middle-income family with little socio-economic differences among my mainly white friends and neighbors. I had a successful schooling experience and went to college knowing that I wanted to be a teacher. My pre-service program gave me a number of field experiences, including one in an urban school with a wonderful, dedicated, cooperating teacher that sparked my interest in making a difference in urban settings. However, from my first day in my own classroom, I realized I had so much to learn about successfully teaching the students in my district and I began my professional learning journey.

This district provided numerous opportunities for staff development and as a learner and a teacher interested in continuous improvement and helping my students, I sought every opportunity that I could. There were numerous after-school sessions with various multi-cultural experts that expanded my understanding of the students in my school and how they learned best. I would travel to a district location and listen to the speaker for an hour and take away a nugget or two of insight. Additionally, the district held Saturday morning workshops that shared the expected curriculum and detailed
specific techniques designed to increase the effectiveness of my practice. I really enjoyed these sessions and believed they were benefiting my work with students, even though I always felt rushed listening to the apologetic facilitators sharing that “they wouldn’t keep us too long” despite the groups’ voluntary attendance displaying their wish to engage in the content. As I was apparently geared to engage in reflective practice, I applied for the district’s support for National Board Certification and expanded my network to include teachers who also enjoyed contemplating what students should know and be able to do.

In addition to these supports, the district had a fee-waiver program with a local university and I enrolled in a few courses about my content and pedagogy that stimulated my thinking. The classes were generally wonderful, but I often felt like a lone wolf without any of my school colleagues with me to discuss how the learning impacted our daily work. One of my principals introduced me to a college professor who connected me with a graduate program that held intensive classes in the summer and offered continued support from the faculty during the school year with a network of teachers across the country. This transformative experience taught me how to engage in collaborative discourse about teaching and learning and propelled me to stay engaged with my district’s professional development activities; however, I noticed that not all of my colleagues were as dedicated to their own growth and this always puzzled me. Nevertheless, I was busy working collaboratively with like minds in my school and across the country in my teachers’ network, so that did not leave a lot of occasion to ponder the motivations of others.
In a large district, there are many career opportunities for teachers and I was hired to participate in a core team that partnered with a local university to create a school that focused on the development of effective practices for urban students. This interesting position allowed me to both teach students and to coordinate the professional development of the staff. I was able to expand my understanding of what worked for teachers and why many of my colleagues did not engage extensively in their own professional growth. I heard often about how programs come and go, how there are no simple answers, how teachers felt isolated in their classroom, and how intimidating it was to share their practices with their peers.

Ten years ago, I attained a district level position in the professional development office. This role provided me an increased ability to participate, facilitate, and consider the effectiveness of the educator learning activities that occurred throughout the over 100 schools and multiple departments within the district. I worked every day with principals and teachers, listening to their triumphs and frustrations, observing their attempts at becoming better practitioners and challenging them to take actionable steps in their journey. These experiences sparked even more interest in the practices that made educator professional learning productive and the structures that assisted in framing them.

To continue my own learning, I began my doctoral degree in Educational Policy and Leadership, specifically concentrating in the areas of Teacher Education and Educational Psychology. It was through my coursework and collaborative experiences within academia that I began to see disconnects in the research on professional
development and the creation of professional learning experiences in the field. Through my professional experiences, I was able to take stock of what worked to change educator practices and what did not. This observation led me to an inquiry regarding aspects of my district’s professional learning experiences and mechanisms that could assist in aligning the research with practice; therein lies the stimulus for this study and those that will follow.
Chapter 1: Introduction

Today, the work of an educator is more rigorous and demanding than it has ever been. “In response to an increasingly complex society and a rapidly changing, technology-based economy, schools are being asked to educate the most diverse student body in our history to higher academic standards than ever before” (Darling-Hammond, 2008, p. 91). For teachers to enact the high levels of practice needed for their students to learn, they must possess a strong and diverse base of pedagogical content knowledge (Shulman, 1987). Building this knowledge begins with high standards for initial teacher preparation (Cochran-Smith & Fries, 2001) and continues over a teacher’s career through effective professional development (Desimone, 2011).

This rigorous expectation of American educators has changed significantly since the first law requiring towns to employ teachers to instruct their children was passed in 1647 (Shurtleff, 1853); moreover, there were few expectations for teachers at all until the 1840s, when Normal Schools began to educate pre-service grammar school teachers with a “norm” of knowledge, skills, and values (Previte, 2013). Normal Schools were not accessible to all (Hoffman, 2003), but the call for better qualified teachers led to what could be considered the first professional development effort, the Teacher Institute, which paralleled the content taught at the Normal Schools as well as provided “a wide variety of extension and continuing education opportunities, especially in summer
schools for teachers” (Fraser, 2007, p. 146). By the late 1800’s universities were involved in the training and development of teachers (Lagemann, 2000) and, over the next fifty years, the minimum expectation of a college degree was established as teaching gained recognition as intensive endeavor that required extensive knowledge, complex skills and continued study (Woodrig, 1957). By the late 1900’s, as the standards for teachers continued to rise (Carnegie Forum on Education and the Economy, 1986), a new accountability to student achievement increased the emphasis on teacher quality, and in-service professional development had become highly relevant to policy makers (Organisation for Economic Cooperation and Development, 2005).

Recently, the federal government has aided reform efforts through the distribution of funding for professional development with over $450 million disseminated through i3 grants to districts from 2010-2012 and over $2 billion provided to districts in 2013 through Title II of the Elementary and Secondary Education Act; this investment enabled at least fifteen million teachers to participate in activities during the day or after school that were designed to enhance the quality of teaching (United States Department of Education, 2014). Even with this significant federal investment, districts and schools have limited resources allocated for professional development (Banilower, Heck, & Weiss, 2007) and most educators in the United States do not participate in high quality, effective learning experiences (Blank, de las Alas, & Smith, 2007).

Generally, teachers are voyeurs of episodic development experiences that are completed in isolation and seem to end as quickly as they begin, long before there is an
opportunity to reflect or apply new understanding to make productive changes in practice (Wei, Darling-Hammond, & Adamson, 2010). Likewise, Katz and Dack (2013) espouse that when professional development is ineffective, it does not impact teacher learning and the teachers who attend do not reform their practice. According to Guskey and Yoon (2009), “no improvement effort has ever succeeded in the absence of thoughtfully planned and well-implemented professional development” (p. 497) making professional learning an important contribution to erasing the inequities that exist across classrooms and increasing opportunities for all students to succeed (Hirsch, 2009). The terms professional development and professional learning are seemingly used interchangeably; but they can also be viewed as separate, with development being the activities and learning being the result (MacKeracher, 2004).

Demonstrated by Freire, transformative teaching elevates learners to “recognize themselves as the architects of their own cognition process” (Freire, 1998, p. 112), which leads to changes in perspectives and should result in learners’ efforts to change their situations (Freire, 1974). This perspective is applicable to professional learning, wherein teachers develop their pedagogical content knowledge, which contributes to changes in their perceptions of their classrooms or of themselves and ultimately transforms their practice. Considering the history of teacher learning, Easton (2008) posits that educators, who have moved from being “trained” to being “developed” in the advancement of their practice, must now transform again:

It is clearer today than ever that educators need to learn, and that’s why professional learning has replaced professional development. Developing is not
enough. Educators must be knowledgeable and wise. They must know enough in order to change. They must change in order to get different results. They must become learners. (p. 756)

In order for this transformation, schools and districts must provide well-designed and rich professional learning opportunities so that teachers are, in turn, able to create high level and engaging opportunities for their students (Darling-Hammond & Richardson, 2009).

Significance of the Study

In my experience creating and facilitating professional development with individuals, schools, and across a school district, I have learned that my efforts are more successful when my time with the educators is longer and when I provide opportunities for collaboration about the content of the activities and about the other aspects of practice that rise to the surface as we explore the content. This practitioner’s perspective was informed by my interests to assist the educators in my district, reflection about my practices, extensive personal reading, multiple discussions with my colleagues, and numerous experiences as a participant in professional growth activities.

As a researcher, I designed this study to examine one district’s professional development activities and inform the gap between research and practice. Banilower, Heck, and Weiss (2007) claim that “given the importance professional development plays in the education system, and the limited resources available, it is crucial for the education community to investigate what approaches are most effective” (p. 390). Research by
Stein, Smith, and Silver (1999) proved that the typical one-and-done institute approach that was standard in American education was not effective, and, thus, sparked additional research on what is. This approach was a turning point for professional development research, because past studies tended to concentrate on teacher satisfaction, attitudes, or commitment to change practices, not the actual results of the implementation or the processes that achieved results (Desimone, 2011). However, Guskey and Sparks (1996) noted that simple causal inferences connecting the participation in professional development and student achievement are extremely difficult due to many intervening variables and the complexities of school settings. This sentiment was further acknowledged in the seminal publication, *Professional Learning in the Learning Profession: A Status Report on Professional Development in the U.S. and Abroad*, wherein, Wei, Darling-Hammond, Andree, Richardson, and Orphanos (2009) studied the professional learning in high achieving nations, and found commonalities, identified the research base supporting these practices, and suggested that the connections were relevant but did not prove causality.

However, in the literature, there is an understanding about the key features of effective professional development, including *reform type, duration, collective participation, active learning, coherence* and *content focus* (Desimone et al. 2002; Garet et al. 2001). Each of these features has additional aspects that bring together a guide for improving teacher learning; the two aspects in my interest are time and collaboration. Correspondingly, The National Research Council suggests:
Research studies are needed to determine the efficacy of various types of professional development activities, including pre-service and in-service seminars, workshops, and summer institutes. Studies should include professional development activities that are extended over time and across broad teacher learning communities (Bransford, Brown, & Cocking, 1999, p. 240).

Additionally, one of the commonalities identified by Wei et al. (2009) in the professional development in high performing countries was “time for collaboration built into teachers’ work hours” (p. 18). Through the National Center for Innovation, Watts and Castle (1993) worked with more than 100 reform efforts and concluded that teachers face a lack of time to collaborate, and that if school reform efforts are to work, this dilemma must be resolved at the school level with support of the district and the community. This research is designed to contribute to the understanding of professional development and assist educators and districts in developing effective practices that optimize teacher and student learning.

Research Questions

This research is an empirical case study examining how one large, urban school district distributes its professional development activities in terms of time and collaboration. Secondarily, the association between time and collaboration is explored. The examination of the activities is approached with an implied understanding that the district created them to develop the learning of its educators and enhance their practice; therefore, throughout the study, the terms professional development and professional
learning are used interchangeably. The following research questions guide the investigation:

1) What is the time spent in professional learning activities?
   a) What is the time spent in professional learning activities that are created by schools?
   b) What is the time spent in professional learning activities that are created by feeders?
   c) What is the time spent in professional learning activities that are created by departments?
   d) What is the association of the time spent in activities created by schools, feeders, and departments?

2) What are the participants’ perceptions of collaboration during the professional learning activities?
   a) What are the participants’ perceptions of collaboration during professional learning activities that are created by schools?
   b) What are the participants’ perceptions of collaboration during professional learning activities that are created by feeders?
   c) What are the participants’ perceptions of collaboration during professional learning activities that are created by departments?
   d) What is the association of participants’ perceptions of collaboration during the professional learning activities that are created by schools, feeders and departments?
3) What is the association of time and perceptions of collaboration in professional learning activities?

a) What is the association of time and perceptions of collaboration in professional learning activities that are created by schools?

b) What is the association of time and perceptions of collaboration in professional learning activities that are created by feeders?

c) What is the association of time and perceptions of collaboration in professional learning activities that are created by departments?

d) What is the association of time and perceptions of collaboration in all of the district’s professional learning activities?
Chapter 2: Review of the Literature

This literature review highlights the research related to my study of the professional development activities in one school district. I provide an overview of the history of teacher learning in American to provide context for the current expectations and features of effective professional development practices. Finally, I review literature regarding the two variables in my study, the amount of time spent and the collaboration in professional learning activities.

History of Educator Learning in America

To gather a current understanding of professional development, it is important to gain perspective on where teacher learning began. America’s first free public school education act for children occurred in Massachusetts in 1647, wherein the government required towns with over fifty households to employ a teacher to instruct the children in reading and writing so that they would be able to withstand society’s negative influences, “it being one chief project of that old deluder, Satan, to keep men from the knowledge of the Scriptures” (Shurtleff, 1853. p. 203). The “Old Deluder Satan” Act launched the formation of local American schools as well as set the curriculum that teachers were expected to teach (Kimball, 1988); schools began to be formed across the colonies from this point forward and teachers began to learn about their craft.
In the mid 1700’s, a recent graduate from Harvard College, John Adams, left his hometown in Massachusetts for his first job as the master of a grammar school some sixty miles away. He wrote the following about teaching in his diary:

To bestow the proper applause upon virtuous and generous actions, to blame and punish every vicious and contracted trick, to wear out of the tender mind every thing that is mean and little, and fire the new born soul with noble ardor and emulation. The world affords no greater pleasure. (Adams, 1756, p. 8)

Adams’ delectation for teaching was perhaps shared by the few in the colonial period who stayed with education as a life-long profession; however, his beginnings were typical of most of the male teachers of his time; they had attended college, needed money to continue with their real aspirations, and arrived at a temporary position in a school (Fraser, 2007). This particular John Adams went on to become a successful lawyer, an advocate of the Declaration of Independence, and the 2nd President of the United States. Like Adams, most of the schoolmasters in the 1700s taught for a brief time period before pursuing the standard three professional fields of medicine, law or the clergy that were open to men (Kimball, 1988). In contrast to the college educated male pathway to teaching, there were countless, young females across colonial America’s towns supervising young children, teaching basic literacy and mathematics skills, and earning a small sum paid by the parents (Sklar, 1973). Many of these women, especially among the settlers heading to the open prairies of the west, were “local mothers, wives, and daughters who were literate and who shared the belief that education would lead to the improvement of self and community” (Cordier, 1988, p. 104).
By 1826, education reformer James Carter’s *Essays upon Education* pushed the thinking that the learning of public school teachers was inadequate:

Grammar school teachers have rarely had any education beyond what they have acquired in the very schools where they teach.... No standard of attainments is fixed, at which they must arrive before they assume the business of instruction. So that any one keeps school, which is a very different thing from teaching school, who wishes to do it, and can persuade, by herself, or her friends, a small district to employ her. (pp. 36-37)

Agreeing with this sentiment, education reformer, Catherine Beecher opened preparatory programs for women to learn about teaching grammar school; her first, The Hartford Female Seminary, provided a more robust education aimed at positioning teaching as a career well suited for women (Sklar, 1973). In a published presentation to her trustees Catherine Beecher posits her thinking about teacher development:

Let a teacher have sufficient time and facilities afforded, let her make this a definite and express object, let her learn from the experience of others the various operations of the human mind, let her study the various methods of controlling the understanding, the conscience, and the natural affections, and there is scarce any thing she may not hope to effect. (Beecher, 1829, p. 44)

Concurrently, another reformer, Horace Mann, proposed the idea of a *common school* that would maintain a standard curriculum and be accessible to all children, including the large numbers of immigrants coming to America (Peterson, 2010). With this increase in grammar schools, the need for more teachers grew along with a goal for consistent
teacher training that led to the opening of the first Normal School, in Massachusetts in 1839. Normal Schools purported to establish a “norm” of knowledge, skills, and values in all teachers, including standard course content and the beginnings of pedagogical learning (Previte, 2013). This requisite for better-prepared educators was a “step toward the professionalization of teaching” (Ogren, 2005, p. 11).

In this period of American history, most states started basic stipulations for grammar school teachers including minimum academic proficiency and mandatory participation at Teacher Institutes (Richey, 1957). William Russell, who was the editor of the *American Journal of Education* in 1848, believed that the Teacher Institutes should not serve as the primary training ground for teachers, they should provide on-going training for teachers after their education in academies or Normal Schools (Russell, 1848). However, the majority of teachers did not have any formalized training prior to their first day teaching (Hoffman, 2003) and the Teacher Institutes served a purpose, to show the practicability of making some provision for the better qualification of common school teachers, by giving them the opportunity to revise and extend their knowledge of the studies usually pursued in the District Schools, and of the best methods of school arrangements, instruction, and government, under the recitations and lectures of experienced and well known teachers and educators. (Mattingly, 1975, p. 63)

From 1840-1920, these district or state run institutes would continue to be primary sources for grammar school teacher development, paralleling the teachings at the Normal Schools, such as curricular content, the art of teaching, managing a classroom, and the
promotion of the high calling of teaching as well as providing “a wide variety of extension and continuing education opportunities, especially in summer schools for teachers” (Fraser, 2007, p. 146).

Concomitantly, universities were considering their place in the development of teachers and the Normal Schools entered a new phase, transforming into education departments that would provide the foundation for Schools of Education at the turn of the century (Goodchild, 2006). As the debate around the content that teachers should know and be able to do continued, Hall (1885) posited that child psychology was at the center of teacher learning:

Here is the heart of the pedagogy of to-day and of to-morrow, where the science and philosophy of education join friendly hands with the practical teacher, and here he who would speak with authority and be heard in the new departure already ripening, must study with patience and love the psychology of the growing, playing, learning child and youth. (p. 148)

Noting that the practicing teachers strived for continued learning after their initial preparation, William James, philosopher and psychologist from Harvard, contributed a series of lectures that were then published in 1899 in a book entitled, *Talks to Teachers.* He provides a context for the emerging sense that teachers have a quest for knowledge of relevant scientifically proven practices:

The desire of the schoolteachers for a completer professional training, and their aspiration toward the 'professional' spirit in their work, have led them more and more to turn to us for light on fundamental principles. And
in these few hours, which we are to spend together, you look to me, I am sure, for information concerning the mind's operations, which may enable you to labor more easily and effectively in the several schoolrooms over which you preside. (p. 5)

James’ connection of the teacher’s desire to bridge the universities’ theoretical findings into their classrooms was shared by other educational reformers like John Dewey and Edward Thorndike, as they connected the scientific results of the established professional disciplines to mold the university programs and education curriculum in the development of pre-service teachers (Lagemann, 2000).

In the 1930s, as the United States population grew and the emergence of high schools for older students gained momentum, well-educated and trained teachers became the topic of debate among policy makers, and states began to set minimum standards for their educators (Krug, 1964). By the 1950s, recognition that teaching was an intensive endeavor that required extensive knowledge, complex skills, and continued study prompted the viewpoint that all teachers should attain a college degree (Woodrig, 1957). As this expectation of an education degree was solidified, the next decade brought feverish attention to the quality of teachers that were being produced, including criticism from the established arts and science fields, and universities adopted the competency-based model of teacher development with a focus on content understanding and teaching skills in alignment with their research interests (Zeichner, 1983). Concurrently, President Johnson signed the Elementary and Secondary Education Act in 1965, which created the Teacher Corps with the goal recruiting young, energetic liberal arts graduates and
experienced teachers into urban and rural settings that were lacking teachers (Fraser, 2007). During this decade, the US Government began collecting statistical information about degrees conferred by institutes of higher education showing that each year on an average, 38,000 Education Master’s and Doctoral Degrees were earned in Education (Snyder, 1993), demonstrating that an undergraduate degree was the beginning of the development of teacher professional learning, not the conclusion.

In the final decades of the 20th century, education reform initiatives continued, and the publication of a report by the Carnegie Foundation (1986) espoused recommendations which included a call for teacher development to include specific bachelor’s degrees, Master degrees, and a National Board for Professional Teaching Standards credential to be offered to teachers after their third year of experience. A decade later, the National Commission on Teaching and America’s Future (1997) called for further restructuring of pre-service teacher preparation programs and intensified in-service professional development. Sykes (1996) held that education reform and the professional development of teachers are often one in the same, solidifying the country’s need to ensure that in-service profession development was effective. Research by Stein, Smith, and Silver (1999) established that the traditional Institute approach – the format that had been standard for over 150 years in American education, the one that occurs away from teachers’ practice and the activity that ends without continued follow-up – was an ineffective format for the professional development of educators.
As a new accountability to student achievement increased the emphasis on teacher quality, in-service professional development became highly relevant to policy makers (Organisation for Economic Cooperation and Development, 2005). This was evident in 2001, when the federal government passed the No Child Left Behind Act that stimulated many sweeping changes in student achievement expectations and simultaneously required “high-quality professional development” for all teachers. The bill stipulates that professional development activities must be designed to advance teacher understanding of effective instructional strategies that are grounded in scientifically based research, increase teacher knowledge and skills, align with student academic achievement standards and assessments, and improve student academic achievement; this clarity in expectations supplicates a need to understand when professional development is effective. In 2009, Hirsch contested:

Professional development is a moral imperative. The inequity in teaching quality and educational resources across classrooms, schools, and districts denies some students the opportunities for academic success. These inequities can be addressed through effective professional learning within schools. (p. 9)

Understanding Effective Professional Learning

The history of educator learning in America informs the dramatic changes in the expectations of teachers and establishes the need to understand effective professional development. Darling-Hammond and McLoughlin (2011) illustrate that “a climate rich in sustained and relevant opportunities for teachers’ learning resembles a web, in which
networks, seminars, meetings, and focus groups intersect to provide an array of opportunities for teachers” (p. 86). This construct of professional development is defined by Little (1987) as “any activity that is intended partly or primarily to prepare paid staff members for improved performance in present or future roles in the school districts” (p. 491). Hookey (2002) espoused professional development as “a change in a teacher’s knowledge base and actions” (p. 888), which includes relevant experiences that are intended to encourage modifications in professional practice over a teacher’s entire career.

According to Desimone (2011), “professional development activities can come in the form of workshops, local and national conferences, college courses, special institutes, and so on” (p. 28). Establishing that there is not one approach, Borko (2004) contributes this perspective:

For teachers, learning occurs in many different aspects of practice, including their classrooms, their school communities, and professional development courses or workshops. It can occur in a brief hallway conversation with a colleague, or after school when counseling a troubled child. To understand teacher learning, we must study it within these multiple contexts, taking into account both the individual teacher-learners and the social systems in which they are participants. (p. 4)

Furthermore, Cobb (1994) believed that educator “learning should be viewed as both a process of active individual construction and a process of enculturation into the . . . practices of wider society” (p. 13).
For learning to occur, Jackson (1986) explains that effective teaching is not attained through the gathering of mimetic knowledge, prescriptions defining specific teacher actions; effective teaching occurs as teachers learn to be transformational in their examination of their students’ learning and their creation of environments that enable the highest levels of learning to occur. Jackson’s ideal is applicable to professional learning situations as well and offers a view of quality teacher learning. Joyce and Showers (2002) articulate that effective professional learning involves a community of professionals that learn together about their curriculum and their instructional techniques with opportunities to try new practices in a setting that is geared to celebrating learning at all levels. Hawley and Valli (1999) proposed design principles for effective educator professional learning, which included specifics around the content and the structure as follows:

1) Includes the content of identification of what standards students are to learn, how to address the different problems students may have in learning, evaluation of student learning outcomes, and the theoretical principles of the student learning

2) Is organized around collaborative problem solving at the school and built into the day-to-day work of teaching in a continuous and ongoing process that involves support from external sources.

Some states have adopted standards that define specific characteristics of high quality professional development; in Ohio, the Educator Standards Board (2005) defined the standards as follows:

1) Purposeful, structured and continuous process that occurs over time,
2) Informed by multiple sources of data,

3) Collaborative,

4) Includes varied learning experiences that accommodate individual educator’s knowledge and skills,

5) Evaluated by its short- and long-term impact on professional practice and achievement of all students, and

6) Results in the acquisition, enhancement or refinement of skills and knowledge.

“The primary goal of professional development is to increase student learning. Although it is difficult to measure a cause and effect relationship, the impact of professional development must be evaluated on multiple levels” (Educator Standards Board, 2005, p. 71).

According to Guskey (2000), the evaluation of professional development is a means to measure this impact; he posits five levels of feedback to inform the effectiveness of the activity:

Level 1 - participants’ reactions;

Level 2 - participants’ learning;

Level 3 - organizational support and change;

Level 4 - participants’ use of new knowledge and skills; and

Level 5 - student learning outcomes.

From Guskey’s view, these levels grow in importance for evaluating the impact of the professional learning activity and are also designed to inform the planning of the
activities. For example, positioning the student learning outcomes (level five) as the first step in organizing the activities themselves will provide the context necessary for teacher learning to positively impact student growth. This is fundamental shift in thinking and planning, as teacher professional development has traditionally been “a patchwork of opportunities—formal and informal, mandatory and voluntary, serendipitous and planned—stitched together into a fragmented and incoherent curriculum” (Wilson & Berne, 1999, p. 174).

At its core, educator learning facilitates the improvement of teaching that will translate into increased student learning (Cohen & Hill, 2001; Desimone, 2009). Intuitively, effective professional learning logically results in increased student achievement (Borko, 2004; Supovitz, 2001). However, Elmore (2000) advises that more than student’s test scores must be used to measure the effectiveness of professional development efforts. Garet, Porter, Desimone, Birman, and Herman (1999) found that teacher learning and their changes in practice resulting from professional learning are much more studied than the student achievement outcomes. To substantiate the empirical link between teacher learning activity and student achievement, Yoon, Duncan, Lee, Scarloss, and Shapley (2007) suggest three phases:

First, professional development enhances teacher knowledge and skills. Second, better knowledge and skills improve classroom teaching. Third, improved teaching raises student achievement. If one link is weak or missing, better student learning cannot be expected. If a teacher fails to apply new ideas from
professional development to classroom instruction, for example, students will not benefit from the teacher’s professional development. (p. 4)

The interplay between these different aspects is also why showing the straight line between professional learning and student achievement gains is difficult (Loucks-Horsley & Matsumoto, 1999). Fishman, Marx, Best, and Tal (2003) contribute to this understanding proposing that a combination of student results, teacher reflection and classroom observations provides a relevant framework for evaluating professional learning. Little (2006) adds that when educators develop lessons together, they have a greater commitment to future cooperative work; this collective action creates a network for teachers that supports modifications in their teaching philosophies and instructional practices (Borko, 2004) and serves as an important variable in their sense of efficacy and contributes to positive student outcomes (Ingvarson, Meiers & Beavis, 2005). In their year-long mapping project into the policies and practices of teacher professional learning in Australia, Doecke, Parr, and North (2008) posit that a culture of effective professional learning provides the needed context for teachers to more successfully address the learning of their students. Establishing this culture is possible when the professional learning has specific features, as discussed in the next section.
Features of Effective Professional Learning

Recently, Desimone (2011) espoused that “because professional development is a complex array of interrelated learning opportunities, it’s challenging to distinguish teachers’ learning activities from one another and to describe trends, associations, or effects of professional learning on knowledge, instruction, and student achievement” (p. 29) and that evidence has emerged identifying categories of features that lead to teacher learning. Two empirical studies informed this position, “Effects of Professional Development on Teachers’ Instruction: Results from a Three-year Longitudinal Study” by Desimone, Porter, Garet, Yoon, and Birman (2002), and “What Makes Professional Development Effective? Results from a National Sample of Teachers” by Garet et al. (2001). Both of these studies examined the effects of identified features of professional development using data from the Dwight D. Eisenhower Professional Development Program, the federal government’s distribution of financial resources to state and local education agencies to provide new opportunities for the improvement of teaching and learning as part of Title II of Elementary and Secondary Education Act (1965). These features were organized into two categories: the structure of the professional development and the core characteristics of what occurs during the professional development activity.

The first category identified by the researchers (Desimone et al., 2002, Garet et al., 2001) encompasses structural features, which were grouped into the three areas of reform type, duration, and collective participation. Reform type refers to the activity’s
organization wherein participating teachers work in collaborative arrangements, like a “study group, teacher network, mentoring relationship, committee or task force” (Desimone et al., 2002, p. 83), as opposed to the standard type of organization where individual teachers attend in-service workshops, university coursework, or professional conferences that do not promote collaborative discourse. When referring to duration, attention is given to the total number of contact hours as well as the span of time, such as when an activity occurs for one week or intermittently over six months, both of which provide more opportunities for collaboration and practice. The final structural feature is collective participation, in which educators participate in professional development activities in groups that may consist of teachers from the same school or from the same department or grade level within a school or across a district; this differs from traditional approaches where teachers engage in activities individually and may or may not share understanding of the contexts of each other’s teaching situations.

In addition to the structural features, the researchers (Desimone et al., 2002, Garet et al., 2001) identified the core characteristics occurring within professional development activities that lead to a change practice, skills, and knowledge of the participants; they are active learning, coherence, and content focus. An activity with active learning enables teachers to be engaged by observing other classrooms and receiving feedback on their own teaching, leading discussions in small and large groups, or collectively considering student work, as opposed to the standard lecture design where teachers are the passive recipients of the expert’s ideas and do not have collaborative opportunities. Activities that foster coherence are aligned to school, district, and state policies or expectations of
teaching standards and student assessments concerns, particularly “the extent to which professional development activities are perceived by teachers to be a part of a coherent program of teacher learning” (Garet et al., 2001, p. 927). The final core feature that occurs within effective professional development is *content focus*, meaning that the substance of the activity is on the teachers’ subject matter content and how students learn that content.

In their study, Garet et al. examined the impact of the features of professional development identified above on teachers’ knowledge and practices. A national probability sample of 358 districts and state agencies for higher education (SAHE) providing Eisenhower funded professional development activities in 1997 was used. A randomly subsampled set, including two teacher participants from each activity, received a survey and 1,027 responded. The researchers developed scales for the aforementioned features of professional development and used ordinary least scales (OLS) regression modeling to determine relations; the results of their analysis revealed that the core and structural features are significant predictors of professional development that increases teachers’ self-reported learning, knowledge and skills leading to change in their classroom practices.

Additionally, Desimone et al. (2002) investigated the six features of professional development noted above that had a positive effect on changing the instructional practices of mathematics and science teachers. A national probability sample of Eisenhower districts was examined, which included data from ten districts in five states.
One elementary school, one middle school, and one high school were selected from each district; ultimately, data from 207 educators were studied. The structure of the teacher self-reported data gathered between 1996 and 1999 contained two levels, professional development strategy and teacher activity; therefore, a correlational research design incorporating, hierarchical linear modeling (HLM), was utilized to examine the effects of the professional learning. The study contained two findings: 1) the specific features of professional development are associated with changes in teacher understanding and classroom instruction, and 2) the combination of the core and structural features had the most success in changing teacher knowledge and practice.

Prior to these empirical studies, Wilson and Lowenberg Ball (1991) explored the teacher learning and their application of this knowledge into classroom practices of participants in the SummerMath for Teachers program through qualitative case study research. This yearlong professional learning activity began with an intensive two-week summer residential session and continued in the participants’ school setting through the next school year. The professional development program had positive impacts on changing teacher knowledge and classroom practices. The researchers noted particular features of the professional development program including the duration, active learning, and content focus; additional consideration was paid to the collaborative aspects of the initiative between the participants contributing to the success of the initiative.

Providing further evidence for the positive outcomes of professional development that contains specific features is a review of state professional development initiatives
prepared for the Council of Chief State School Officers, “Does Teacher Professional Development Have Effects on Teaching and Learning” (Blank, de las Alas, & Smith, 2008). For the purpose of providing information to state educational leaders about the quality of programming in teacher learning, this meta-analysis examined 41 state nominated professional development initiatives that occurred between 2004 and 2007 across 14 states in America. Limited by the inconsistent information that was provided by the states, the authors identified 25 initiatives that noted an increase of teacher knowledge, a change in teaching practices, and increases in student achievement for closer examination. Across this subset, five features of effective professional development, *content focus, active learning, collective participation, coherence, and duration*, were consistently included, leading the authors to conclude that the features were rightly becoming part of the professional development landscape in the United States.

These studies (Blank et al., 2008; Desimone et al, 2002; Garet et al., 2001; Wilson & Lowenberg Ball, 1991) contributed to the growing understanding of the key features of professional development. In 2002, Elmore suggested that this agreement about features of effective professional learning needs more empirical research. Within these features are the two aspects that I am interested in investigating; the first, falling under *duration*, is time and the second is collaboration, which is present in both *collective participation* and *active learning*.
Time

One of the features of effective professional development is duration (Desimone et al., 2002; Garet et al., 2001). As noted by Desimone et al., “Intellectual and pedagogical change requires professional development activities to be of sufficient duration, including both span of time over which the activity is spread (e.g., one semester or two school years) and the number of hours spent in the activity.” In this section, I will discuss literature concerning the latter.

John Dewey (1929) espoused that teacher learning thrives when it is an endless, flexible endeavor of inquiry. From his early days of influence in the development of teachers to Fullan’s (1993) text, Change Forces: Probing the Depth of Educational Reform, growth and improvement have required a significant amount of time to enable teachers to understand the expectations, reflect on their practices, and refine their skills in a continuous cycle. In the 1994 report of the National Education Commission on Time and Learning, the authors identify the issue of insufficient utilization of time as the impediment to the national goal of improving student learning:

we cannot get there from here with the amount of time now available and the way we now use it. Limited time will frustrate our aspirations. Misuse of time will undermine our best efforts… both learners and teachers need more time, not to do more of the same, but to use all time in new, different, and better ways. The key to liberating learning lies in unlocking time. (p. 9-10)
For school districts seeking successful educational reform, creating on-going professional learning yields a change and an improvement in teacher practice that results in increased student learning; when achieved, this outcome is not just superficial and not just within an individual teacher’s classroom, but across the entire school (Joyce & Showers, 1995; Stoll, Fink, & Earl, 2003).

In 1989, Carpenter, Fennema, Peterson, Chiang, and Loef conducted one of the first studies showing the relation between a professional development activity’s number of contact hours and its impact on the participating teachers’ knowledge, skills, and practices as well as their students’ growth. This experimental research included 40 mathematics teacher volunteers from Wisconsin elementary schools. Twenty of the teachers were randomly assigned to the treatment group and participated in 80 hours of professional development; the other half attended for a total of four hours. All of the teachers were observed throughout the next school year to assess their classroom practices, and their students completed pre- and post-standardized assessments. Through examination of the classroom observation data and analysis of variance (ANOVA) of the effects for the teachers and their students’ achievement, it was found that the teachers in the treatment groups who participated in the 80 hours of professional development demonstrated better understanding and problem solving strategies in mathematics and their students performed higher on the assessments than the group who attended less total hours of professional development activity.
In their comprehensive analysis of the federal government’s Eisenhower Program, Garet, Birman, Porter, Desimone, and Herman (1999) examined the extent that the program supported high quality professional development, including the amount of time spent in the funded activities. During the 1997-98 school year, the researchers used national probability sampling to collect data through telephone interviews with 363 school districts plus 92 institutes of higher education participants and collected surveys from 1,027 teacher participants in 657 funded activities. The researchers compiled data on the activities and found that district activities averaged 25 hours and higher education averaged 51 hours. By analyzing the collected interview and survey data, these average hours were found to contribute to the effectiveness of the professional development efforts to change participants’ knowledge, skills, and practices. The higher education programs, which involved more contact hours, were rated as more effective.

National Science Foundation Data Studies

Several studies (Banilower, Heck, & Weiss, 2007; Heck, Banilower, Weiss, & Rosenberg, 2008; Suppovitz & Turner, 2000) used data from the National Science Foundation’s (NSF) Local Systemic Change through Teacher Enhancement Initiative (LSC). The LSC program provided funding for the improvement of science, mathematics, and technology teaching at whole schools or within school districts through teacher professional development. As discussed next, these studies included investigations into the contact hours of the LSC activities.
In an investigation conducted by Banilower et al. (2007), the teacher self-reported data collected from 1997 to 2003 that included responses from LSC participants in 48 science activities across America was studied; ultimately surveys from 18,657 science teachers in kindergarten through eighth grade classroom were included. Using multi-level regression models analyzed with HLM and Structural Equation Modeling (SEM) to examine relations among the hours of professional development and eight additional NSF identified outcomes related to teachers’ attitudes, preparedness, and instructional practices, the researchers found that an increase in the hours that teachers participated in professional learning was positively related to all of the variables studied. A mean of 32 contact hours was calculated and the higher scores on the eight other variables were statistically significant at this number of hours; the impact plateaued at 100 hours.

Heck et al. (2008) completed a similar study using about 18,000 survey responses from teachers of mathematics in kindergarten through 12th grade classrooms across 48 of the LSC programs around the United States. The mean number of hours of participation in the professional development for grades kindergarten through eight was 43 hours; for grades six through 12, the mean was 39 hours. The analysis, using HLM revealed that when the contact hours of the professional development reached the means, there was a statistically significant positive relation to the teachers’ attitudes, preparedness, and classroom practices.

Both longitudinal studies of the NSF’s LSC initiatives (Banilower et al., 2007; Heck et al., 2008) demonstrated that the extent of teachers’ participation in professional
development activities that occur for more than 32 hours relates positively to an increase in the teacher’s learning and their perceptions about their practice.

In 2000, Supovitz and Turner investigated the relation between LSC professional development programs and changes in teaching practice using self-reported survey data collected in 1997 from 3,464 science teachers and 666 principals in 24 communities across the United States. The activities varied widely and provided a “rare representative sample of teachers with varying levels of formal exposure to high quality professional development” (p. 968). The researchers’ analysis employed HLM to investigate the relation between the professional development and two reforms, inquiry-based teaching practices and investigative classroom culture. The researchers categorized the contact hours as follows: 1-19 hours, 20-39 hours, 40-79 hours, 80-159 hours, and more than 160 hours. Accounting for both teacher and school characteristics, results indicated that the participating teachers’ application of the professional learning content into their classrooms occurred at 40-79 hours. A substantive positive impact on practice was shown when the activity was 80 hours or longer.

Regional Laboratory Southwest and Related Studies

In 2007, Yoon, Duncan, Lee, Scarloss, and Shapley published their comprehensive study on effective professional learning through the Regional Laboratory Southwest. Their meta-analysis ultimately included 907 unique, published research studies that investigated the empirical link between professional development and student
achievement. The researchers developed a systematic protocol to ensure that they included all relevant research, then screened and coded the possible studies to ensure that these standards were met. They established an improvement index and labeled effect sizes as 0.25 or greater as important findings. From their review, the researchers identified categories of time as follows: 5-14 hours showed no positive effects, 15-29 hours showed small increases, and 30-100 hours showed significant effects on student achievement. Across the studies, the mean of 49 hours is noted; as it is at this point that the average student improvement gains of 21 percentile points were seen. The literature included in Yoon et al. that is relevant to this study is included below.

In an experimental study, Merek and Methven (1991) investigated the relations among teachers’ attitudes and implementation of professional development. Thirty-two kindergarten through fifth grade teachers were in the study; 16 participated in the 100-hour professional development activity, the others did not, but were in the control group because their student demographics were similar. Teacher questionnaires and classroom observations following the professional development as well as student pre- and post-test scores were analyzed; the research indicated significant increases in student learning as well as greater teacher understanding and changed classroom practices in the participants as compared to the control group.

Also, McGill-Franzen, Yokoi, Brooks, and Allington (1999) conducted experimental research on the effects of enhancing teachers’ understanding of using classroom libraries to create rich literacy instruction in six elementary schools in a large
district on the East coast. Through a stratified randomization process, 18 kindergarten teachers were assigned to either of three treatments. For the professional development component of this investigation, the participating teachers attended 30 hours of professional development; the other groups did not. Using pre-and post-test data from all of the students taught by teachers in the study, analysis of variance (ANOVA) determined that students of teachers who received the professional development achieved significantly higher.

There is also research examining professional development activities that were not of sufficient length to impact changes in teacher practice or student learning (Duffy et al., 1986). The authors conducted an experimental study of 22 volunteer fifth grade teachers at large urban school district in Midwest. The participants were randomly assigned to treatment and control groups; the treatment groups received 10 hours of professional development on classroom reading comprehension strategies, whereas the control group did not. Using analysis of covariance (ANCOVA) on the pre- and post-tests of students from both groups, no significant achievement gains were made by the students of the teachers who received the treatment.

In 2009, the National Staff Development Council (now Learning Forward) supported an extensive study on professional development in the United States and around the world that was conducted by Wei, Darling-Hammond, Andree, Richardson, and Orphanos. The researchers found that in countries that consistently rank high on international measures, such as PISA (Programme for International Student Assessment)
or TIMSS (Third International Math and Science Study), they have established “time for professional learning and collaboration built into teachers’ work hours” (p. 18).

Collaboration

In his study of learning, Russian psychologist Lev Vygotsky proposes that social interchange is required to develop an understanding of ourselves and the world that we inhabit, and through our interactions with others we are able to articulate and enact change (1978). This invaluable social interaction, this idea of collaboration, is a mainstay in the development of educators and aptly defined by Bruner (1996) as “sharing the resources of the mix of human beings involved in teaching and learning” (Bruner, 1996, p. 87). In 2004, The Teaching Commission, a group of nineteen leaders in government, business, and education, published a report to provide policy recommendations designed to increase student learning; the report concluded that, "professional development should be aligned with state and district goals and standards… and should also involve opportunities for collaboration so that teachers can learn from each other” (p. 49). DuFour (2005) defined “powerful collaboration” as a “systematic process in which teachers work together to analyze and improve their classroom practice” (p. 36). This method is a divergence from typical educator learning where teachers “worked in isolation and pursued their own professional development [and] their learning has benefited them individually and the students assigned to their classes” (Hirsch, 2009, p. 12).
Collaboration provides an isolated and unprepared teacher with “a network of collegial support” (Leko & Brownwell, 2009, p. 66) that stretches across disciplines and areas of specialty for the improvement of a school’s program. Schmoker (2005) espouses that “teachers learn best from other teachers, in settings where they literally teach each other the art of teaching” (p. 141), making collaboration a potent instrument for professional learning as it pushes the individual into thinking beyond their own classrooms (Lieberman & McLaughlin, 1992); consequently, schools and districts are encouraged to ensure that interactive, community building and socially based components of collaboration are present in their professional development programs (Cochran-Smith & Lytle, 1999).

In 1998, Pounder studied teachers at middle schools, specifically investigating those who organized formally into teacher teams for collaboration on curriculum coordination, student interventions, and other aspects of the teachers’ work. Through analysis of teacher survey data from teachers in schools that teamed and in schools that did not, the research indicated that the teaming teachers had increased classroom skills and understanding of student learning, in addition to having greater knowledge of the practices of other teachers within their building. Contending that the “tighter connection between teachers’ work and student outcomes” (p. 66) resulted from the intentional collaboration.

According to King and Newmann (2000), when educators are collaborating, they are most likely to learn. The researchers studied nine urban elementary schools identified
because of their promising approaches to professional development in national reform projects that included comprehensive state accountability mandates and school based initiatives. Two of the schools effectively increased the knowledge, skills, and dispositions of teachers through the development of a strong professional community by promoting collaboration. The authors concluded “high capacity requires strong individual staff competence directed toward focused and sustained collective purposes and supported through reflective collaboration” (p. 578). This was achieved even though the professional learning activities were approached differently, with one utilizing an external provider and the other internal resources.

As researchers at the Elementary and Middle Schools Technical Assistance Center, a five year effort between the American Institutes for Research and the U.S. Department of Education’s Office of Special Education Programs, Gersten and Dimino (2001) worked with kindergarten and first grade teachers with the goal of sustained use of research based practices in reading through professional learning focused on promoting collaborative communities of practice. Their qualitative case study research showed that sixteen teachers across five schools working together to implement changes in their knowledge and classroom practices resulted in improved reading outcomes and “an immediate reduction in special education referrals for reading disabilities in the primary grades” (p. 129).

Concurrently, Saxe, Gearhart, and Nasir (2001) studied the influence of professional development programs on student learning of fractions. Working with 23
randomly assigned elementary school teacher volunteers, the researchers used an experimental model utilizing two different professional development treatments for the study. In one group, the teachers received traditional, lecture style professional development, whereas the other experienced an intentionally collaborative professional development experience. Using analysis of covariance (ANCOVA) with classroom mean posttest scores, it was found that students of the teachers who participated in the collaborative professional learning had significantly higher achievement.

In their examination of the Australian Government Quality Teacher Program, Ingvarson, Meiers, and Beavis (2005) considered the structural and process features of the program’s professional development activities. This correlational research used block-wise regression to analyze self-reported data from 1,731 teachers involved in 40 projects aimed at improving teaching skills. The researchers indicated that professional development projects that provided teachers opportunities to collaborate with colleagues, including discussion about teaching practices and student learning as well as occasions to share best practices, significantly increased teachers’ knowledge and impacted positively on changing their classroom practice.

In 2007, Goddard, Goddard, and Tschannen-Moran found a positive relation between teacher collaboration and student achievement. Their empirical study used HLM to analyze student achievement results on standardized tests in randomly selected elementary schools from a large urban school district in the American Midwest; ultimately 47 schools, 452 teachers and 2,536 fourth grade students were included in the
sample. The teachers completed an anonymous survey with questions about the extent of collaboration found within their schools. After adjusting for student characteristics and controlling school contexts, the researcher found that students in schools with high levels of teacher collaboration had higher results on standardized tests.

Additionally, Saunders, Goldenberg, and Gallimore (2009) studied teacher collaboration at 15 Title I elementary schools in a large, urban district in Southern California. The five-year quasi-experimental investigation compared nine participating schools to six comparison schools with similar student demographics. The treatment group received professional development around collaborative teaming in two phases; the first two years were devoted to principal learning and the last three years included the teachers and the principals in school-based professional development activities designed to increase their collaboration effectiveness. Results indicated that the students in the schools that participated in the collaborative teaming professional development achieved higher standardized tests results.

In 2009, the National Staff Development Council (now Learning Forward) supported an extensive study on professional development in the United States and around the world that was conducted by Wei et al. One of their key findings was that American teachers report little professional collaboration, as this expectation is not the tradition in the profession. Contrasting this, nations that are higher achieving on international assessments prioritize teacher collaboration as their norm and regularly
dedicate opportunities for collaboration around instructional issues during the workday (Wei et al., 2009).

Summary of the Literature

The expectations of American educators have changed dramatically through our history, growing from a position of happenstance in colonial times (Fraser, 2007, Sklar, 1973) to an intentional profession that requires specific learning and continued professional development today (Darling-Hammond, 2008). In the early 1800’s, the norm of underdeveloped educators was criticized (Carter, 1826) and teacher preparatory programs were created to provide a standard of knowledge, skills, and values for future educators (Beecher, 1829; Previte, 2013; Sklar, 1973); however, most did not have the benefit of the pre-service programs (Hoffman, 2003), so states and school districts created Teacher Institutes that were generally organized by individual districts over a few days in the summer to develop the teachers working in their schools (Richey, 1957). While the teacher Institutes continued as the standard format for in-service teacher development through the 1920s (Fraser, 2007), university involvement with the education of teachers evolved (Goodchild, 2006). Academics debated the required core content and fields of study were developed, which assisted teacher learning by bridging the gap from the theories researched at the universities and their application in the everyday practice of educators (Lagemann, 2000). By the 1950s, teaching was recognized as an intensive endeavor that needed a solid base of understanding and skills (Woodrig, 1957), as well as continued professional learning, which teachers embraced as they participated in
university pre-service and graduate programs (Snyder, 1993) as well as continued participation in the traditional Teacher Institutes (Sykes, 1996). As the 20th Century arrived, student accountability initiatives further transformed the expectations on teachers and professional development processes, such as the traditional Teacher Institutes, began to be researched (Stein, Smith, and Silver 1999).

The research of teacher development procedures illuminated that effective professional learning should contain intentional, continuous opportunities that occur within a community of learners and encourage transformational growth over the course of an educator’s career; however, teachers were not experiencing this construct (Wei, Darling-Hammond, & Adamson, 2010). Like the teaching of students, the professional development process does not have an explicit formula; it requires local input, attention to teaching content, understanding of the local context, and on-going evaluation in multiple ways, including assessment of teacher and student growth (Cohen and Hill, 2001; Desimone, 2009). Because of these complexities, directly connecting the outcome of participation in professional development activities is difficult (Loucks-Horsley & Matsumoto, 1999). Nonetheless, there are specific features that have been established that require consideration for professional development to be effective, the structural, which includes reform type, duration, collective participation, as well as the core components of active learning, coherence, and content focus (Desimone et al., 2002, Garet et al., 2001). Within these features are the two aspects that I am investigating; the first, falling under duration, is time and the second is collaboration, which is present in both collective participation and active learning.
To be effective in growing teacher and student learning, a significant amount of time must be spent in professional development activities (Desimone et al., 2002; Garet et al., 2001). Teachers do not gain from experiences that last under 14 hours and students do not benefit from the efforts (Yoon et al., 2007). When the activities are 15 to 29 hours, teachers’ knowledge, skills, and practices change and small gains in student learning occur (Garet et al., 1999). As the amount of time grows to over 30 hours, teacher and student learning escalate as well (Yoon et al., 2007). At this length of time, teachers’ attitudes and understanding improve, as they are able to successfully implement the content of the professional development (Banilower et al., 2007; Heck et al., 2008) and increases in student achievement occur (McGill-Franzen, 1999; Merek and Methven, 1991). Positive student outcomes are particularly noted at 49 hours (Yoon et al., 2007).

In addition to the amount of time required, another aspect of effective professional learning is the opportunity for the educators to collaborate and learn from one another. Generally, the development activities that teachers attend do not involve collaboration (Hirsch, 2009) even though researchers have found that it is needed to push individual thinking, student growth, and school reform efforts (Lieberman & McLaughlin, 1992; Saunders, Goldenberg, and Gallimore, 2009; Schmoker, 2005). Collaboration takes many forms, including discussions around curriculum, pedagogy, and students. When it is specifically and strategically included as part of the professional development activity for teachers within or across schools (Pounder, 1998), as a compliment to district, state, and federal initiatives to (King & Newmann, 2000), or as a means to share practices (Gersten & Dimino, 2001), collaboration improves teacher
learning and student outcomes (Ingvarson, Meiers, and Beavis, 2005; Saxe, Gearhart, and Nasir, 2001). The present is an investigation into these variables, (1) time and (2) collaboration, in one urban school district in the American Midwest; the methodology used is described in the next chapter.
Chapter 3: Methodology

The purpose of this chapter is to discuss my approach to the collection and analysis of the data for this study. The chapter begins with a review of my research questions. Then, I provide a description of the district, specifically the demographics of the students and the educators, the make-up of the schools, and the district entities that provide professional development. Next, I illustrate how and why the data is collected within the district. Finally, I describe my analysis process.

Research Questions

This research is an empirical case study examining how one large, urban school district distributes its professional development activities in terms of time and collaboration. Secondarily, the association between time and collaboration is explored. The following research questions guide this investigation:

1) What is the time spent in professional learning activities?
   a. What is the time spent in professional learning activities that are created by schools?
   b. What is the time spent in professional learning activities that are created by feeders?
c. What is the time spent in professional learning activities that are created by departments?

d. What is the association of the time spent in activities created by schools, feeders, and departments?

2) What are the participants’ perceptions of collaboration during the professional learning activities?

   a. What are the participants’ perceptions of collaboration during professional learning activities that are created by schools?

   b. What are the participants’ perceptions of collaboration during professional learning activities that are created by feeders?

   c. What are the participants’ perceptions of collaboration during professional learning activities that are created by departments?

   d. What is the association of participants’ perceptions of collaboration during the professional learning activities that are created by schools, feeders and departments?

3) What is the association of time and perceptions of collaboration in professional learning activities?

   a. What is the association of time and perceptions of collaboration in professional learning activities that are created by schools?

   b. What is the association of time and perceptions of collaboration in professional learning activities that are created by feeders?
c. What is the association of time and perceptions of collaboration in professional learning activities that are created by departments?

d. What is the association of time and perceptions of collaboration in all of the district’s professional learning activities?

Participants

The setting for this study is a large, urban school district located in the American Midwest. To provide context for the information about the work of the educators who participated in the professional development activities that are the focus of this study, demographic information about the district’s students is shown in Table 3.1. During the 2012-13 school year, the district served a total of 52,851 students; 51% of the students were male and 49% were female. Within this large student population, 18% were identified as gifted and talented and 16% received special education services. As is typical of urban settings, this district had a large number of students, 36,467, eligible for free and reduced priced meals and a total of 34,354 students who were designated as minorities. Additionally, the district’s overall student mobility rate is 20%; the district calculated this by dividing the opening day enrollment number by the number of new students plus the number of withdrawals that occurred throughout the school year.
<table>
<thead>
<tr>
<th></th>
<th>Total</th>
<th>Percentage</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>General Information</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Male</td>
<td>26,954</td>
<td>51%</td>
</tr>
<tr>
<td>Female</td>
<td>25,897</td>
<td>49%</td>
</tr>
<tr>
<td>Identified as Gifted &amp; Talented</td>
<td>9,513</td>
<td>18%</td>
</tr>
<tr>
<td>Special Education Services</td>
<td>8,456</td>
<td>16%</td>
</tr>
<tr>
<td>Free and Reduced Price Meals</td>
<td>36,467</td>
<td>69%</td>
</tr>
<tr>
<td>Student Mobility</td>
<td>10,570</td>
<td>20%</td>
</tr>
<tr>
<td><strong>Student Ethnicity</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>African-American</td>
<td>30,654</td>
<td>58%</td>
</tr>
<tr>
<td>Caucasian</td>
<td>13,741</td>
<td>25%</td>
</tr>
<tr>
<td>Multi-racial</td>
<td>2,643</td>
<td>5%</td>
</tr>
<tr>
<td>Asian</td>
<td>1,057</td>
<td>2%</td>
</tr>
<tr>
<td><strong>English as a Second Language (ESL)</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Speak ESL</td>
<td>6,342</td>
<td>12%</td>
</tr>
<tr>
<td>Receive ESL Services</td>
<td>3,171</td>
<td>6%</td>
</tr>
<tr>
<td>Have Limited English Proficiency</td>
<td>5,285</td>
<td>10%</td>
</tr>
<tr>
<td><strong>Total Students</strong></td>
<td>52,851</td>
<td>100%</td>
</tr>
</tbody>
</table>

To meet the needs of these students, the district had a full time staff of over 7,500 employees. This study focuses on the professional development of the 4,188 educators; demographic information about these educators is seen in Table 3.2. In this district, most of the educators are female (73%), Caucasian (63%), and hold at least a Master’s Degree (61%).
Table 3.2. 2012-13 Educator Demographic Data

<table>
<thead>
<tr>
<th></th>
<th>Total</th>
<th>Percentage</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>General Information</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Administrators</td>
<td>303</td>
<td>7%</td>
</tr>
<tr>
<td>Teachers</td>
<td>3,885</td>
<td>93%</td>
</tr>
<tr>
<td>Male</td>
<td>1,131</td>
<td>27%</td>
</tr>
<tr>
<td>Female</td>
<td>3,057</td>
<td>73%</td>
</tr>
<tr>
<td>Hold a Master’s Degree or Higher</td>
<td>2,555</td>
<td>61%</td>
</tr>
<tr>
<td><strong>Educator Ethnicity</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>African-American</td>
<td>1,466</td>
<td>35%</td>
</tr>
<tr>
<td>Caucasian</td>
<td>2,638</td>
<td>63%</td>
</tr>
<tr>
<td>Multi-racial</td>
<td>54</td>
<td>1%</td>
</tr>
<tr>
<td>Other</td>
<td>30</td>
<td>1%</td>
</tr>
<tr>
<td><strong>Total Educators</strong></td>
<td>4,188</td>
<td>100%</td>
</tr>
</tbody>
</table>

During the 2012-13 school year, the district had 114 schools of various grade configurations as seen in Table 3.3. With input from the staff and community, the district’s Board of Education determine the grade levels of the schools in accordance with their fiscal obligations and programmatic decisions; students may apply to attend any school in the district through a process called “school choice” or they can attend the school in the neighborhood where they live. The district categorized their schools into elementary, middle and high schools. Elementary schools were those that the grades of the students were configured between kindergarten (K) and eighth grade; the district had a total of 73 elementary schools. The district’s 19 middle schools were only grades six through eight. The remaining 22 schools, configured with grades six through 12, were called high schools.
Table 3.3. 2012-13 School Grade Levels and Numbers of Buildings

<table>
<thead>
<tr>
<th>School Grade Levels</th>
<th>Number of Buildings</th>
</tr>
</thead>
<tbody>
<tr>
<td>Kindergarten through Grade 5</td>
<td>64</td>
</tr>
<tr>
<td>Kindergarten through Grade 6</td>
<td>4</td>
</tr>
<tr>
<td>Kindergarten through Grade 8</td>
<td>5</td>
</tr>
<tr>
<td>Grade 6 through Grade 8</td>
<td>19</td>
</tr>
<tr>
<td>Grade 6 through Grade 12</td>
<td>2</td>
</tr>
<tr>
<td>Grade 7 through Grade 12</td>
<td>1</td>
</tr>
<tr>
<td>Grade 9 through Grade 12</td>
<td>19</td>
</tr>
<tr>
<td>District School Total</td>
<td>114</td>
</tr>
</tbody>
</table>

Understanding general information about the students, educators, and school buildings in the district sets the context to understand the district’s organization of professional development. The district’s board of education allocated federal, state, and local dollars for professional development activities to advance educator and student learning. The activities occurred within and after the school day, on Saturdays, and online. When an activity occurred within the contractual work time of the staff, they were expected to attend. If the activity occurred outside of the school day, the expectation for attendance depended on the design of the activity and participants may or may not have received compensation based on the situation. The district enlisted the services of internal staff and external consultants to coordinate and facilitate their professional development activities; this work was sometimes compensated, but there was not a standard district expectation. The district identified three types of activities according to how they were created: (1) at school level, (2) by a feeder pattern, or (3) by a district department. For this study, the types will be referred to as (1) schools, (2) feeders, or (3) departments.
At the school level, professional development activities were organized in alignment with their goals and the needs of their students and educators. With 114 schools, there existed a wide variety of activities with various content and multiple configurations for participants. Generally, the content of the activities was designed to assist educator learning about federal, state, or district expectations and the program of the school, such as Science, Technology, Engineering and Math (STEM), Arts Impact, or Literature Based. Schools selected the participant design as well, which may have involved an entire staff, or smaller groups of teachers who shared academic content, grade levels or students.

During the 2012-13 school year, the district enacted a structural and conceptual initiative that organized all of the schools into “feeder patterns.” The feeder initiative grouped schools into units based on either geographic location or programmatic similarities. Conceptually, the initiative aligned staff and resources to the students who began in elementary schools that were identified to “feed” into a specific middle and then the high school. Comparatively, a small town may have only one high school from which all children in the town graduate after attending the elementary and middle schools closest to their homes. In this large, urban district, the different elementary and middle schools “feed” into a total of twenty-two high schools. Led by each high school, identified leaders from all of the schools in the feeder worked together to provide professional development activities designed to increase the effectiveness of their educators with the students who attended their schools.
Within the district’s academic services, each department had responsibility for the creation of relevant professional learning activities in alignment with their programming responsibilities. In the large district, there were many different departments, such as Reading, Mathematics, Science, Social Studies, Foreign Language, Staff Development, English as a Second Language, Special Education, Gifted and Talented, or Instructional Information Services, who offered professional development activities in various ways. Generally, departments brought educators from across the district together to learn about their content and to share best practices. A number of departments also utilized technology to assist in their professional development efforts, either through on-line courses or blended learning opportunities.

The professional development activities provided by the district were available to all of its educators. The teachers had access to activities at their school, in their feeder, and through the department relevant to their work. In this way, middle school math teachers may have the possibility of professional learning options at their schools, with the other middle school teachers in their feeder, and as provided by the district’s math department. The district does not have a minimum or maximum expectation of professional learning opportunities for its educators.
Data Collection

I investigated the professional development activities offered in the district during the 2012-13 school year using two variables, (a) time spent in the activities and (b) perceptions of collaboration of the participants in the activities. The data used is archival and analysis occurred after approval from the Ohio State University’s Institutional Review Board.

In the district, professional development activities were defined broadly. It is understood that educators may engage in many forms of informal professional learning such as discussions with colleagues, perusal of websites to seek lesson plans or content knowledge, participation in blogs, or reading related books and articles. These informal activities may be extremely helpful to the individuals that do them, but the district does not track them. The district does track formal professional learning activities for the purpose of accountability and planning in an electronic system called PD Planner. This tool has been purchased from a private vendor, SchoolNet, and is the district’s sole mechanism for the recording of professional development activities. Among the other district determined uses, the PD Planner tool maintains an online catalog of professional learning activities, tracks educator attendance at these activities, distributes the on-line evaluation of the activities, and houses the results.

Within the district, there is a group of teachers and administrators called the Local Professional Development Committee (LPDC) that utilizes the activity data in PD
Planner for teacher and principal license renewal and acts as a governing body of the professional learning. The state has specific laws around this work and the LPDC ensures that all legislative regulations are followed with integrity. The LPDC does not serve the role of affirming or endorsing the quality, nor are they the responsible for the outcome of professional learning activities. This function is left in the hands of the various schools, feeders, or departments that organize professional activities and is not a part of this study. LPDC does require that professional development activities used for licensure renewal are approved and they responsible for the accuracy of the information about the activities in the district.

The approval process begins with specific individuals, called Facilitators. A Facilitator submits an activity proposal, which includes various data pieces, into PD Planner. The submission includes data about the length of time and about who created the activity, delineated as the “type” of activity as described above: (1) school, (2) feeder, or (3) department. The LPDC grants reviews the submission and, if it meets the published criteria, approves the professional development activity to be held for district educators. Approved activities are then published in PD Planner’s on-line activity catalog for district educators to peruse. Whether the educators are expected to attend the activity or if it is voluntary, they sign up for professional development through PD Planner. Facilitators are required to keep sign-in/out sheets and enter this attendance into PD Planner when the activity concludes. Once attendance is submitted, the LPDC affirms the participants who attended a professional development activity and they receive the Continuing Education Units the state uses to meet educator licensure renewal criteria.
Continuing Education Units (CEUs) are provided to educators who participate in professional development activities based on the contact time that is spent engaged in the work. Sixty minutes (1 hour) of contact time equals one-tenth (0.1) of a CEU. This contact time is the actual time that the educators engage in the activity, not the registration, breaks, or lunch that may be a part of the experience; partial hours are rounded down to the nearest hour. Therefore, an activity that occurred for one day was awarded 0.6 CEUs. The LPDC grants CEUs in time increments from .1 (1 hour) to 3.0 (30 hours) during a school year and maintains this information connected to each activity and the hours that each educator attended in PD Planner. For the first variable in this study, the data is converted from CEUs into hours for each the professional development activities that occurred in the district.

In addition to the data regarding the amount of time that educators participate in professional learning activities, PD Planner also maintains an evaluation of each activity. For its own use and to meet the required guidance for state funding sources, the district aligned this evaluation to the state’s Professional Development Standards. After educator attendance at an activity is entered, the PD Planner system generates an email that contains the on-line questionnaire to the individual educators who participated. PD Planner collects and houses the answers anonymously, which maintains the validity of their responses (Ary, Jacobs, Razavieh, & Sorensen, 1979). In the district, it is not mandatory for participants to reply to the questionnaire; however, it is highly encouraged. The district, the departments, the feeders, the schools, and the individual facilitators use
the responses to the questionnaires specifically and collectively to review effectiveness and to inform future offerings.

The second variable in this study is the responses of the participants to one of the questions on the district’s professional learning activity evaluation, *Was the professional learning activity collaborative?* Participants are asked to designate their perception of collaboration during the professional development activity by selecting one of the following statements: (1) strongly disagree, (2) disagree, (3) agree, or (4) strongly disagree. These responses are linked in PD Planner to the specific activity.

Data Analysis

For this study, both descriptive and inferential statistics are used to examine the professional development activities attended by the district’s educators during the 2012-13 school year. The data analysis for each of the research questions is described below.

*Question 1: Time*

1) What is the time spent in professional learning activities?

   a. What is the time spent in professional learning activities that are created by schools?

   b. What is the time spent in professional learning activities that are created by feeder patterns during the professional development day activities?
c. What is the time spent in professional learning activities that are created by departments?

For the research questions related to amount of time spent in professional development activities, the analysis begins with determining the mean, standard deviation, minimum, maximum, and skewness in the number of hours of the activities in each type. Each of these measures has unique properties that make them useful in describing this data. King and Minium (2008) use a mechanical analogy, a see saw, to describe the mean as the balance point of a distribution. In this way, the calculated mean reflects exactness in determining the sum of the activities’ amount of time divided by the total number of the district’s professional learning activities. Standard deviation reveals the dispersion of the amount of time from the mean for the three types of activities. Determining the minimum and the maximum number of hours for the activity types tells additional information. The skewness quantified the extent the distribution of the activities differs from a normal distribution. To further analyze the hours in professional development activities, SPSS is used to conduct a one-way Analysis of Variance (ANOVA) and Tukey HSD post-hoc comparisons to analyze the means of the different types of activities.

As discussed in Chapter 2, the research shows that the amount of hours spent in professional learning activities can be compressed into categories of effectiveness: under 14 hours is not effective, 14-29 hours is effective, and more than 29 hours has shown to
be significantly effective. The hours of professional learning created by the different types of district entities are binned into these categories of time for this study’s analysis.

1(d) What is the association of the time spent in professional learning activities that are created by schools, feeders, and departments?

For this final research question concerning the district’s professional learning time, the chi-square test of association is used to determine association between the time spent in professional learning activities that are created by schools, feeders, and departments with the following hypotheses:

<table>
<thead>
<tr>
<th>Null Hypotheses</th>
<th>Alternative Hypotheses</th>
</tr>
</thead>
<tbody>
<tr>
<td>H₀: There is no association between the amount of time in professional learning activities that are created by schools, feeders, and departments.</td>
<td>H₁: There is some association between the amount of time in professional learning activities that are created by schools, feeders, and departments.</td>
</tr>
</tbody>
</table>

SPSS conducted the chi-square tests of association. The test statistic is compared to a critical value from Pearson’s chi-square distribution table at α = .05 with four degrees of freedom.
Question 2: Collaboration

2) What are the participants’ perceptions of collaboration during the professional learning activities?
   
a) What are the participants’ perceptions of collaboration during professional learning activities that are created by schools?
   
b) What are the participants’ perceptions of collaboration during professional learning activities that are created by feeders?
   
c) What are the participants’ perceptions of collaboration during professional learning activities that are created by departments?

The educators who participated in a professional learning activity were asked to respond to an electronic evaluation created by the district. One question on this evaluation is utilized in this study: Was the professional learning activity collaborative? Participants selected one of the following statements that were assigned a number for the purpose of data analysis: (1) strongly disagree, (2) disagree, (3) agree, or (4) strongly agree. This data is used to determine the response rate, response mean, and skewness according to the activity type and for all the district’s activities. To conduct additional analysis, SPSS is used to conduct a one-way Analysis of Variance (ANOVA) with Tukey HSD post-hoc comparisons to analyze the means of the responses to the collaboration within the activities.
2(d) What is the association of participants’ perceptions of collaboration during the professional learning activities that are created by the district?

For the final research question concerning collaboration, the chi-square test of association is used to determine if association existed between the participant’s perception of collaboration during the professional learning activities and the activity type.

<table>
<thead>
<tr>
<th>Null Hypotheses</th>
<th>Alternative Hypotheses</th>
</tr>
</thead>
<tbody>
<tr>
<td>$H_0$: There is no association between the perceptions of collaboration in professional learning activities that are created by schools, feeders, and departments.</td>
<td>$H_1$: There is some association between the perceptions of collaboration in professional learning activities that are created by schools, feeders, and departments.</td>
</tr>
</tbody>
</table>

Again, the chi-square tests are completed in SPSS. The test statistic was compared to a critical value from Pearson’s chi-square distribution table at $\alpha = .05$ with four degrees of freedom.
Question 3: Association of Time and Perceptions of Collaboration

3) What is the association of time and perceptions of collaboration in professional learning activities?

a) What is the association of time and perceptions of collaboration in professional learning activities that are created by schools?

b) What is the association of time and perceptions of collaboration in professional learning activities that are created by feeders?

c) What is the association of time and perceptions of collaboration in professional learning activities that are created by departments?

d) What is the association of time and perceptions of collaboration in all of the district’s professional learning activities?

For the third research question and sub-questions, the chi-square test of association was used to compute whether there is an association between the two categorical variables, (1) amount of time and (2) perception of collaboration for the three types of activities.

The null and alternative hypotheses are as follows:

<table>
<thead>
<tr>
<th>Null Hypotheses</th>
<th>Alternative Hypotheses</th>
</tr>
</thead>
<tbody>
<tr>
<td>( H_{0a} ): There is no association between the amount of time and the perception of collaboration in the professional learning activities that are organized by school.</td>
<td>( H_{1a} ): There is some association between the amount of time and the perception of collaboration in the professional learning activities that are organized by school.</td>
</tr>
</tbody>
</table>
H_{0b}: There is no association between the amount of time and the perception of collaboration in the professional learning activities that are organized by feeders.

H_{1b}: There is some association between the amount of time and the perception of collaboration in the professional learning activities that are organized by feeders.

H_{0c}: There is no association between the amount of time and the perception of collaboration in the professional learning activities that are organized by departments.

H_{1c}: There is some association between the amount of time and the perception of collaboration in the professional learning activities that are organized by departments.

H_{0d}: There is no association between the amount of time and the perception of collaboration in all of the district’s professional learning activities.

H_{1d}: There is some association between the amount of time and the perception of collaboration in all of the district’s professional learning activities.

SPSS is used for these final chi-square tests. The test statistic is compared to a critical value from Pearson’s chi-square distribution table at \( \alpha = .05 \) with four degrees of freedom for each. The following chapter discusses the results of the study.
Chapter 4: Results

This research is an empirical case study examining how one large, urban school district distributes its professional development activities in terms of time and collaboration. Secondarily, the association between time and collaboration is explored. This chapter presents the findings related to the following questions:

1) What is the time spent in professional learning activities?
   a. What is the time spent in professional learning activities that are created by schools?
   b. What is the time spent in professional learning activities that are created by feeders?
   c. What is the time spent in professional learning activities that are created by departments?
   d. What is the association of the time spent in activities created by schools, feeders, and departments?

2) What are the participants’ perceptions of collaboration during the professional learning activities?
   a. What are the participants’ perceptions of collaboration during professional learning activities that are created by schools?
b. What are the participants’ perceptions of collaboration during professional learning activities that are created by feeders?

c. What are the participants’ perceptions of collaboration during professional learning activities that are created by departments?

d. What is the association of participants’ perceptions of collaboration during the professional learning activities that are created by schools, feeders and departments?

3) What is the association of time and perceptions of collaboration in professional learning activities?

   a. What is the association of time and perceptions of collaboration in professional learning activities that are created by schools?

   b. What is the association of time and perceptions of collaboration in professional learning activities that are created by feeders?

   c. What is the association of time and perceptions of collaboration in professional learning activities that are created by departments?

   d. What is the association of time and perceptions of collaboration in all of the district’s professional learning activities?

Length of Time in Professional Learning Activities

As described in Chapter 3, the data on each professional learning activity in the district included the length of time it occurred in hours. In 2012-13, educators spent a
total of 10,534 hours in professional development. As displayed in Table 4.1, analysis of this variable begins with calculating the mean, standard deviation, minimum, maximum, and skewness of the activities in each type. To compare the means, a one-way ANOVA calculation reveals that the amount of time differs significantly across the three types of activities, \( F (2, 853) = 143.17, p < .001 \). Completion of Tukey HSD post-hoc comparisons suggest that activities created at the school (\( M = 18.00, 95\% \text{ CI} [16.78, 19.22] \)) lasted significantly longer than those created by the feeders (\( M = 6.00, 95\% \text{ CI} [6.00, 6.00] \)) and by the departments (\( M = 6.22, 95\% \text{ CI} [5.45, 6.98] \)), \( p < .001 \).

Professional learning activities created by schools were likely three times as many hours as those created by the feeders or by the departments. Feeder activities were always six hours long. Similarly, the data showed that even though the departments created activities that lasted up to 60 hours, the mean remains just above six hours long.

**Table 4.1. Activity Types and Number of Hours**

<table>
<thead>
<tr>
<th>Type (N)</th>
<th>Mean (SD)</th>
<th>Min</th>
<th>Max</th>
<th>Skewness (SE)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Schools (441)</td>
<td>18.00 (13.05)</td>
<td>1</td>
<td>64</td>
<td>0.27 (0.23)</td>
</tr>
<tr>
<td>Feeders (52)</td>
<td>6.00 (0.00)</td>
<td>6</td>
<td>6</td>
<td>-</td>
</tr>
<tr>
<td>Departments (363)</td>
<td>6.22 (7.40)</td>
<td>1</td>
<td>60</td>
<td>3.47 (0.13)</td>
</tr>
<tr>
<td>District Total (856)</td>
<td>12.28 (12.07)</td>
<td>1</td>
<td>64</td>
<td>1.12 (0.08)</td>
</tr>
</tbody>
</table>

The literature discussed in Chapter 2 revealed that the amount of time spent in activities can be binned into categories of effectiveness: under 14 hours is not effective, 14-29 hours showed small effects, and 30-100 hours showed the largest effects on student achievement (Yoon et al., 2007). The district’s professional development activities are
compressed into these time categories in alignment with this research and the examination of this data uncovered a trend. Considering all of the professional development activities in the district, 205 (24%) were longer than 29 hours. When activities were created at the school, 42% lasted longer than 29 hours, whereas 9% of the activities created by departments fell into this effective range. Feeder activities were all six hours in length and consequently were in the not effective category. Additionally, Yoon et al. (2007) noted that at 49 hours, student achievement gains of 21 percentile points were seen; the district had a total of six activities that were over 49 hours long.

The amount of professional learning time in the district is explored further by testing the association between two categorical variables, the number of hours and the type of activity. As seen in Table 4.2, chi-square results show a statistically significant difference in the type of activity and the amount of time, $\chi^2 (4, N= 856) = 224.46, p < .001$. Consequently, the null hypothesis is rejected; there is association between the amount of time in professional learning activities that are created by schools, feeders, or departments. Schools were more likely than the feeders or the departments to hold professional development activities that were over 14 hours in length, which is in alignment with the research. Departments held 29 activities out of a total of 363 that were 14 or more hours.
Table 4.2. Results of Chi Square Test for Types of Activities by Amount of Time in Hours

<table>
<thead>
<tr>
<th>Activity Type</th>
<th>Amount of Time</th>
<th>1-14</th>
<th>14.1-29</th>
<th>29.1 +</th>
</tr>
</thead>
<tbody>
<tr>
<td>Schools</td>
<td>202 (34%)</td>
<td>52 (82%)</td>
<td>187 (91%)</td>
<td></td>
</tr>
<tr>
<td>Feeders</td>
<td>52 (9%)</td>
<td>0 (0%)</td>
<td>0 (0%)</td>
<td></td>
</tr>
<tr>
<td>Departments</td>
<td>334 (57%)</td>
<td>11 (18%)</td>
<td>18 (9%)</td>
<td></td>
</tr>
</tbody>
</table>

Note. \( \chi^2 = 224.46 \), df = 4. Numbers in parentheses indicate column percentages. *\( p < .001 \)

Collaboration during Professional Learning Activities

As discussed in Chapter 3, another variable in this study is the participants’ perceptions of collaboration within the district’s professional learning activities. During the 2012-13 school year, a collective total of 20,049 educators attended professional development activities. Each participant was asked to respond to an evaluation that included the question, *Was the professional learning activity collaborative?* For this study, each of the participant’s responses is given a corresponding number: (1) strongly disagree, (2) disagree, (3) agree, and (4) strongly agree. As seen in Table 4.3, the total response rate for all of the activities was 30%. For each activity type, the mean, standard deviation, and skewness is calculated. To compare the means, a one-way ANOVA is used. The results indicate that participants’ perceptions of collaboration differed significantly across the three types of activities, \( F (2, 853) = 134.30, p < .001 \). Tukey HSD post-hoc comparisons indicate that activities created at the school (\( M = 3.30 \), 95% CI [3.25, 3.35]) were perceived as significantly more collaborative than those created by the feeders (\( M = 2.98 \), 95% CI [2.89, 3.07]) and by the departments (\( M = 3.04 \), 95% CI [2.99, 3.09]), \( p < .001 \).
Table 4.3. *Activity Participants and Responses*

<table>
<thead>
<tr>
<th>Activity Type</th>
<th>Participants</th>
<th>Responses</th>
<th>Response Rate</th>
<th>Response Mean (SD)</th>
<th>Skewness</th>
</tr>
</thead>
<tbody>
<tr>
<td>Schools</td>
<td>4,617</td>
<td>1,468</td>
<td>32%</td>
<td>3.46 (0.60)</td>
<td>-0.75</td>
</tr>
<tr>
<td>Feeders</td>
<td>3,711</td>
<td>961</td>
<td>26%</td>
<td>3.20 (0.63)</td>
<td>-0.56</td>
</tr>
<tr>
<td>Departments</td>
<td>11,721</td>
<td>3,633</td>
<td>31%</td>
<td>3.31 (0.64)</td>
<td>-0.60</td>
</tr>
<tr>
<td>District Total</td>
<td>20,049</td>
<td>6,062</td>
<td>30%</td>
<td>3.33 (0.64)</td>
<td>-0.63</td>
</tr>
</tbody>
</table>

Additionally, a chi-square test is used to explore the association between the perceptions of collaboration during professional development activities and the type of activity. Analysis of the frequencies of the mean reveals that there were no responses of strongly disagree. The remaining means were binned into categories:

- *Disagree*, from 2.0-2.9: the participants felt the activity was not collaborative
- *Agree*, from 3.0-3.9: the participants felt the activity was collaborative
- *Strongly agree*, from 4.0-4.9: the participants felt strongly that the activity was collaborative

As seen in Table 4.4, chi-square results show a statistically significant difference in the type of activity and the collaboration, $\chi^2 (4, N= 856) = 66.41, p <.001$. School-based professional development was perceived as being more collaborative, with participants strongly agreeing at a considerably higher percentage than in any other types of activities. Notably, professional development activities created by departments were not perceived as collaborative more often than those at the school or in the feeder. Accordingly, the
null hypothesis is rejected; there appears to be an association between the type of activity and the perception of collaboration within the activity.

**Table 4.4. Results of Chi Square Test for Types of Activities by Perception of Collaboration**

<table>
<thead>
<tr>
<th>Activity Type</th>
<th>Perception of Collaboration</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Disagree</td>
</tr>
<tr>
<td>Schools</td>
<td>14 (29%)</td>
</tr>
<tr>
<td>Feeders</td>
<td>3 (6%)</td>
</tr>
<tr>
<td>Departments</td>
<td>31 (65%)</td>
</tr>
</tbody>
</table>

*Note. χ² = 66.41, df = 4. Numbers in parentheses indicate column percentages. *p < .001

Association of the Length of Time and Perceptions of Collaboration

For the final research question in this study, the association of time and collaboration in professional development activities created by schools, feeders, departments, and for all 856 of the district’s activities is explored.

Beginning with the activities that were created at the school level, the data revealed that a vast majority of the participants felt that these professional development activities were collaborative at each category of time. As seen in Table 4.5, a chi square was performed to test this association of time and the collaboration, χ² (4, N= 441) = 8.25, p = .08. With this result, there is no association between the length of time and the participants’ perceptions of the collaboration within the activities that are created at the school level.
Table 4.5. Results of Chi Square Test for School Activities, Amount of Time by Perception of Collaboration

<table>
<thead>
<tr>
<th>Time</th>
<th>Disagree</th>
<th>Agree (%)</th>
<th>Strongly Agree (%)</th>
</tr>
</thead>
<tbody>
<tr>
<td>1-14 hours</td>
<td>9 (64%)</td>
<td>133 (45%)</td>
<td>60 (75%)</td>
</tr>
<tr>
<td>14.1-29.9 hours</td>
<td>1 (7%)</td>
<td>38 (8%)</td>
<td>13 (1%)</td>
</tr>
<tr>
<td>30+ hours</td>
<td>4 (29%)</td>
<td>108 (47%)</td>
<td>75 (24%)</td>
</tr>
</tbody>
</table>

Note. $\chi^2 = 8.25$, df = 4. Numbers in parentheses indicate column percentages.
*p < .05.*
** Results are not statistically significant.

For professional development created by the feeders within the district, the length of the activities was constant at 6 hours. Of the 52 activities, there were 3 that participants felt were not collaborative. The remaining 49 activities had the overwhelming response that the participants felt the activities in which they participated were collaborative. The planned chi-square statistic regarding the amount of time and the mean perception of collaboration could not be calculated for feeder pattern activities because there was only one category of time.

Next, the professional development activities created by the various departments are analyzed. As noted in Table 4.6, chi-square results show a statistically significant association between the hours of the activity and the collaboration, $\chi^2 (4, N=363) = 9.67, p < .05$; therefore, the null hypothesis is rejected. The professional development activities created by a department that were over 14 hours appear to be collaborative whereas those under 14 hours were not always perceived as collaborative. While statistically
significant, of the total 363 activities created by the departments, this calculation involves 29 activities within the 14.1-29.9 and the 30 or more categories of time.

Table 4.6. Results of Chi Square Test for Department Activities, Amount of Time by Perception of Collaboration

<table>
<thead>
<tr>
<th>Time</th>
<th>Perception of Collaboration</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Disagree</td>
</tr>
<tr>
<td>1-14 hours</td>
<td>31 (100%)</td>
</tr>
<tr>
<td>14.1-29.9 hours</td>
<td>0 (0%)</td>
</tr>
<tr>
<td>30+ hours</td>
<td>0 (0%)</td>
</tr>
</tbody>
</table>

Note. $\chi^2 = 9.67$, df = 4. Numbers in parentheses indicate column percentages. *$p < .05$*

For the final research question of this study, the association of time and perceptions of collaboration in all of the district’s professional learning activities was explored (see Table 4.7). The data shows that participants in 94% of the district’s professional development agreed or strongly agreed that the activity was collaborative. To statistically analyze the association of the amount of time and the collaboration within the activities, the chi square test was calculated using all of the district’s activities. The relation between these variables was significant, $\chi^2 (4, N=856) = 49.22, p < .001$. The null hypothesis is rejected; there is an association between the amount of time and the collaboration within the professional learning activities. During the 2012-13 school year, the district’s professional development activities that were longer than 14 hours, both those within the 14.1-29.9 and the 30 or more categories of time, appear to be perceived as more collaborative. When an activity was less than 14 hours long, the perception that the activity was not collaborative occurred slightly more often than when it was longer.
Table 4.7. Results of Chi Square Test for All District Activities, Amount of Time by Perception of Collaboration

<table>
<thead>
<tr>
<th>Time</th>
<th>Disagree</th>
<th>Agree</th>
<th>Strongly Agree</th>
</tr>
</thead>
<tbody>
<tr>
<td>1-14 hours</td>
<td>43 (90%)</td>
<td>444 (72%)</td>
<td>101 (52%)</td>
</tr>
<tr>
<td>14.1-29.9 hours</td>
<td>1 ( 2%)</td>
<td>48 ( 8%)</td>
<td>14 ( 7%)</td>
</tr>
<tr>
<td>30+ hours</td>
<td>4 ( 8%)</td>
<td>120 (20%)</td>
<td>81 (41%)</td>
</tr>
</tbody>
</table>

*Note. $\chi^2 = 49.22$, df = 4. Numbers in parentheses indicate column percentages. $^*p < .001$
Chapter 5: Discussion

Optimally, professional learning occurs as a community of professionals learn together about their curriculum and instructional techniques with opportunities to try new practices in a setting that is geared to celebrating learning at all levels (Joyce & Showers, 2002) and results in increased student achievement (Borko, 2004; Supovitz, 2001). This empirical study examines the professional development activities during one school year in one school district in terms of (a) time and (b) collaboration. These two variables are found within the growing consensus in the literature about the key features of effective professional development, which include reform type, duration, collective participation, active learning, coherence and content focus (Desimone et al. 2002; Garet et al. 2001). Secondarily, the association of these two variables was examined. The data from the school district added the additional component, the activity type, meaning who created the activity – schools, feeder, or departments. Three questions guided the research:

1) What is the time spent in professional learning activities?
   a. What is the time spent in professional learning activities that are created by schools?
   b. What is the time spent in professional learning activities that are created by feeders?
c. What is the time spent in professional learning activities that are created by departments?

d. What is the association of the time spent in activities created by schools, feeders, and departments?

2) What are the participants’ perceptions of collaboration during the professional learning activities?

a. What are the participants’ perceptions of collaboration during professional learning activities that are created by schools?

b. What are the participants’ perceptions of collaboration during professional learning activities that are created by feeders?

c. What are the participants’ perceptions of collaboration during professional learning activities that are created by departments?

d. What is the association of participants’ perceptions of collaboration during the professional learning activities that are created by schools, feeders and departments?

3) What is the association of time and perceptions of collaboration in professional learning activities?

a. What is the association of time and perceptions of collaboration in professional learning activities that are created by schools?

b. What is the association of time and perceptions of collaboration in professional learning activities that are created by feeders?
c. What is the association of time and perceptions of collaboration in professional learning activities that are created by departments?

d. What is the association of time and perceptions of collaboration in all of the district’s professional learning activities?

Interpretation of Findings

To change the practices of educators, a significant number of hours in learning activities are needed (Desimone et al., 2002; Garet et al., 2001). As described in Chapter 2, the amount of time spent in activities can be binned into categories of effectiveness: under 14 hours is not effective, 14-29 hours showed small effects, and 30-100 hours showed the largest effects on student achievement (Yoon et. al, 2007). In alignment with this research, chapters 3 and 4 discuss how the data on the length of time in this district’s professional development activities were collected and calculated for this empirical study.

The analyses uncovered that professional development activities developed at the schools in this district were more likely to correlate with the amount of time that research shows can lead to increases in teacher and student learning than those created by the feeders or the departments. Statistically, the ANOVA and chi-square test results confirmed that the schools were more likely to hold longer professional learning activities. Additionally, the mean length of time for school activities was significantly longer, at 18 hours, compared to the six hours for feeder and 6.2 hours for department
created activities. This finding reveals that the activities created by schools are in alignment with the research by Yoon et al. (2007) to have small effects on student achievement; whereas the number of hours that activities created by feeders and the departments would not have an effect. Additionally, around half of the activities created by the schools, 239 out of the total 441, were 29 hours or more; consequently only 239 are in the category of time that has been shown to yield significant effects on teacher and student learning.

Another aspect of effective professional development is collaboration, the process that brings teachers together to analyze and improve their practice (DuFour, 2005) and enables them to teach and learn from each other (Schmoker, 2005) for the benefit of their school and district (Cochran-Smith & Lytle, 1999). As discussed in Chapter 2, when teachers collaborate, they increase their capacity and pedagogical content knowledge (Gerten & Dimino, 2001; King & Newmann, 2000; Pounder, 1998) resulting in increased student achievement (Goddard et al., 2007; Saunders et al., 2009; Saxe et al., 2001). This study aligns to this research and explores the teacher self-reported perceptions of collaboration that occurred in the district’s professional development activities as described in Chapters 3 and 4.

In this district, after educators attended a professional development activity, they received an electronic questionnaire about the experience, which included the question, *Was the professional development activity collaborative?* For this study, the responses were assigned numbers: (1) strongly disagree, (2) disagree, (3) agree, or (4) strongly
agree. Analysis of these responses found a mean of over 3.2 for the perception of collaboration, in each type of activity, those created by the school, the feeder, or the department; therefore, the district’s professional development activities were generally perceived as collaborative. Further analysis revealed that activities created at the school were perceived as more collaborative than the activities that were facilitated by the feeders or by the departments. The data from the perceptions of departments’ activities showed that they were perceived as being the least collaborative.

For the final research question in this study, the association of time and collaboration in the professional development activity types and in all of the district’s activities was explored. As discussed in Chapters 3 and 4, the hypothesis was that there was no association between the two variables, and the chi-square test was utilized to test this hypothesis. The chi-square tests exposed interesting findings and contribute to the picture of professional learning in this district.

For activities facilitated at the schools, there was no association between the number of hours and the collaboration within the activities, as virtually all of the respondents to the questionnaire felt that the professional development that they participated in at their school was collaborative. All of the activities that were created by the feeder patterns were six hours long, so the statistical test could not be completed. When the department created the professional development, an association was found between the amount of time and the collaboration within learning activities. When the activity was longer, both those within the 14.1-29.9 and the 30 or more hour categories,
they appear to be more collaborative, whereas those under 14 hours were not; however, it should be considered that there were 32 out of 372 activities that were over 14 hours. In the final calculation between all of the activities in the district, results of the chi-square test indicated that there was an association between the amount of time and the collaboration in the professional learning. Noting that 94% of professional development in this district was perceived as collaborative, when an activity was less than 14 hours long, the perception that the activity was not collaborative occurred slightly more often than when it was longer.

The findings from the three questions in this study provide a picture of the district’s professional development during this school year. The activities created at the school level were the longest of the three type, which aligned with the research that showed increases in student achievement, and they were overwhelmingly perceived as collaborative, which is a necessary aspect for professional development to be effective at increasing teacher learning and student achievement. At a constant six hours, all of the feeder pattern professional development activities were not in alignment with the research on the necessary length of time and had the most occurrences of participant responses that indicated that the professional development was not collaborative. When departments created the professional development, the activities were collaborative but not long enough to impact the student achievement effects according to the literature. Overall, educators who attend the professional development in this district perceived the activities to be collaborative; however, with a mean of just over 12 hours, the district’s
professional development activities are not of a significant length that research has shown to positively impact student achievement.

The literature shows that effective professional learning results in increased teacher and student learning. Effective professional learning has multiple features, including the length of time and the collaboration within the activities. The analysis of this district’s professional development activities revealed that as the number of hours increased, the activities were perceived as more collaborative. Interestingly, there was more collaboration when the activities were more than 14 hours.

Limitations

This study contributes to the literature on effective professional development; however, there are a number of limitations in these finding to consider. The results of this empirical study are not generalizable to other districts, urban or not, because it was completed in a non-experimental setting utilizing pre-existing data. The reliability and validity of the data is questionable as it was not created, observed, or collected by the researcher. The data was collected through the district’s on-line tool, entered by the individuals in only this one school district. The capacity of individuals to utilize the tool and their motivations as they completed the information may have affected the findings. Additionally, this study does not examine the individual activities: the specific schools’, feeders’, or departments’ activities, the response rates within activities, or additional information that may add to the understanding of the professional development in this
district. Furthermore, the effects of other non-measured variables cannot be ruled out, as studying the amount of time and the perceptions of collaboration in consideration of the type of entity that created a professional development activity does not account for all of the mitigating factors that may be involved within this district.

Considering the findings, further research on the amount of time spent in professional learning activities in this district is needed. A deeper assessment of how the different types of activities are created and enacted would contribute to an understanding of the district’s culture and expectations for professional development. This analysis may lead to insight into why all of the feeder pattern activities were six hours and the district department activities had such a wide variation, from one to 60 hours, in their length of time. Additional exploration of the three types themselves would appropriately extend the analysis and could be of use as a means to further evaluate the time spent in professional learning activities in the district; this could include investigations of how the hours are delineated among the school levels (elementary, middle and high), geographic regions of the large city (feeder patterns in the north or west areas), and within and between individual departments (K-12 reading department activities or math and science departments).

Additionally, a more extensive tool would assist greatly in understanding the participants’ perceptions of collaboration. This tool should include a definition of collaboration, information about participants’ disposition and experience toward professional collaboration, an understanding of the knowledge that they gained through
pre- and post-assessments, and with whom they collaborated during the activity. Additional data on how and when collaboration occurs, as well as if professional collaboration was an intended outcome of the activity, would be essential to understanding its impact, and could lead to a more systemic approach that leads to collaborative professional development. Furthermore, the data used in this study does not delineate if the activity required attendance by the participant or was voluntary; this information would provide another layer of explanation about the culture of the district’s professional development and would assist in understanding the perceptions of the participants.

Implications

In my experience, professional development planning is not something that comes naturally, even to exceptional educators and experienced administrators. Like effective teaching, for the learning activities to be successful, the facilitators of effective professional learning must have an understanding of the content of the activity and the context of the participants. Additionally, facilitators must have knowledge of the features of effective professional development to ensure that the structure and core characteristics found in the literature (Desimone et al., 2002, Garet et al., 2001) are considered from the planning stages and implemented throughout the process to create settings that motivate the participants to construct their own knowledge and apply their changed understanding.
to their classrooms. Also like teaching, sophisticated understanding and expert implementation of professional development requires extensive study and practice to achieve.

This study may benefit teachers, principals, and district administrators in the creation of professional learning activities. The literature showed that increasing the amount of time in professional development activities increases the effectiveness, specifically teacher and student learning increased when the amount of time increased beyond 14 hours achievement (Banilower, Heck, & Weiss, 2007; McGill-Franzen, Yokoi, Brooks, & Allington, 1999, Yoon, Duncan, Lee, Scarloss, & Shapley, 2007). Additionally, the literature showed that activities that were collaborative also increased teacher and student learning (Cochran-Smith & Lytle, 1999; Goddard, Goddard, & Tschannen-Moran, 2007; Saunders, Goldenberg, & Gallimore, 2009). When analyzing this district’s professional development activities, results indicated that there was an association of the two variables in some of the data. While not a complete picture, figure 5.1 can serve as a mechanism to think about the associations between these two variables. While more extensive research is needed, considering the literature and the findings together may assist educators in the design of professional learning activities.
Conclusion

Meeting the diverse learning needs of students in today’s complex society requires educators to maintain a sophisticated understanding of their content and to employ successful teaching practices (Darling-Hammond, 2008). When schools and districts create effective professional development, teachers have the opportunity to advance their knowledge and skills so that all of their students can learn (Desimone et al. 2002; Garet et al. 2001). However, the options available to teachers in America are generally not in alignment with the literature on effective professional development (Wei, Darling-Hammond, & Adamson, 2010). The findings of this study of time and collaboration...
collaboration within professional development in one school district depict a comparable experience. While the activities were generally perceived as collaborative, it appears that the amount of time devoted to professional learning would not result in desired increases in teacher or student learning. More research is needed to understand the complete picture of professional development in this district and to provide resources for creating effective activities any school or district can access so their goals can be achieved.
References


