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AN INVESTIGATION OF THE RELATIONSHIP BETWEEN ELEMENTARY
TEACHERS' ASSESSMENT OF THE QUALITY AND NEED FOR PROFESSIONAL
DEVELOPMENT, THE LEVEL OF TEACHER SELF-EFFICACY EVIDENCED BY
FACULTY AND STUDENT ACHIEVEMENT OUTCOMES MEASURED SCHOOL-

WIDE

by

Trainer B. Kern

A Dissertation

Submitted in Partial Fulfillment of the

Requirements for the Degree of

Doctor of Education

Major: Instruction and Curriculum Leadership

The University of Memphis

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Dedication

First, I would like to thank God for allowing me the opportunity to stay healthy and focus on this dissertation for so long. Without your daily presence, none of this would have been possible. I would like to thank my wife Dolly and my two sons Rafael and Puppy (Boss) for the sacrifices you made throughout this process. Without all your support, I could not have made this difficult journey. I would also like to thank Tisha Towns, Vice-President at Regional One Health, for giving me a place of employment while I made this journey.

I would like to dedicate this project to my mother Cora and granny Rosie. Thank you mom and granny for all of your support throughout this endeavor; you have continually encouraged me to stay focused and to believe in God. I love you both and am very blessed to have you as my parent and grandparent. Finally, to our pastor Quinton Barlow, thank you for your prayers and encouragement throughout the process.

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Abstract

Kern, Trainer B. ED.D The University of Memphis, 2016. An Investigation of the Relationship Between Elementary Teachers' Assessment of the Quality and Need for Professional Development, the Level of Teacher Self-Efficacy Evidenced by Faculty and Student Achievement Outcomes Measured School-Wide. Major Professor: Dr. Beverly Cross, PH.D.

Despite the vast existing body of research on professional development and student achievement, little is known about how teachers' perceptions of professional development relate to other aspects of their classroom effectiveness. This research attempted to link elementary teachers' assessment of the quality of professional development, need for professional development and collective teacher efficacy with student achievement at their school. This research also examined the possible influence that teachers' number of years of experience, and their staying or leaving the teaching profession, have on their perceptions in relationship to student achievement. This quantitative study used secondary data analysis from the Measures of Effective Teaching (MET) Working Condition Survey and state achievements tests (2009-2010). The correlation with individual and school-level outcomes showed quality of professional development and collective teacher efficacy as the strongest relationship, though teachers' perceptions at the school level were linked with student achievement. When teachers were placed in subgroups based on years of teaching and professional development impact on student learning, correlations between quality of professional development scale means, sum of professional development needs and collective faculty efficacy means were statically significant in each subgroup. However, using the Fisher r to z transformation, tests of the difference between two independent variables showed no strength in their relationships. Finally, elementary teachers who remained at their

schools outperformed teachers who chose to leave the profession. Future research should focus on which specific types of professional development are essential to classroom teachers' needs.

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Chapter 1:

Introduction

In 1983, the National Commission on Excellence in Education provided a report, *A Nation at Risk: The Imperative for Education Reform*, to the U.S. Secretary of Education highlighting the fact that America's schools were failing and that the achievement of American students was rapidly falling behind student achievement in other nations. Because of the urgency set forth by *A Nation at Risk*, education reform became a top concern for Americans.

To pursue these reform efforts, educators, policy makers, and the federal government demanded that ongoing professional development for teachers should be the focus (Commissioner's Task Force on Quality Teaching and Learning, 2005; Forum on Educational Accountability, 2010; National Commission on Excellence in Education, 1983; National Commission on Teaching and America's Future, 2009; Obama, 2010; Schmoker, 2005).

For years now, national, state, and local politicians as well as educators (Garet, Porter, Desimone, Birman, & Yoon, 2001) have been developing new ways for American children to be taught and to learn in their local schools. According to Cuban (1993), if students are to meet the high standards set by their states and school districts, teachers are the links that will help them reach these goals. Teacher effectiveness is at the forefront of these ambitious education reforms (Garet et al., 2001). Optimally effective professional development for teachers is central to reform efforts. According to Hammond (2006), the demand for teachers is enormous, and standards for student learning are higher than they have ever been, due to changes in the American economy that require 21st century

workers and citizens to acquire more knowledge than before. Additionally, the job of teacher is a demanding one that poses substantial challenges in terms of content knowledge, pedagogical knowledge, teaching strategies and student management (Ross & Bruce, 2007). Ultimately, professional development resourcefulness will provide teachers with mastery experiences in the areas of content knowledge, instructional strategies, student management and classroom management. According to Salinas (2010), elementary school teachers need professional development to teach courses such as mathematics and reading. From their point of view, elementary school teachers are trained to teach all core subjects, but they have not developed specialized skills in the teaching of any one subject. Therefore, the goals of the education system and the role of teachers are to improve student performance.

Student Performance: School Structure and the Role of Teachers

Education systems are designed to be interactive environments involving students and teachers. Thus, schools are designed to give children multiple intellectual and social tasks on a daily basis (Davis, 2001). For years now, our education system has been engrossed with improving student performance as we continue to witness the rearrangement of schools and programs. Yet despite billions of dollars spent on education reforms, student performance has not seen much improvement (Harwell, 2003). Therefore, it is necessary to re-evaluate teachers' roles, especially since the education system needs educators who are open to change regardless of their formal job descriptions (Somech & Zahavy, 2000). Hammond (2000) emphasizes that as a country's standard of living becomes higher, education is vital to the success both of individuals and of the country as a whole. This means that citizens and workers must expand their

knowledge and skills to compete in today's society. Interestingly, in the 21st century, education systems are regarded as an industry (Khan, 2014). In this lens, it is essential to produce the best products: that is, teachers who trained well in the classrooms and will work efficiently towards making the teaching profession a long-term commitment.

In the education system, teachers ask students to carry out various academic and social tasks. Thus, the rapport between students and teachers can have an astounding effect on a school's success (Davis, 2001). Montalvo, Mansfield, and Miller (2007) support this observation, suggesting that teachers have influential authority in their classrooms. Students reap motivational and learning benefits when they have passionate, caring teachers. This is particularly clear in elementary schools, where the physical classroom setting consists of students in self-contained classrooms primarily interacting with a single teacher for six or more hours per day (Davis, 2001). The elementary school teacher of today wears many hats, serving as a caretaker, a guidance counselor, a disciplinarian, and even a gatekeeper to an individual's academic success.

Background

Within modern reform efforts, professional development has been seen as the primary vehicle to bring about needed changes in restricting and transforming schools. However, before changes could take place, lawmakers, legislators, funding agencies and the public wanted proof that professional development really makes a difference (Guskey, 1994). Guskey argues that because literature on professional development is so profuse, researchers and experts initially had a difficult time designing and implementing successful professional development programs. Later, in an extensive study of professional development, *Professional Development and Teacher Learning: Mapping*

the Terrain, Borko (2004) provided evidence that professional development can lead to teachers' improving their instructional practices and student learning.

As the movement toward modern reforms continues, pressure from stakeholders for schools to produce higher test scores and other accountability measures has increased. In addition, in 2002, another education reform was introduced, the No Child Left Behind (NCLB) Act (U.S. Congress 2001). The NCLB placed more emphasis on the historical context of reforms and changed the national definition of success in our schools (Johnson, 2011). In the same manner, according to Daniel, education researchers must continue to examine interventions on how to meet the new standards of accountability in helping students with their learning outcomes. One area that began to emerge as a focal point for educational reform efforts was teacher professional growth (Lee, Cawthon, & Dawson, 2013). Professional development took a central role in this movement (Sparks, 2002). Lee thinks that professional development opportunities should allow teachers to experience continual development in instructional skills and knowledge. Researchers begin to publish national reports validating the importance of professional development for teachers. An example can be seen in the report *Does Professional Development Change Teaching Practice? Results from a Three-Year Study* (U.S. Department of Education, 2000). This longitudinal study discusses the federal Eisenhower professional development program, which specifies that professional development consists of standard-based reform practices such as promoting active teacher learning, collective participation, and coherence (Porter, Garet, Desimone, Birman, & Yoon, 2000). Teachers used a variety of instructional strategies in the classroom that increased student outcomes, especially in their science and mathematics classrooms (Sparks, 2002). The author noted

that standards-based reform practices included teacher study groups, mentoring, internships, and resource centers. Another persuasive example is viewed in the National Education Goals Panel's report (NEGP Monthly, 2000). The panel recommended intense professional development for improved student achievement (Sparks, 2002).

According to Khan and Khan (2014), education has become globally competitive. Stakeholders and organizations demand noticeable learning outcomes from students. It is imperative that the nation get enthusiastic services from millions of teachers who have been efficiently trained in how to transmit knowledge to their students, so that the nation will continue to grow intellectually. Researchers' present observations are supported by the significant recent growth of informal and online professional development activities.

Statement of the Problem

Since *A Nation at Risk* (1983) highlighted major problems with America's education system and the poor performance of American students, policy makers have made numerous efforts to promote student achievement. One of these efforts is professional development, which has become "part of the job" for teachers across all levels of education. However, professional development is not as effective as it could be in improving student outcomes due to teachers' attitudes and some teachers not recognizing the need for this additional training and instruction. Teachers' negative attitudes toward professional development serve as impediments to the success of these efforts, indicating that the ultimate goals of promoting student achievement have not resulted.

In today's society, powerful teaching is critical in the classroom. Teachers are expected to provide students with the knowledge and skills they will need to function and

prosper in the workplace (Hammond, 2006). Teachers should be efficient enough to instill useful information in their students' minds in order to guide them in facing the long process of education.

Teachers' academic success in their individual classroom will greatly affect schools' ability to promote student achievement. One of the greatest challenges researchers face is to understand how school characteristics contribute to students' academic success (Goodard, Hoy, & Hoy, 2000). Researchers believe collective teacher efficacy could help explain how well a school functions as a social system. This functioning is heavily dependent on the belief system of the staff of the school. Based on their belief that shared goals and similarity of responsibilities across teaching positions are commonly found in elementary schools, Goodard et al. (2000) developed and administered a collective teacher efficacy instrument written to reflect a group orientation. They found that collective teacher efficacy is positively associated with student achievement in elementary schools.

Purpose of the Study

The purpose of the current study is to examine the relationship between professional developments, collective teacher efficacy and student achievement in elementary schools. The study planned to bolster the general link between teachers' engagement in and attitudes towards professional development and student achievement, variously measured. While prior studies are small-scale and mostly involve outcomes in a program evaluation setting, this study is more generic in character, employing standardized test achievement data as its major dependent variable.

Research Questions

Several research questions were developed to guide the current inquiry. These questions include:

1. What is the extent of the relationship among teachers' perceptions of the Quality of Professional Development, the Need for Professional Development, and the Collective Faculty Efficacy at their schools?
2. Among these variables, does the strength of the relationships differ by such teacher characteristics as total years of teaching experiences, number of years teaching at the same school, and perceived importance of promoting student learning?
3. What is the extent of the relationship between teachers' perceptions of the Quality of Professional Development, the Need for Professional Development, and the Collective Faculty Efficacy at their schools, and such school-level student achievement indices as AYP status and percent proficient in reading, math, science, and social studies?
4. Among these variables, does the strength of these relationships differ by the percentage of faculty whose professional intention is to keep teaching at the same school rather than to leave that school or district, or leave teaching altogether?

Limitations of the Study

As with any research, this study has limitations. These limitations include the following: (1) The study is limited to the responses of the elementary classroom teachers who invited and willing to participate in the study. (2) The study is limited by the accuracy of the responses of the elementary classroom teachers because if the study

participant does not complete all parts of the MET/Working Condition Survey, then responses cannot be documented.

Definition of Terms

The following concepts are used often throughout the current study:

Assessment: A variety of methods used to determine students' achievement of objectives.

Collective Teacher Efficacy: “The perceptions of teachers in a school that the efforts of the faculty as a whole will have a positive effect on students” (Goddard, Hoy, & Hoy, 2000, p. 480).

Content Knowledge: Knowledge of a specific subject or topic necessary to meaningfully understand it.

Professional development: “An ongoing process through which an individual derives a cohesive sense of professional identity by integrating the broad-based knowledge, skill, and attitudes within psychology with one’s values and interests” (Ducheny, Allezhauser, Cradell, & Schneider, 1997, p. 89).

Self-Efficacy: “Belief in one’s capabilities to organize and execute the courses of action required to produce given attainments” (Bandura, 1977, p. 3).

Student Achievement: Measurement of student progress toward specific learning objectives.

Teacher Efficacy: A teacher's “belief [in] his or her capabilities to bring about desired outcomes of student engagement and learning” (Moran & Hoy, 2001, p. 783).

Chapter 2

Literature Review

This chapter provides a review of the literature pertaining to the effect professional development has on elementary teachers' efficacy and student achievement as these teachers handle the difficult task of molding young minds. School satisfaction, for which teachers are somewhat responsible (Verkuyten & Thijs, 2002), is a key aspect of students' quality of life, as the school has an effect on a child's psychological well-being. According to Johnson (2011), educators assume that high-quality professional development fosters superior classroom teaching, which in turn will produce a high level of student achievement.

In addition, specific characteristics of professional development are discussed, along with the collective efficacy of elementary school teachers to aid in the identification of its impact on teachers and on student achievement. States and school districts are charged with instituting and leading professional development programs (some of them with federal funding support), which is designed to address major classroom needs for teachers. Ongoing professional development and the refinement of teachers' classroom efficacy are the main purposes of improving the quality and performance of our public schools and teachers (Blank & de las Alas, 2009). The relationship of professional development to teachers' collective efficacy and student achievement is discussed in this paper in order to indicate the importance of professional development programs that enhance educators' abilities.

Elementary School Teachers

The definition of elementary school teachers varies from state to state. For example, several states define “elementary” as grades K-8 (kindergarten through grade eight), while other states may define it as K-6 (U.S. Bureau of Labor Statistics [BLS], 2014). According to the BLS, a typical elementary school teacher is assigned to a single classroom of students who are currently in the same grade, but not necessarily on the same grade level. Typically, elementary school teachers instruct students in a variety of subjects ranging from language arts to social studies in a classroom setting on a daily basis. LaJevic (2013) states that elementary school teachers spend most of their school day in one classroom, and that these teachers are assigned as homeroom teachers who teach most academic subjects, except for classes that require more specific instruction (e.g., art, music, physical education).

An elementary school teacher is critical in a child’s life because these teachers are some of the first people these children will encounter in their entire lives. Elementary school teachers have many classroom job responsibilities beyond just teaching children (Quattlebaum, 2013). For example, after assessing the students’ strength and weaknesses in their academic domain, the elementary school teacher must plan and develop age-appropriate classroom lesson plans, which are essential to their learning. This logic is congruent with Shulman (1987), who emphasizes that a teacher must master the contents of his or her subject matter effectively before delivering information and knowledge to the students. In this lens, a teacher can help refine his or her students’ personality. It is very important that elementary school teachers know exactly what they are doing at this stage, concerning engaging a classroom of students in their lessons (Lundi & Limberg,

2008). Likewise, Richardson (2003) suggests it is actually at this stage that children begin to gather and input knowledge in their brain so it can serve as a guide in honing their personality and life.

Elementary school teachers help children learn important things in a way that is appropriate for their understanding and level. Elementary school teachers must use the right materials and tools to motivate children to study, since the elementary stage is still a playful one for children. They may want to sing songs, dance to music, and make science experiments and artworks (Reeve, Bolt, & Cai, 1999). Elementary school teachers must be constructive and use fun and exceptional methodologies to help keep each student engaged in the process of learning (Napoli, Krech, & Holley, 2005). Elementary school teachers are also responsible for making and enforcing classroom rules to ensure suitable behavior in their classrooms (Ball, 1993). To perform all these tasks effectively, a teacher must have undergone all the necessary phases of teacher education and training (Shulman, 1987). Sometimes these duties may present tremendous challenges for elementary school teachers.

Challenges Faced by Elementary School Teachers

The literature has underlined the challenges elementary school teachers encounter teaching students who struggle academically. Since the passage of the No Child Left Behind Act of 2001, elementary teachers have struggled to meet the 2013-2014 deadline to close the achievement gap between disadvantaged, minority students, and their peers in reading and mathematics (Garcia, Jones, & Isaacson, 2015). The No Child Left Behind Act (2002), along with state laws and policies, has put increased pressure on elementary school teachers and administrators, holding them accountable for students' academic

performance in these curricular domains. The act mandates that all students be proficient in reading and mathematics by 2014. In addition, schools must make adequate yearly progress (AYP), as documented and assessed by state standards. According to Paige (2011), despite the United States spending billions on raising the reading proficiency level across the states, two-thirds of African American fourth grade students read at or below the basic level. The majority of students who attended public schools in underserved urban communities consistently exhibited low scores on achievements tests and nonmastery of simple concepts, as demonstrated by standardized assessment data in numerous states (Bridgeland, DiIulio, & Wulsin, 2008). Elementary school teachers must enter the classrooms with reading assessment-driven instructional approaches so that students can connect with the content and deepen their understanding in other subjects such as science, math, and social studies (Cummins & Gerard, 2011).

In the same sphere, writing is a difficult and a demanding task for elementary students (Lienemann, Graham, Jansen, & Reid, 2006). The National Assessment of Educational Progress supports the researchers' observations. Lienemann et al. (2006) state that three out of every four students in grades four through eight accomplish only partial mastery of the writing skills they need at their respective grade level. This type of result led to the establishment of the National Commission on Writing in 2003, which recommended that writing become a central focus in school reform. Now elementary school teachers in their classrooms must address the students' problems with writing early in the process. The experts recommend early interventions to help develop fewer young at-risk writers, a tactic which will minimize the number of students who develop long-term writing difficulty (Lienemann et al., 2006).

In addition, English learners in U.S. elementary schools need English-language development (Balderrama & Rico, 2006). In the authors' view, English learners must learn the same academic content as English-speaking students, but at the same time, they must learn a new language, which will make learning an intellectually demanding and time-consuming task for teachers. Many elementary school teachers in the 21st century have a diverse classroom, and should attempt to learn the languages of their students and promote diversity (Balderrama & Rico, 2006).

Consequently, these academic concerns have caused policy makers to mandate the use of high-stakes testing as a means to transform instructional practices and make teachers and students more accountable for their performance in the classroom (Diamond & Spillane, 2004). Now elementary school teachers are held accountable for students' academic success, test scores, and schools' overall performances, reported to the media (Jones & Egley, 2004). As the scholars note, teachers have repeatedly claimed that they are pressured into improving students' test scores. This type of undue pressure has caused some of the best teachers to leave the teaching profession early. Due to the added pressure from local and state officials to raise students' test scores, specifically in the urban school districts, teachers are duty-bound to teach skills and knowledge that require testing, therefore neglecting other subject areas altogether (Hursh, 2005). Hursh stated that one of elementary teachers' primary concerns regarding high-stakes testing was that it compelled teachers to teach only reading and mathematics, which narrowed the curriculum for other subject areas.

Elementary school teachers' workload in the classroom has increased due to federal, state, and local policies aimed at raising student achievement year to year (Valli &

Buese, 2009). The authors emphasize that the number of tasks elementary school teachers asked to do on a daily basis, both inside and outside the classroom, has increased. Daily tasks for an elementary school teacher consist of data analysis, ESOL instruction and collaborating with ESOL teachers, inclusion instruction, and tutoring after school. In addition, because of the policy mandates, elementary school teachers are forced to perform differentiated instruction in their classrooms (Valli & Buese, 2009) while using weekly formative assessments as a guide for instructional planning.

From these perspectives, Supovitz and Turner (2000) argue that while professional development may not have reached its potential, it is still the best strategy to support ambitious instructional reforms and change teacher classrooms practices to meet student academic needs. Theorists mostly agree that teachers have a vital role in making educational reforms successful. In their view, well-planned teacher professional development is a requirement to guarantee that innovative reforms are implemented in a sustainable manner (Dori & Herscovitz, 2005).

Professional Development

Professional defined as “an ongoing process through which an individual derives a cohesive sense of professional identity by integrating the broad-based knowledge, skill, and attitudes within psychology with one’s values and interests” (Ducheny, Allezhauser, Cradell, & Schneider, 1997, p. 89). In this same sphere, a teacher's professional development defined as the professional growth a teacher achieves from the result of gaining increased experience and reflecting on his or her teaching systematically (Villegas-Reimers, 2003).

This table recapitulates the characteristics of effective teacher professional development and factors that allow it to be accomplished, according to Harwell (2003):

Table 1

Characteristics of Effective Professional Development

Perspective

- Teachers care about professional development
- Teaching professionals share a sense of need for change
- Teaching professionals agree on answers to basic questions regarding the nature of learning as well as the teacher's role in the classroom
- Teaching professionals consider learning a communal activity

Subject

- Deepens teacher's knowledge about the subject matter
- Sharpens classroom skills
- Up-to-date with the subject and education
- Contributes new knowledge to the profession
- Increases the ability to monitor student work
- Addresses identified gaps in student achievement
- Centers on subject matter and measurement of student performance
- Focuses on proven instructional strategies

Procedures

- Research-based
- Based on sound educational practice; supports interaction among principal teachers
- Takes place over extended periods of time
- Provides opportunities for teachers to try new behaviors in safe environments while receiving feedback from peers.

(Harwell, 2003, p. 8)

The above table demonstrates the major characteristics of effective professional development for teachers and students. This information builds the foundation of professional development and its positive effects on teachers and students.

What Makes Professional Development Effective?

In the most extensive existing study of professional development, Garet et al. (2001) proposed a research project for the Eisenhower Professional Development Program. The study uses a national probability sample of 1,027 mathematics and science teachers, providing the first large-scale experimental comparison of effects of different characteristics of professional development on teachers' learning. This research analyzed the essential features of professional development. Results identify the three core features of professional development activities that result in significant increases on teachers' self-reported knowledge and skills in classroom practice: (a) focus on content knowledge; (b) opportunities for active learning; and (c) coherence with other learning activities (Garet et al., 2001). It is primarily through these core features that the form of the activity, such as workshop vs. study group, shared participation of teachers from the same school, grade, or subject, and length of the activity affect teacher learning (Garet et al., 2001).

Focus on Content Knowledge

Birman, Desimone, Porter, and Garet (2000) suggest that focusing on content means aiming a staff development activity on a specific teaching method, such as understanding the way elementary school students solve story problems in mathematics. If teachers expected to teach new standards, which may include complex thinking skills, it is critical for them to have an understanding of their subject matters so that they can implement their subject matters into the classroom (Birman et al., 2000). In order to

measure this, teachers asked about the emphasis given to the four aspects of content, which includes subject knowledge, knowledge of how students learn, knowledge of methods of teaching, and models to illustrate those methods of teaching of that content (Ingvarson, Meiers, & Beavis, 2005). This will serve as a basis for teachers to determine whether the professional development programs they engage in are actually effective or not.

Opportunities for Active Learning

Active learning inspires teachers to become engaged in meaningful dialogues, planning and practice as part of the professional development activity (Birman et al., 2000). Professional learning over a lifespan becomes an expectation of the teacher's role and a vital part of the culture of the school (Lieberman, 1995). Interestingly, Birman et al. (2000) reported from a national study that teachers whose professional development embraces opportunities for active learning reported increases in knowledge and skills and changes in classroom practices.

Coherence with Other Learning Activities

Coherence indicates the extent to which professional development experiences are part of an integrated program of teacher learning (Birman et al., 2000). "An activity is more likely to be effective in improving teachers' knowledge and skills if it forms a coherent part of a wider set of opportunities for teacher learning and development" (Birman et al., 2000, p. 29). In this sphere, Desimone et al. (2002) suggest that teachers make a report of any activity that they attended and analyze if it was consistent with their goals for professional development. According to the authors, these professional

development experiences can consist of activities built on what the teacher learned from the activity.

Effective Approaches to Professional Development

Implementing effective approaches is one of the integral features of professional development, as it prioritizes the expansion of knowledge and skills of classroom teachers (Birman et al., 2000). It is important to apply recent research knowledge to improve our processes and procedures for studying the effects of teachers' professional development on both teachers and students (Desimone, 2009). Effective teaching approaches will help guide teachers in becoming professional and effective educators.

In the study discussed above with the Eisenhower Professional Development Program, Garet et al. (2001) focused on three structural features or approaches that affect teacher learning: (a) the form of the activity (e.g., study group, teacher collaboration, internship, resource center); (b) the duration of the activity (number of hours teachers spend on the activity as well as the span of time it took to complete the activity); and (c) collective participation (the amount of teachers from the same school, grade level or department). However, because of multiple and complex characteristics that impact effective professional development, Guskey (2003) suggests that if researchers and practitioners could establish a consensus on factors such as teachers' beliefs and attitudes that contribute to successful professional development experiences, this would eventually improve the quality of professional development.

Theoretical Framework for Teachers' Beliefs

Self-Efficacy Definitions

The educational foundation of self-efficacy was established in social cognitive theory, recognized by former APA president (1974) and present Stanford professor Albert Bandura (1977). Social cognitive theory claims that people are gifted in human activity, or intentional pursuit of courses of action, and that such activity operates in a process called triadic reciprocal causation (Henson, 2001). The researcher states that reciprocal causation is a multi-directional model, signifying that our activity results in future behavior because of three interrelated forces: environmental impacts, our behavior, and internal personal factors such as cognitive, affective, and biological processes.

Significant to Bandura's (1977) framework is his idea of self-efficacy. Bandura's views on the potential of self-efficacy were impressive, as echoed in the title of his 1977 article "Self-Efficacy: Toward a Unifying Theory of Behavioral Change." In this influential essay, Bandura defined self-efficacy as "belief in one's capabilities to organize and execute the courses of action required to produce given attainments" (p. 3). Henson (2001) characterized self-efficacy beliefs as the foremost mediators for our behavior and, importantly, behavioral change. During the last quarter of a century, Bandura's writings continued to develop and reinforce the idea that our beliefs in our abilities powerfully affect our behavior, motivation, and eventually our success or failures (Henson, 2001).

In addition, Bandura (1977) suggested that because self-efficacy beliefs were obviously self-referential in nature and oriented toward perceived abilities given specific tasks, they are controlling predictors of behaviors. The present observations are further supported by research on a variety of clinical issues, such as phobias (Bandura, 1983),

addiction (Mariatt, Baer, & Quiqley, 1995), depression (Davis & Yates, 1982), and smoking behavior (Garcia, Schmitz, & Doerfler, 1990). In the same manner, educationally, self-efficacy philosophies are associated with academic performance and self-regulated learning (Schunk, 1991). Similarly, Bandura (1977) theorized that self-efficacy affects an individual's choice of activities, effort, and persistence. People who have a low sense of efficacy for achieving a task may avoid it; those who believe they are capable will participate readily. Individuals who consider themselves efficacious teachers theorized to work harder and persevere longer when they meet difficulties than those who are uncertain about their capabilities. Schunk (1991) supports the present observations, claiming that people acquire information to assess efficacy from their performance accomplishments, vicarious (observational) experiences, practices of persuasion, and physiological indices. Furthermore, an individual's own performances offer the most dependable guides for measuring efficacy. Success increases efficacy and failure lowers it; however, once a strong sense of efficacy is established, a failure may not have much power (Bandura, 1986).

An individual also attains capability information from awareness of others. Relating to others suggests the best basis for comparison (Schunk, 1989b). The researcher suggests that observing similar peers accomplish a task conveys to viewers that they too are capable of achieving it. In contrast, information acquired vicariously normally has a weaker effect on self-efficacy than performance-based information; a vicarious increase in efficacy annulled by subsequent disappointments. In a similar vein, Schunk (1991) notes that students often receive precursory information that they have the capabilities to accomplish a task (e.g. "You can do this"). Positive precursory feedback improves self-

efficacy; however, this growth will be temporary if subsequent determinations turn out poorly. Information developed from these sources inevitably discourages efficacy, cognitively appraised to some extent (Bandura, 1986). Efficacy appraisal is an inferential progression in which persons weigh and combines the influences of such personal and situational aspects as their perceived ability, the strain of the task, the amount of effort depleted, the amount of external assistance established, the number and pattern of successes and disappointments, their apparent similarity to models, and persuader trustworthiness (Schunk, 1989b).

According to Schunk (1989b), self-efficacy is not the only impact on behavior, nor is it necessarily the most significant. Behavior is a gathering of many variables. In achievement surroundings, some other important variables are skills, outcome expectations, and the apparent value of outcomes. The researcher further suggests that high self-efficacy will not generate competent performances when necessary skills are lacking. Outcome expectations, or beliefs regarding the probable outcomes of actions, are essential because individuals are not inspired to act in ways they believe will result in undesirable outcomes. Apparent value of outcomes refers to how much people want certain outcomes relative to others. When a subject has adequate skills, positive outcome potentials, and personally valued outcomes, self-efficacy is theorized to influence the choice and direction of much human behavior (Bandura, 1986b). To illustrate, Schunk (1989b) discussed how self-efficacy could function during academic learning. At the beginning of an activity, students vary in their beliefs about their capabilities to obtain knowledge, achieve skills, and master the materials. First, self-efficacy varies based on aptitude (e.g., abilities and attitudes) and previous experience. Personal factors such as

goal setting and information processing, alongside situational factors (e.g., rewards and teacher feedback) have an emotional impact on students while they are working. As result of these factors, students assess how well they are doing, an assessment which they use to measure efficacy for further learning. Motivation heightens when students recognize they are making progress in learning. Consequently, as students work on tasks and become more skillful, they preserve a sense of self-efficacy for performing well.

The idea that personal expectancies will influence behavior is not new; theorists Lewin and Tolman, for instance, believed that much learning results in the forming of expectancies that certain behaviors will yield given outcomes (Deci & Ryan, 2000). Schunk (1991) suggests there are several paradigms that bear a resemblance to self-efficacy: perceived control, outcome expectations, perceived value of outcomes, attributions, and self-concept. Hence comparing self-efficacy with these paradigms will highlight the distinctive features of each. Now that teachers' expectancies and beliefs have been shown to influence student motivation and achievement directly or indirectly (Midgley, Feldlaufer, & Eccles, 1989), teachers' personal effectiveness or efficacy has been the subject of several recent studies.

Self-Efficacy in Teaching

Similarly, with the common formulation of self-efficacy, Tschannen-Moran and Woolfolk Hoy (in press) define teacher efficacy as a teacher's "decision of their competences to bring about desired outcomes of student engagement and learning, even those students who are a challenge to motivate." The research on teacher efficacy is a little over two decades old and initiated with RAND researchers' evaluation of whether teachers thought they could control the reinforcement of their actions (Armor et al.,

1976). Consequently, this initial work, elaborated on in Rotter's (1996) locus of control theory, demonstrated that student learning and motivation were the support of teaching action.

Over all, the Bandura (1977) and Rotter (1996) traditions have swayed the study of efficacy. On the other hand, researchers' understandings of these theories have considerably muddied the efficacy waters as regards the academic formulation of teacher efficacy and the psychometric attempts to measure the construct (Henson, 2001). Moreover, Tschannen-Moran, Woolfolk Hoy, and Hoy (1998) delivered a comprehensive review of these past developments. Nevertheless, despite the measurement misunderstanding, teacher efficacy has still developed as a worthy variable in educational research.

Henson (2001) noted that the associations of teacher efficacy are many when using a variety of efficacy scales and measurements. Additionally, students of efficacious teachers mostly have outperformed students in other classes. Teacher efficacy was prognostic of achievement on the Iowa Test of Basic Skills (Moore & Esselman, 1992), the Canadian Achievement Tests (Anderson, Greene, & Loewen, 1988), and the Ontario Assessment Instrument Pool (Ross, 1992). In the same manner, Chambers and Hardy (2005) noted that researchers' detected increased accomplishments in rural, urban, majority Black and majority White schools for students of efficacious teachers. Likewise, teacher efficacy relates to students' own sense of efficacy and student motivation.

Concerning teacher behaviors, efficacious teachers continue to work with struggling students and complain less after incorrect student answers (Chambers & Hardy 2005). They are more likely to suggest that a low SES student should be positioned in a

regular education setting and less likely to recommend students for special education. Teachers with high efficacy tend to investigate new methods of instruction, pursue improved teaching methods, and examine instructional materials (Chambers & Hardy 2005). A related issue is discussed in Moran and Hoy (2000), who observe that greater efficacy allows teachers to be more tolerant with students when they are having difficulty learning a task and less likely refer a student to special education classrooms. Likewise, Evans and Tribble (1996) discovered similar results for preservice teachers. Teacher efficacy is the focus of current debate concerning its significance (Tschannen-Moran et al., 1998). The discussion has focused on two issues. First, grounded on the theoretical nature of the self-efficacy paradigm as defined by Bandura (1977, 1997), scholars have debated whether self-efficacy is more feasibly measured within a framework concerning specific behaviors (Pajares, 1996). Second, the theoretical validity of scores from the main instruments purporting to measure teacher efficacy has been harshly examined. Hence, teacher efficacy is currently under inquiry; it is ready to either move forward or fall to the wayside as a good idea that eventually had little substance (Tschannen-Moran et al., 1998).

Ashton and Webb (1986), who defined teaching efficacy as individual beliefs about competencies to help get students to learn, further support the present observations. Efficacy can affect teachers' activities, effort, and persistence. Also, teachers whose self-efficacy is low might avoid designing activities that they consider surpass their capabilities, be reluctant to persist with students who are struggling, expend little effort to discover materials, and not restructure content in ways students might understand better (Schunk, 1991). In contrast, teachers whose self-efficacy is greater might design

challenging activities, help students succeed, and endure with students who are having trouble learning. Consequently, these motivational properties enhance student learning and demonstrate teachers' efficacy by conveying that they can help students succeed.

The vast literature on teacher efficacy suggests that more research is needed on self-efficacy in relation to motivation (e.g., planning and evaluating). To illustrate, Ashton and Webb (1986) demonstrate that teachers who had higher self-efficacy were more likely to have an encouraging classroom environment (e.g., less student unease and teacher disapproval), praise students' thoughts, and meet the requirements of all students. High teaching efficacy positively correlated with practice of praise, specific attention to students, examining students' progress in learning, and students' mathematical and language accomplishment (Schunk, 1991). In this sphere, Hoy and Woolfolk (1990) had future teachers judge efficacy, bureaucratic positioning (e.g., extent of instruction conformity and organizational trustworthiness), learner control ideology (custodial vs. humanistic), and motivational style (one that stimulates student autonomy and obligation). Schunk (1991) cited teacher and personal efficacy as two notable efficacy dimensions. Teacher efficacy measured whether teachers assumed that students' motivation and performance derived mostly from home. On the other hand, personal efficacy measured whether teachers believed that with effort they could reach unmotivated students. Interestingly, the two measures were uncorrelated, but each connected to pupil control and bureaucratic orientation. Over the long haul, future research might address the method whereby these efficacy principles affect teacher and student motivation (Schunk, 1991).

In the same manner, researchers should also discover the effects of teacher-student relations. When presenting content, teachers might express that all students can learn or that some will struggle (Brophy, 1983). While giving content, teachers might bond new material to what students know or facilitate little integration. Schunk (1991) suggested that these differences might interfere with students' self-efficacy and motivation. Consequently, the way students react to teachers should encourage teachers' efficacy and motivation. In addition, students who respond eagerly may heighten teachers' efficacy and motivate them to design exciting lessons. Therefore, when classes seem perplexed or discourage, teachers may inquire about their teaching competence and speculate whether additional effort will yield better results Schunk (1991). Interestingly, Skaalvik and Skaalvik (2007) notice in their study of Norwegian schools that classroom teachers do not always work alone. The individual teachers do the actual classroom instruction; however, the daily organizing and instructional planning are done with a team of teachers. The individual teachers may have beliefs about the ability of the team and faculty to work together to carry out the goals of the school. These types of beliefs represent perceived collective efficacy (Skaalvik & Skaalvik, 2007).

Collective Teacher Efficacy

Collective teacher efficacy is defined as “the perceptions of teachers in a school that the efforts of the faculty as a whole will have a positive effect on students” (Goddard et al., 2000, p. 480). In accordance with Kurz and Knight (2004), how well a school achieves as a public system weighs in on the shared belief of that particular school. This belief allows researchers to investigate ways to enhance efficacy through social and organizational structures of schools. From this perspective, in their definition of

collective efficacy, Zaccaro, Blair, Peterson, and Zazanis (1995) emphasized that shared belief was a major factor:

Shared beliefs mean that there is a significant degree of interdependence among member judgments. That is, perceptions of collective competence are influenced not only by actual conditions within the group, but also, a large extent, on how other group members perceive and convey interpretations of these conditions. This suggests that collective efficacy may have both individual and group-level components. (p. 309)

Establishing collective efficacy as a shared belief by schools entails that such beliefs become a part of the school's culture (Kurtz & Knight, 2004).

Collective teacher efficacy differs from teacher efficacy in that collective teacher efficacy indicates the values of the staff to which one belongs (Ross, Hogaboam-Gray, & Gray, 2003), whereas teacher efficacy indicates an individual teacher's beliefs about how he or she will be able to bring about student learning. While collective and individual teacher efficacy are interrelated (Goddard & Goddard, 2001), they are theoretically different. It is hard to envision a teacher who believes he or she can affect student learning more or less successfully than her colleagues as a whole (Ross et al., 2003).

Bandura (1977) suggested one powerful construct that varies greatly among schools but is analytically related to student achievement, the collective efficacy of teachers within a school. When teachers have an attitude about their own faculty capabilities at their school, this is known as perceived collective efficacy (Goodard et al., 2004). Teachers accept the fact they are working together, cooperatively bringing appropriate knowledge to students and guiding each other in making teaching an effective tool (Goodard et al., 2004). Moreover, there is a significant relationship between student achievement and collective efficacy beliefs. When teachers as a group in a school believe that the staff as a whole can be successful, they will more likely to continue their own

individual efforts to achieve such success (Dimopoulou, 2012). Like any group in an organization, teachers also experience successes and failures (Goodard et al., 2004). Schools that have been successful in the past strengthen teachers' beliefs in the potential of the faculty, but schools that are constantly failing tend to lower the sense of collective efficacy within the faculty. From an organizational perspective, collective teacher efficacy may help explain the differential effect that schools have on student achievement (Dimopoulou, 2012).

Although a great deal of research has linked both teacher and collective efficacy to student achievement, one ignored question concerns the nested relationship between teacher and collective efficacy. Authors Goddard and Goddard (2001) apply social cognitive theory to offer a theoretical analysis of this relationship. They used categorized linear modeling, testing the strength of the relationship between these two hypothetically connected but hitherto conceptually different concepts. The results were based on the analysis of data gathered from 438 teachers in 47 schools in a large urban school district, and show that collective efficacy predicts disparity in teacher efficacy even when correcting for a number of school background factors, such as socioeconomic status and student achievement (Goddard & Goddard, 2001).

In a study by Brinson and Steiner (2007), "Building Collective Efficacy," researchers defined collective efficacy as the opinions of teachers as a whole that their exertions will have a positive impact on students' academic achievement. In their view, collective teacher efficacy is determined by averaging schoolteachers' individual responses to set questions from a survey. Teachers with stronger beliefs in collective efficacy are more likely to respond favorably to statements like "teachers in school have

the necessary tools to impact student learning” (Brinson & Steiner, 2007). Similarly, teachers with robust collective efficacy are more likely to disagree with statements like “students today are not motivated to learn.”

Brinson and Steiner (2007) revealed that principals and stakeholders should focus more on improving collective teacher efficacy because it has some positive attributes. These include (a) increased student achievement, (b) reducing the negative effects of poor socioeconomic status (SES), (c) bridging the gap between parents and teachers, and (d) developing a work environment that validates teacher commitment to the school. Therefore, in order for principals and stakeholders to become change makers in the lives of students, they must get teachers to work collectively rather than independently (Kurz & Knight, 2004).

There are no predetermined steps that stakeholders can use to improve collective efficacy with teachers at any given school (Brinson & Steiner, 2007). However, researchers in the last decade have begun to identify specific measures that stakeholders can take to improve collective efficacy among teachers. Although the research is still in its development stages, Ross and Gray (2006) suggest that stakeholders can improve collective efficacy by stressing instructional knowledge and skills, allowing time for teachers to collaborate with other teachers to share concepts and skills, analyze results and give teachers an action plan for their performance. These measurements were attained through professional development programs, which will provide stakeholders the greatest likelihood of increasing collective efficacy (Brinson & Steiner, 2007).

Relationship of Professional Development to Collective Teacher Efficacy and Student Achievement

“The environments in which teachers work, and the demands placed upon them by society are increasingly complex” (European Political Context, 2010, p.12).

Professional development affects both collective teacher efficacy and student achievement in numerous ways. Professional development programs are implemented specially to improve teacher quality. Researchers usually give some attention to teacher expectations that intercede between goals and actions, and the most important of these are the teachers’ beliefs that they will be able to bring about student learning (Ross & Gray, 2006). On the other side of the story, researchers argued that increased use of formative assessment, or assessment for learning, leads to higher-quality learning (Beatty & Gerace, 2009). It is often claimed that the drive in schools to improve the results achieved by students in externally set tests and examinations impedes formative assessment use in improving classroom learning (Black, 2003), so authors William, Lee, Harrison, and Black (2004) report on the accomplishments of students who worked in classrooms where teachers made time to improve influential assessment strategies. “The success of standards-based reform will depend on teachers’ ability to foster basic knowledge, advanced thinking, and problem solving among their students” (Desimone, Porter, Garet, Yoon, & Birman, 2002, p. 81). Professional development influences both teachers and students in such a way that both will actually benefit from the knowledge and ideas a teacher can get from it.

The Effect of Professional Development on Teachers' Efficacy

Teacher professional development is crucial to initiatives to expand our schools (Borko, 2004) and enhance teachers' ability and quality as instructors. Over the long haul, educational institutions around the world are currently setting higher standards for student learning. A noteworthy example can be seen with the No Child Left Behind (NCLB) Act of 2001, which mandates that states make high-quality professional development workshops available for all teachers. Likewise, "Teaching at Risk: A CALL to Action," the report generated recently by the Teaching Commission (2004), reminds us that teaching is "our nation's most valuable profession" (p. 12), arguing forcefully that "helping our teachers to succeed and enabling our children to learn is an investment in human potential, one that is essential to guaranteeing America's future freedom and prosperity" (p. 11). Furthermore, teachers serve as guides in collecting information that will help students grow and face the challenges of life.

According to Borko (2004), the research on teacher learning is in the early stages. However, over the last 20 years progress has been significant. In a similar view, (Desimone et al., 2002) have conducted research supporting the idea that professional development can enhance instructional practices and student achievement. However, not enough research has been conducted on what and how teachers grasp from professional development or how this development affects student outcomes.

Teachers may experience many different types of professional development throughout their careers (Desimone et al., 2002) as they continue to grow and perfect their skills. Researchers value the importance of education, as it means passing on the values, skills, knowledge and attitudes required for equality, citizenship, intercultural

dialogue and personal growth, and plays an important role in the attainment of the key capabilities needed for successful assimilation into economic life (European Political Context, 2010). The following are some of the proposed impacts of professional development on teachers' efficacy:

Transformational Leadership

Past research has shown that transformational leadership can have a major impact on teachers' attitudes toward their professional commitment (Ross & Gray, 2006). The researchers argue that teachers who are supervised by transformational principals will express gratification with their principals, go beyond the minimum, and be more devoted to improving school objectives than will teachers with no transformational principals. To demonstrate, Ross and Gray (2006) conducted a study that examined the mediating effects of teacher efficacy by comparing two models derived from Bandura's social-cognitive theory. The first model conjectured that transformational leadership would contribute to teacher commitment to organizational values solely through collective teacher efficacy, whereas the second model posited that leadership would have direct effects on teacher commitment and indirect effects through teacher efficacy. As a result, transformational leadership proved to have an impact on the collective teacher efficacy of the school; teacher efficacy alone predicted teacher commitment to community partnerships; and transformational leadership had direct and indirect effects on teacher commitment to school mission and commitment to the professional learning community (Ross & Gray, 2006). Hence professional development programs will enable teachers to expand their knowledge and experience and reach the next level in becoming an effective leader.

Feedback from Participation

According to researchers, feedback from professional development is an important factor that teachers need to understand. A way to determine their strengths and weaknesses as a teacher is by engaging in professional development programs (European Political Context, 2010). On the other hand, Wilson and Berne (1999) argue that teachers who take time out to take part in professional development activities expect to learn new theories or new rigorous instructional strategies that foster improvements in classroom practice. However, they do not expect to have their knowledge of classroom practices questioned. Birman et al. (2000) found that teachers whose professional development activities included opportunities for active learning accounted for a change in classroom practices from an increase in their subject knowledge and skills. As active learners in professional development, teachers can become engaged in meaningful discussion, planning, and implementation while using simulated conditions (Birman et al., 2000). Furthermore, by being aware of the strengths and weaknesses, teachers will be able to observe the things they need to maintain and improve while creating solutions to the problems that cause their failures in the classroom.

The Acquisition of New Skills

Teachers acquire new skills through persistence, acknowledgement of transfer problems, understanding the importance of underlying theory, and proactive and productive use of peers and flexibility (Joyce & Showers, 2003). According to Timperley (2008), for teachers to learn new strategies that have an impact on student achievement, first, they need to recognize the pedagogical content knowledge and skills they need to support their students. With the future generation of students greatly depending on

education for their survival and success, Hammond (2008) stresses developing a systematic path for teachers, collectively, to continue learning. In the second line of research, acquiring new skills was a major element that develops from professional learning communities (PLC) that support the overall variations in teachers' practices (Vescio, Ross, & Adams, 2008).

More importantly, Bolam, McMahon, Stoll, Thomas, and Wallace (2005) indicated that teachers could make a connection between their own professional development opportunities and changes in their teaching methods and student learning. One good way of continuing the flow of subjects and lessons in school is through continuous acquisition of new skills. Professional development helps teachers to acquire the skills of conveying what they learned through studying, seminars, workshops, and other programs as well as the content of their subjects in a proficient manner.

Create Measures

According to Desimone et al. (2002), it is important to measure the development of teachers after undergoing professional development programs and test if they increased their classroom use of those activities. From the researchers' point of view, mean and relative focus measures are used to serve as a basis for evaluating the proficiency of teachers in teaching and measure the skills that they obtain from professional development activities.

Mean focus is assessing the extent to which the professional development activity that a teacher joined focused on multiple, connected practices, and the average of mean focus is calculated and given to the teaching practices measured (Desimone et al., 2002). In a study conducted by authors Desimone et al. (2002) using a Longitudinal Teacher

Survey, the mean focus for technology use is the normal importance placed on the technology practices; mean focus for higher-order teaching consists of the average importance placed on the higher-order instructional practices; and lastly, mean focus is the average emphasis placed on the alternative assessment strategies. This kind of process measures the overall effectiveness of all the programs and activities involved in professional development process.

Relative focus is the measure of focusing on one practice rather than another within a professional development activity (Desimone et al., 2002). Consequently, teachers will be able analyze each activity according to their standards and efficacy. Relative focus means choosing one activity to focus on to carefully evaluate its efficacy in the classroom setting (Desimone et al., 2002). This kind of measure lessens the hassle of confusion and comparisons among different kinds of activities.

The Relationship of Professional Development on Student Achievement

The vast literature on professional development reveals that educators and lawmakers throughout the United States have placed increased pressure on schools' stakeholders to equip schools and districts with professional development that will help improve student outcomes (Huffman, Thomas, & Lawrenz, 2003). Professional development is a key mechanism for teachers in improving classroom instruction and student achievement (Ball & Cohen, 1999). Teachers who are engaging in professional development consistently welcome the challenges involved in increasing student achievement (Timperley, 2008). In addition, professional development changes the way teachers view the concept of teaching. Professional development can raise student achievement (Ingvarson et al., 2005) if teachers are able to grasp the content area they

teach and translate this knowledge of content to students. Students can then translate this content in a meaningful way. From these learning experiences, when teachers reflect on the classroom practices that are having a positive impact on their students' outcomes, they begin to sense that their teaching practices are effective (Timperley, 2008).

Research literature has also underlined the enormous challenges professional development poses in trying to identify gains in student achievement (Yoon, Duncan, Lee, Scarloss, & Shapley, 2007). Huffman et al., (2003), who suggest that research on professional development impact on student achievement has been narrow, due to the amount of funds it takes to complete a detailed study, further support this observation. Linking professional development with student achievement is easier said than done. According to Yoon et al. (2007), for professional development to prove gains in student achievement, it must complete three phases. First, professional development need to improve teachers' knowledge and skills. Second, teachers equipped with better knowledge and skills must improve classroom practices. Third, improved classroom practices must raise student achievement. As suggested earlier, a small amount of precise research has identified the effect of professional development on student achievement (Yoon et al., 2007). However, more research conducted on the impact of professional development on teachers' knowledge and practices is essential.

Schools have an obligation to provide pupils with an education which empowers them to adjust to a progressively globalized, varied and multidimensional environment (European Political Context, 2010) in which inventiveness, the ability to innovate, and a willingness to continue learning are just as important as specific knowledge of a given subject. Standards-based educational upgrading necessitates teachers having deep

knowledge of their subject and the instructional style that is most effective for teaching the subject (Blank & de las Alas, 2009). It is important for educators to consider the quality and quantity of evidence that connects professional development with student achievement (Educator News, 2008). They must also consider the knowledge and skills identified by the research as having the most favorable influences on student learning when finding which professional development to implement. The main goal of professional development for teachers is to create an impact on student achievement.

To assist states throughout the southwest region, the Regional Education Laboratory Southwest sponsored a study appraising the available research-based evidence on the effects of professional development on student achievement (Yoon et al., 2007). Researchers identified over 1,300 studies theoretically addressing the effect of teacher professional development on student achievement in three key content areas, mathematics, science, and reading and English/language arts. The authors found nine that qualified for What Works Clearinghouse evidence standards. The study concluded that teachers who participated in professional development for an average of 49 hrs. were able to increase their students' achievement by approximately 21 percentage points.

Summary

Powerful teaching is critical in the classroom. Teachers' expectations are to provide students with the necessary knowledge and skills to function and prosper in the workplace (Hammond, 2006). Teachers should be efficient enough to instill helpful and useful material in their students' minds in order to guide them in facing the long career path. Increasing teacher quality has the potential to have a large impact on students' outcomes. Professional development is one of the most common vehicles for increasing

teacher quality (Salinas, 2010). Salinas states, “professional development programs are designed to change teachers’ practices, their attitudes, and/or their belief as of which are thought to lead to improved learning opportunities for their students” (Salinas, 2010, p.3).

Overall, the literature concurs with the assertion that professional development has the potential to improve teacher quality, therefore effecting gains in student achievement. However, even if professional development improves teacher knowledge and skills, and progresses classroom instruction, a poorly planned evaluation or insufficient application would make it difficult to ascertain any effects from the professional development (Educator News, 2008). Hence, the topic of professional development models to support school improvement continues as a major focus for educators.

Chapter 3:

Methodology

After a recapitulation of the research questions, the present chapter begins with an explanation of the general methodology employed in this study—specifically, secondary analysis of an existing set of survey data—and a description of the instrument from which these survey data were derived—namely, the Measures of Effective Teaching (MET)/Working Conditions Survey, including the instrument’s psychometric properties. In the next section, the conditions under which the MET/ Working Conditions data were collected are outlined, and a statistical description is provided in two tables of the more than 5000 persons whose responses constitute the present data set. The final section of the chapter provides a statement of analytic strategies employed in answering the following research questions:

1. What is the extent of the relationship between teachers’ perceptions of the Quality of Professional Development, the Need for Professional Development, and the Collective Faculty Efficacy at their schools?
2. Among these variables, does the strength of the relationships differ by such teacher characteristics as total years of teaching experience, number of years teaching at the same school and perceived importance of promoting student learning?
3. What is the extent of the relationship between teachers’ perceptions of the Quality of Professional Development, the Need for Professional Development and the Collective Faculty Efficacy at their schools, and such school-level student

achievement indices as AYP status, percent proficient in reading and math, and averaged criterion-referenced scores in reading, math, science, and social studies?

4. Among these variables, does the strength of these relationships differ by the percentage of faculty whose professional intention is to keep teaching at the same school rather than to leave that school, leave the district, or leave teaching altogether?

Overall Methodology

According to Tashakkori and Teddie (1998), research is categorized usually in terms of its general methodology. In educational studies, he notes that the researcher may employ qualitative, quantitative, experimental, or non-experimental methodology to frame his study. When employing a quantitative approach, researchers may use questionnaires, tests, records, standardized observation instruments, and existing databases as appropriate sources for data (Patton, 1997). Common to the quantitative approach is the use of data from human samples and the placing of data in predetermined categories for statistical analysis, the intended result being an unbiased and objective interpretation of data (Creswell, 2008).

This research draws upon two existing data sources, the first being MET/Working Conditions Survey data collected from more than 5,000 educational practitioners at over 200 schools, the second being standardized test score data pertinent to nearly 140 schools, taken from “report cards” maintained by the Tennessee Department of Education and expressed as the school-wide percentage of students “proficient or advanced” in Reading and Mathematics. The researcher approached the four research questions posed by this study in a quantitative fashion, working in a venue of inquiry commonly referred

to as “secondary analysis.”

According to Hakim (1982), secondary data analysis can be defined as “further analysis of an existing data-set which presents interpretations, conclusions, or knowledge additional to, or different from, those presented in the first report on the data collection and its results” (p.1). Based on this definition, specific uses for such analyses may include:

- Condensed reports (such as social area analysis based on selected social indicators)
- More detailed reports (offering additional detail on the same topic)
- Reports which focus on a particular sub-topic (such as unemployment) or social group (such as ethnic minority)
- Reports angled towards a particular policy issue or question
- Analyses based on a conceptual framework or theory not applied to the original analysis
- Re-analyses which take advantage of more sophisticated analytical techniques to test hypotheses and answer questions in a more comprehensive and succinct manner than in the original report (Hakim, 1982, p. 1).

Given the uses outlined, the present study would appear to lend itself to secondary analysis, as it seems to be productive of the kinds of information outlined by Hakim.

First, it focuses on a particular set of “subtopics” included in the original study—namely, evaluation, teacher leadership, teachers’ roles in decision-making, and teachers’ professional plans—and examines them in greater depth. Second, in breaking out the data into subgroups of respondents and comparing and contrasting results, the present study

applies somewhat “more sophisticated analytical techniques to... answer questions” (Hakim, 1982, p.1) that were not fully addressed or were unaddressed in the prior study.

Instrument

A review of the literature indicates that a wide variety of measures of the school environment—whether conceived of under the aegis of “school climate,” “learning environment,” “teacher working conditions,” etc.—are in use. Witcher (1993) reviewed several of these measures and found that those resulting in the most reliable assessments were those that generated information about multiple aspects of the school, including “an emphasis on academics, an ambience of caring, a motivating curriculum, professional collegiality, and closeness to parents and community.” These most reliable instruments were also easy for respondents to understand, were appropriate to several levels of schooling, and possessed adequate evidence of psychometric validity and reliability.

A survey that meets many, if not all, of these requirements is the MET (Measures of Effective Teaching)/Working Conditions Survey. Originally developed in 2002 by the New Teacher Center, the instrument made its debut in North Carolina as the “Teaching and Learning Conditions Initiative Survey” as part of the work of then-Governor Mike Easley and his state’s Professional Teaching Standards Commission. Over the past decade, the research of the survey has extended to 12 states and 10 districts, providing information to both policymakers and practitioners about the following:

- Time— the availability to plan, to collaborate, to provide instruction, and to eliminate barriers in order to maximize instructional time during the school day.
- Facilities and Resources—availability of instructional, technology, office, communication, and school resources to teachers.

- Community Support and Involvement— Community and parent/guardian communication and influence in the school.
- Managing Student Conduct—policies and practices to address student conduct issues and ensure a safe school environment.
- Teacher Leadership—teacher involvement in decisions that affect classroom and school practices.
- School Leadership—ability of school leadership to create trusting, supportive environments and address teacher concerns.
- Professional Development— availability and quality of learning opportunities for educators to enhance their teaching.
- Instructional Practices and Support—data and support available to teachers to improve instruction and student learning. (TELL, Tennessee, 2012)

Perhaps because of the number of aspects of schooling that the instrument addresses, the Bill and Melinda Gates Foundation have insisted that the districts with which it works administer a version of the New Teacher Center’s “Teaching and Learning Conditions Questionnaire” as part of its “Measures of Effective Teaching” initiative. Hoping to get beyond “how well a teacher’s students do on assessments,” according to the Gates’ Foundation website, “the Measures of Effective Teaching” project seeks to uncover and develop a set of measures that work together to form a more complete indication of a teacher’s impact on student achievement” (Bill and Melinda Gates Foundation, 2012). Collecting data derived from such diverse sources as student surveys, supplemental student assessments, videotaped classroom lessons, teacher reflection on these lessons, and assessments of teachers’ ability to recognize and diagnose student

problems, the Gates Foundation also administers a version of the Teaching and Learning Conditions Questionnaire that is tailored to the local contexts with which it collaborates. By means of this instrument, the Foundation seeks to render a kind of status report of within-school strengths and weakness that are linked to retaining or losing effective teachers and, by extension, supporting or not supporting student achievement. The present dataset derives from the Gates Foundation partnership with a local district.

Some degree of informal or *prima facie* evidence of the validity of the MET/Working Conditions seems inherent in the instrument's longevity and wide usage. According to the New Teacher Center website, the information provided by the instrument has been of such high quality as to provide its former clients with sufficient guidance in such matters as:

- rewriting standards for principals and teachers.
- allocating funds to support using survey data in low-performing school districts.
- supporting the creation of additional funding for professional development in low-performing schools.
- developing school leadership training that requires administrators to use the survey data in making school-level improvement decisions.
- changing professional development offerings and providing teachers with more autonomy in selecting growth opportunities.
- implementing targeted recruitment strategies for hard-to-staff schools (New Teacher Center, 2012).

Aside from this sort of informal, testimonial evidence, formal evidence of the validity of MET/Working Conditions Survey was recently marshaled by the state of

Tennessee, with respect to an adaptation of the original North Carolina survey that it refers to as “TELL Tennessee.” The TELL (“Teaching, Empowering, Leading and Learning”) Tennessee website charts the evolution of the instrument’s “content validity.” As relayed by the website, the items constituting the North Carolina instrument originated in part from a wide-ranging literature review of research on the role of working conditions on teacher dissatisfaction and teacher mobility, and in part from School and Staffing Survey data “focused on areas teachers identified as conditions that drove their satisfaction and employment decisions, including administrative support, autonomy in making decisions, school safety, class size, time, etc.” (TELL Tennessee, 2012).

In addition to issues concerning “content validity,” the TELL Tennessee website also points to studies done to establish the instrument’s “construct validity.” Using data taken from 400,000 teachers from 5,000 schools in 12 states, Swanlund (2011) used a combination of factor analysis and “Rasch measurement modeling” to examine the dimensionality of the instrument. In his analyses, Swanlund found more constructs (13) than the eight that the instrument purported to measure. However, Swanlund went on to note that the additional constructs seemed also to fit comfortably within the eight-construct framework, with the additional five clusters of items serving to refine four of the original domains. When an early wave of TELL Tennessee data were analyzed using an approach similar to Swanlund’s, the analyst identified 10 constructs, with the Facilities and Resources construct and Instructional Practices and Support construct each splitting into two subsets.

In terms of reliability, TELL Tennessee reports that all items pertinent to measuring eight of the original constructs exhibit adequate levels of “internal consistency” reliability, with alpha statistics observed to be 0.83 or higher. In sum, all statistical analyses carried out to date suggest that the original instrument and its variants do indeed “measure what they purport to measure” (Popham, 2011), but that more fine-grained conclusions may be drawn about specific groups of items within two or three of the constructs.

Variables

As implied in the title, the purpose of this study is to explore the relationships among teachers’ perceptions of their exposure to professional development, their sense of needs for professional development, their individual sense of the general level of professional “self-efficacy” felt at their schools, and various measures of student achievement derived from concurrently-administered state achievement tests (2009-2010).

Description of Sample

Schools selected for this particular study were 110 elementary schools with 2,154 elementary teachers located in a large district in the Southeastern United States. As previously outlined, the district was one of a select number with which the Gates Foundation chose to work, although it was the local district office of research and evaluation that made the dataset available to the researcher for secondary analysis. Provided in Table 1 is a statistical description of all district respondents who completed the MET/Working Conditions Survey, while Table 2 provides a similar description of just those classroom teachers who completed the instrument. Prior to conducting the research

for this study, permission requested from the Institution Review Board (IRB) at The University of Memphis to conduct the study (see Appendix A).

Table 2

Demographic Characteristics of All Respondents to the 2010 Administration of the Measures of Effective Teaching Working Conditions Survey (N = 5007)

Group	All (N = 5007) %	Elem (n = 2765) %	Middle (n = 986) %	High (n = 1065) %	Others (n = 191) %
Teachers	91.8	92.8	90.1	91.9	85.9
Principals	1.5	1.4	1.7	1.0	3.7
Ass't Principals	0.7	0.3	1.7	0.8	1.6
Others	6.0	5.5	6.5	6.2	8.9
Total Years Employed as an Educator: All Respondents					
First Year	5.0	3.0	6.6	8.6	5.8
2 to 3 Years	9.1	6.7	11.3	13.3	8.9
4 to 6 Years	11.7	9.3	16.7	13.1	14.1
7 to 10 Years	17.5	18.1	18.0	16.5	12.0
11 to 20 Years	29.6	32.9	27.1	24.8	20.9
20 + Years	26.8	29.8	20.0	23.3	38.2
Not Answered	0.3	0.2	0.4	0.4	0.0
Total Years Employed at Present School: All Respondents					
First Year	14.1	10.5	6.6	21.1	23.0
2 to 3 Years	19.2	16.3	11.3	22.7	9.4
4 to 6 Years	20.9	20.4	16.7	19.4	18.3
7 to 10 Years	16.8	19.7	18.0	12.6	12.0
11 to 20 Years	15.9	18.8	27.1	11.9	17.3
20 + Years	7.7	9.0	20.0	7.1	12.0
Not Answered	5.3	5.2	0.4	5.1	7.9
Sites	206	112	39	41	14

Table 3

Demographic Characteristics of Teacher Respondents to the 2010 Administration of the Measures of Effective Teaching Working Conditions Survey (n = 4596)

Group	All (N = 4596) %	Elem (n = 2565) %	Middle (n = 888) %	High (n = 979) %	Others (n = 164) %
Total Years Employed as an Educator: Teachers Only					
First Year	5.2	3.0	7.0	9.1	6.7
2 to 3 Years	9.5	6.9	12.2	14.0	9.8
4 to 6 Years	11.9	9.2	17.6	13.4	14.6
7 to 10 Years	17.8	18.6	17.7	16.5	12.8
11 to 20 Years	29.4	33.1	25.8	24.0	22.6
20 + Years	26.0	29.0	19.5	22.7	33.5
Not Answered	0.3	0.2	0.3	0.3	0.0
Total Years Employed at Present School: Teachers Only					
First Year	14.1	10.4	15.1	21.6	22.6
2 to 3 Years	19.5	16.2	26.4	23.3	9.8
4 to 6 Years	20.4	20.2	23.8	18.6	17.7
7 to 10 Years	16.9	19.9	14.3	12.3	12.8
11 to 20 Years	16.2	19.0	11.8	12.4	17.7
20 + Years	7.7	9.0	4.1	6.9	11.6
Not Answered	5.2	5.3	4.6	5.0	7.9

Proposed Analyses

For research question 1, means and standard deviations were computed as necessary, and Pearson product moment correlations calculated to determine whether the relationships among the three variables of interest are statistically significant. For research question two, these same statistics were computed for subgroups of teacher respondents by the variables named, specifically total years of experience, number of years teaching, and perceived importance of professional development in promoting student learning. For the three major variables of interest, the pairs of correlations obtained for the subgroups were tested for statistical significance using the Fisher r to z transformation. Finally, for research question three and four, the measures of the three variables of interest were aggregated as means across all responding faculty to the level of the school. These school-level means will then be merged with relevant student achievement outcomes obtained from the 2009-2010 Report Cards warehoused by district and school on the Tennessee Department of Education website. Both student achievement and *MET* questionnaire outcomes correlated and tested for statistical significance.

To summarize, provided in this chapter were an explanation of the method of “secondary analysis” and how it applies to the present study, a description of the instrument used and the sample of educators who responded to that instrument, and an outline of the descriptive statistics and inferential procedures used to address the study’s four research questions. The answers to these research questions are detailed in the following chapter 4.

Chapter 4:

Results

Presented in this chapter are the results of a secondary analysis involving two existing data sources. The first consists of perceptual data derived from a 2010 administration of the Measures of Effective Teaching (MET) Working Conditions Survey across a single Tennessee school district, and the second consists of student performance outcomes derived from a concurrently administered battery of standardized tests conducted state-wide by the Tennessee Department of Education. With respect to the first source, specifically focused on were twelve MET survey items concerning teachers' perceptions of the Quality of Professional Development, eleven items concerning teachers' perceived Need for Professional Development, and five items concerning teachers' perception of the level of collective self-efficacy evidenced by their school's faculty. With respect to the latter source, of concern were the school-level percentages of students proficient and advanced in reading and mathematics, criterion-referenced test (CRT) scores in the four subject-matter domains addressed by the state's tests, and a composite indicator denoting whether or not a school met the criteria for "Annual Yearly Progress." With the overall purpose of examining 1) moderated and unmoderated relationships among the three MET outcomes at the level of the individual respondent, and 2) moderated and unmoderated relationships between the three MET outcomes and the student achievement indicators measured at the level of the school, specific research questions flowing from this purpose are as follows:

- 1) What is the extent of the relationship among teachers' perceptions of the Quality of Professional Development, the Need for Professional Development, and the Collective Faculty Efficacy at their schools?
- 2) Among these variables, does the strength of these relationships differ by such teacher characteristics as total years of teaching experience, number of years teaching at the same school, and perceived importance of promoting student learning?
- 3) What is the extent of the relationship between teachers' perceptions of the Quality of Professional Development, the Need for Professional Development and the Collective Faculty Efficacy at their schools, and such school-level student achievement indices as AYP status, percent proficient in reading and math, and averaged criterion-referenced scores in reading, math, science, and social studies?
- 4) Among these variables, does the strength of these relationships differ by the percentage of faculty whose professional intention is to keep teaching at the same school rather than to leave that school or district, or leave teaching altogether?

Outlined in subsequent sections will be the analytic procedures and statistical outcomes pertinent to answering the four previously described research questions. A brief synopsis of results confirmed from these analyses will conclude the chapter.

Research Question One

What is the extent of the relationship among teachers' perceptions of the Quality of Professional Development, the Need for Professional Development, and Collective Faculty Efficacy at their schools?

Taken together, responses to the three constructs explored in this study showed an item-by-item variation that was inconsiderable. As Table 4 shows, for example, 85% or above of this study's more than 2,100 respondents agreed that the professional development at their school had deepened their "content knowledge" (84.6%), provided them with "instructional strategies that meet diverse student learning needs" (86.1%), and overall enhanced their "abilities to improve student learning" (88.7%). However, more than a few teachers still felt that the professional development they received had lacked adequate "follow-up" (23.8%), had been less than thoroughly evaluated (28.9%), or had been insufficiently "differentiated to meet the needs of individual teachers" (28.0%). Clear majorities of teachers felt that no further professional development was needed with respect to such bread-and-butter pedagogical concerns as "content knowledge" (71%), "classroom management techniques" (62.8%), "methods of teaching" (60.4%), and even "student assessment" (59.9%). However, similar numbers of teachers expressed the desire for additional training and support in such domains as "integrating technology" (61.5%), "closing the achievement gap" and "differentiating instruction" (58.3%). At levels of agreement that approached 90%, the five items used to measure Collective Faculty Efficacy evidenced the least item-level variability; the item least often agreed to concerned the ability of teachers "to get through to difficult students" (at 81.6%).

Turning from an exploration of individual items to groups of items, scale means and item sums were observed to covary in systematic ways when correlation coefficients were computed between pairs of measures. As discussed in the note to Table 7, statistically significant relationships were observed between the means obtained from the Quality of Professional Development and Collective Faculty Efficacy Scales, and the sum

across the 11 instructional areas where professional development perceived needed. The most robust of these relationships—the Pearson correlation between Quality of Professional Development and Collective Faculty Efficacy Scales—was both positive and moderate in size ($r = 0.450, p < .001$). Negative and considerably weaker, however, were the relationships between the Quality of Professional Development Scale mean and the sum of Professional Development Needs.

Table 4

Frequencies and Percentages of Teacher Respondents by their Level of Agreement to Twelve Quality of Professional Development Items

Item	Strongly Disagree %	Disagree %	Agree %	Strongly Agree %
Sufficient resources are available for professional development in my school.	3.2 (79)	10.9 (267)	65.5 (1610)	20.5 (503)
An appropriate amount of time provided for professional development.	3.7 (93)	13.0 (326)	62.9 (1572)	20.4 (510)
Professional development offerings are data driven.	1.9 (46)	6.5 (156)	65.9 (1587)	25.7 (620)
Professional learning opportunities aligned with the school's improvement plan.	1.8 (42)	5.9 (137)	67.0 (1557)	25.3 (588)
Professional development differentiated to meet the needs of individual teachers.	6.2 (149)	21.8 (527)	55.5 (1339)	16.5 (398)
Professional development deepens teachers' content knowledge.	2.9 (72)	12.5 (310)	64.0 (1589)	20.6 (511)
Teachers are encouraged to reflect on their own practice.	2.7 (67)	7.9 (197)	67.5 (1681)	21.9 (545)
In this school, follow up provided from professional development.	4.5 (110)	19.3 (469)	59.0 (1435)	17.2 (419)
Professional development provides ongoing opportunities for teachers to work with colleagues to refine teaching practices.	4.3 (108)	15.9 (396)	60.2 (1503)	19.6 (490)
Professional development evaluated and results communicated to teachers.	6.0 (144)	22.9 (551)	54.5 (1312)	16.7 (402)
Professional development enhances teachers' ability to implement instructional strategies that meet diverse student learning needs.	3.4 (84)	10.5 (264)	65.2 (1633)	20.9 (525)
Professional development enhances teachers' abilities to improve student learning.	2.9 (73)	8.4 (209)	65.6 (1640)	23.1 (578)

Table 5

Frequencies and Percentages of Teacher Respondents by Their Self-Assessed Need for Professional Development in Eleven Instructional Areas

Area of Need	No %	Yes %
Special education (students with disabilities)	44.5 (1082)	55.5 (1347)
Special education (gifted and talented)	49.4 (1181)	50.6 (1212)
Differentiating instruction	41.7 (1015)	58.3 (1418)
English Language Learners	55.1 (1315)	44.9 (1073)
Closing the Achievement Gap	40.5 (973)	59.5 (1432)
Your content area	71.0 (1671)	29.0 (684)
Methods of teaching	60.4 (1441)	39.6 (944)
Student assessment	59.9 (1431)	40.1 (957)
Classroom management techniques	62.8 (1502)	37.2 (889)
Reading strategies	50.5 (1207)	49.5 (1184)
Integrating technology into instruction	38.5 (936)	61.5 (1495)

Table 6

Frequencies and Percentages of Teacher Respondents by Their Level of Agreement to Five Items Concerning their School's Collective Teacher Efficacy

Item	Strongly Disagree %	Disagree %	Agree %	Strongly Agree %
Teachers are confident they can motivate students.	1.6 (40)	11.1 (273)	63.8 (1575)	23.5 (579)
Teachers in my school have what it takes to get the children to learn.	.8 (19)	4.9 (122)	61.4 (1526)	32.9 (819)
Teachers in my school really believe every child can learn.	.9 (23)	6.8 (169)	60.0 (1488)	32.3 (802)
Teachers in my school are able to get through to difficult students.	1.9 (45)	16.6 (402)	61.1 (1478)	20.5 (495)
If a child does not learn something the first time, teachers here will try another way.	.6 (16)	3.7 (92)	61.8 (1536)	33.8 (840)

Research Question 2

Among these variables, does the strength of these relationships differ by such teacher characteristics as total years of teaching experience, number of years teaching at the same school, and perceived importance of promoting student learning?

Despite the division of the sample into pairs of smaller subgroups based on years of experience (that is, 10 or fewer years or more than 10 years), teacher tenure (six or fewer years or more than six years), and the respondent's rating of the importance of PD in promoting student learning (that is, selected or not selected as most important), sixteen out of the eighteen correlations remained statistically significant and, in most instances, highly statistically significant. As was seen for the sample taken together, the most robust correlations observed were for the relationship between Quality of Professional Development and Collective Faculty Efficacy, with weaker ones observed for relationships involving those two variables and the sum of Professional Development Needs. Given the small number of respondents who named Professional Development as having the strongest influence on student learning ($n = 65$). The correlations linked to relationships between the Quality of Professional Development and the Sum of Professional Development Needs, and those between Collective Faculty Efficacy and Sum of Professional Development Needs, did not achieve statistical significance ($r = -0.033, p = .795$ and $r = -.012, p = .926$, respectively). The slight correlations obtained for the larger group ($n = 2089$) remained highly statistically significant for both pairs of variables, Quality of Professional Development and Sum of Professional Development Needs ($r = -0.133, p < .000$) and Collective Faculty Efficacy and Sum of Professional Development Needs ($r = -0.110, p < .001$).

Table 7

Correlations between Quality of Professional Development Scale Means, Sum of Professional Development Needs and Collective Efficacy Means for All Teacher Respondents and Grouped by Experience, Tenure, and Perceived Impact on Learning

PD Quality / Collective Efficacy $r(p=)$	PD Quality / Sum of Needs $r(p=)$	Collective Efficacy/ Sum of Needs $r(p=)$	PD Quality / Collective Efficacy $r(p=)$	PD Quality / Sum of Needs $r(p=)$	Collective Efficacy/ Sum of Needs $r(p=)$	z_1 ($p=$)	z_2 ($p=$)	z_3 ($p=$)
<u>10 or Fewer Years ($n = 804$)</u>			<u>More than 10 Years ($n = 1374$)</u>					
0.421	-0.150	-0.086	0.461	-0.107	-0.111	-1.120	-0.980	0.570
0.000	0.000	0.015	0.000	0.000	0.000	0.263	0.327	0.569
<u>Six or fewer years ($n = 1022$)</u>			<u>More than six years ($n = 1018$)</u>					
0.442	-0.116	-0.102	0.431	-0.155	-0.117	0.310	-0.250	0.340
0.000	0.000	0.001	0.000	0.000	0.000	0.757	0.803	0.734
<u>PD Not Chosen ($n = 2089$)</u>			<u>PD Chosen ($n = 65$)</u>					
0.447	-0.133	-0.110	0.506	-0.033	-0.012	-0.590	-0.780	-0.760
0.000	0.000	0.000	0.000	0.795	0.926	0.555	0.435	0.447

Note. For all 2154 respondents, the correlation between the Quality of Professional Development and Collective Faculty Efficacy Scale Means was $r = .450, p < .001$. The Quality of Professional Development Scale Mean and the Sum of the Needs for Professional Development, $r = -.130, p < .001$; and for the Collective Faculty Efficacy Scale Mean and the Sum of the Needs for Professional Development, $r = -.106, p > .001$.

However, a test of the difference in the strength of these pairs of correlations using the Fisher r to z transformation indicated no effect of the group factor despite the difference in statistical significance (Quality of PD and the Sum of PD Needs [$z = -0.78$, $p = .435$]; Collective Faculty Efficacy and the Sum of PD Needs [$z = -0.76$, $p = .447$]). A review of the tests by teacher tenure and teacher experience also indicated no effect of the grouping variable when the strength of differences was measured in the seven other correlational pairs.

Research Question 3

What is the extent of the relationship between teachers' perceptions of the Quality of Professional Development, the Need for Professional Development and the Collective Faculty Efficacy at their schools, and such school-level student achievement indices as AYP status, percent proficient in reading and math, and averaged criterion-referenced scores in reading, math, science, and social studies?

Concerning the three variables and the indices of student achievement, statistically significant relationships were observed between Collective Faculty Efficacy and all seven indices of student achievement. Notably larger than the rest and highly statistically significant was the correlation between Collective Faculty Efficacy and the school's social studies CRT. As indicated in the note to Table 8, correlations among the three major variables under study were computed at the school level for the 110 institutions' student achievement indicators. The strength of the relationships was observed to increase systematically across the following: Quality of PD and Collective Faculty Efficacy ($r = 0.636$, $p < .001$), Quality of PD and the Sum of PD Needs ($r = -0.203$, $p = .033$), and Collective Faculty Efficacy and the Sum of PD Needs ($r = -0.224$, p

= .018).

As regards the three variables and the indices of student achievement, statistically significant relationships were observed between Collective Faculty Efficacy and all seven indices of student achievement. Notably larger than the rest and highly statistically significant was the correlation between Collective Faculty Efficacy and the school's Social Studies CRT achievement level ($r = 0.344, p < .001$). Somewhat smaller than the rest and only marginally statistically significant were the relationships between Collective Faculty Efficacy and the percentage of students proficient in mathematics at the school ($r = 0.229, p = .016$), and between Collective Faculty Efficacy and the school's Science CRT achievement level ($r = 0.230, p = .016$).

With the exception of the school's social science CRT achievement level ($r = 0.198, p = .038$), no statistically significant relationships were observed between teacher perceptions of the Quality of PD and student outcomes. Similarly, the Sum of Professional Development Needs did not correlate with either the school's social studies CRT achievement level ($r = 0.022, p = .817$) or making AYP level ($r = -0.132, p = .168$). Statistically significant relationships were observed with respect to the other five indicators, the largest being for the correlation between the Sum of PD Needs and percentage of students proficient in reading ($r = -0.343, p < .000$).

Table 8

School-Level Correlations between the Quality of Professional Development Scale Means, the Mean Sum of Professional Development Needs, and Collective Faculty Efficacy and Seven Indices of Student Achievement

Achievement Index		Quality of Professional Development Scale Mean	Sum of the Needs for Professional Development	Collective Faculty Efficacy Scale Mean
Mathematics Proficiency	r $p =$	0.100 0.300	-0.292 0.002	0.229 0.016
Reading Proficiency	r $p =$	0.111 0.248	-0.343 0.000	0.258 0.006
Mathematics CRT	r $p =$	0.097 0.314	-0.285 0.003	0.247 0.009
Reading CRT	r $p =$	0.111 0.246	-0.302 0.001	0.254 0.007
Social Studies CRT	r $p =$	0.198 0.038	0.022 0.817	0.344 0.000
Science CRT	r $p =$	0.089 0.353	-0.285 0.003	0.230 0.016
AYP	r $p =$	0.129 0.180	-0.132 0.168	0.279 0.003

Note. For all schools, the correlation between the Quality of Professional Development and Collective Faculty Efficacy Scale Means was $r = .636$, $p < .001$. The Quality of Professional Development Scale Mean and the Sum of the Needs for Professional Development, $r = -.203$, $p = .033$; and for the Collective Faculty Efficacy Scale Mean and the Sum of the Needs for Professional Development, $r = -.224$, $p = .018$).

Research Question 4

Among these variables, does the strength of these relationships differ based on the percentage of faculty whose professional intention is to keep teaching at the same school rather than to leave that school or district, or leave teaching altogether?

The MET question concerns teacher's immediate professional plans. Teachers were asked if they intend to: 1) continue teaching at their current school; 2) continue teaching in this district but leave this school; 3) continue teaching in this state but leave this district, 4) continue working in education but pursue an administrative position, 5) continue working in education but pursue a non-administrative position, or 6) leave education entirely. With the majority of teachers planning to remain at the school, teachers who selected option one were labelled "stayers" and those choosing any of the remaining options labelled "leavers." Breaking the sampled schools into two groups—those with less than 75% of faculty planning to stay ($n = 51$) and those with 75% or more of faculty planning to stay ($n = 59$)—correlations were computed between the seven student achievement indices and the three variables derived from teacher perceptions central to the study.

Examination of the correlation matrices reveals only one of the 21 correlations computed for the group with the smaller percentage of school "stayers" to be marginally statistically significant: that is, for social studies CRT and Collective Faculty Efficacy (where $r = 0.320$ and $p = .022$). By contrast, fully eight of the 21 correlations observed for the group with the larger percentage of school "stayers" were statistically significant, and in at least one instance it was highly significant (that is, for reading proficiency and the Sum of Professional Development Needs, where $r = -0.362$, $p = .005$). Albeit less

strongly, other achievement indices were statistically linked to the Sum of Professional Development Needs, include mathematics proficiency ($r = -0.306, p = .019$), mathematics CRT scores ($r = -0.299, p = .021$), reading CRT scores ($r = -.314, p = .016$), and science CRT scores ($r = -.0290, p = .026$). Also exclusive to schools with higher percentages of stayers were statistically significant correlations between Collective Faculty Efficacy and mathematics proficiency ($r = .0264, p = .044$), social science CRT scores ($r = 0.334, p = .010$), and AYP ($r = 0.309, p = .017$).

As with the aggregate, no significant correlations were observed for either group that involved student achievement and Quality of Professional Development. However, in addition to the greater number of statistically significant correlations observed for the schools having a greater percentage of stayers, there were also three statistically significant differences in the strength of the correlations. All of these differences favored schools having a higher percentage of stayers, and all of them involved the Sum of Professional Development Needs. For that variable and for that group of schools, significantly more robust correlations were observed than elsewhere for the Reading Proficiency achievement index ($z = -2.54, p = .011$), the mathematics CRT achievement index ($z = -1.98, p = .048$), and the reading CRT achievement index ($z = -2.13, p = .033$).

Table 9

School-Level Correlations Compared by Retention Level between the Quality of Professional Development Scale Means, the Mean Sum of Professional Development Needs, Collective Faculty Efficacy and Seven Indices of Student Achievement

Achievement Index		<u>Less than 75% Intend to Stay</u>			<u>75% or More Intend to Stay</u>			z_1 ($p =$)	z_2 ($p =$)	z_3 ($p =$)
		<u>($n = 51$)</u>			<u>($n = 59$)</u>					
		Quality PD	Sum of Needs	Collective Efficacy	Quality PD	Sum of Needs	Collective Efficacy			
Math Proficiency	r	0.069	-0.120	0.118	-0.047	-0.306	0.264	0.590	0.990	-0.770
	$p =$	0.630	0.403	0.408	0.722	0.019	0.044	0.555	0.322	0.441
Reading Proficiency	r	0.087	-0.120	0.206	-0.086	-0.362	0.238	0.880	-2.540	-0.170
	$p =$	0.543	0.401	0.148	0.517	0.005	0.069	0.379	0.011	0.865
Math CRT	r	0.092	-0.081	0.221	-0.141	-0.299	0.187	1.190	-1.980	0.180
	$p =$	0.522	0.572	0.119	0.287	0.021	0.157	0.234	0.048	0.857
Reading CRT	r	0.115	-0.093	0.259	-0.137	-0.314	0.171	1.290	-2.130	0.470
	$p =$	0.423	0.518	0.066	0.299	0.016	0.195	0.197	0.033	0.638
Social Studies CRT	r	0.197	-0.116	0.320	0.035	0.153	0.334	0.840	-1.380	-0.080
	$p =$	0.165	0.419	0.022	0.793	0.247	0.010	0.401	0.168	0.936
Science CRT	r	0.115	-0.066	0.240	-0.199	-0.290	0.137	1.610	1.180	0.540
	$p =$	0.423	0.644	0.090	0.131	0.026	0.302	0.107	0.238	0.589
AYP	r	0.062	-0.071	0.201	0.052	-0.117	0.309	0.050	0.240	-0.590
	$p =$	0.667	0.621	0.157	0.697	0.376	0.017	0.960	0.810	0.555

Summary

Across all 2,154 respondents, statistically significant relationships were observed among the scale means computed for the Quality of Professional Development, Collective Faculty Efficacy, and the Sum of Professional Development Needs. Using the Fisher r to z transformation, tests of the difference between two independent correlations were performed. They indicated that these relationships show no moderation by the respondents' demographic characteristics. When these statistics aggregated to the school level and integrated with school performance indices, no relationships were observed between teachers' perceptions of professional development and student outcomes. Consistently observed, however, were statistically significant correlations among these performance outcomes, school-level means on the Collective Faculty Efficacy Scale, and the school-level sum of Need for Professional Development. When schools split into subgroups based on the percentage of faculty intending to remain at the school, correlations resulted between a school's Sum of Professional Development Needs and the school-level percentage of students' proficient in reading. Students' CRT scores in mathematics and reading were found to be significantly more negative at those schools with a higher percentage of school "stayers." The implications of these findings are discussed in detail in the next chapter.

Chapter 5

Discussion

The purpose of this study was to determine the relationship between elementary teachers' assessment of the quality of and need for professional development, and their levels of self-efficacy as evidenced by faculty and student achievement outcomes measured school-wide. The researcher gained insight into the responses of elementary teachers at each grade level concerning their assessment of the quality of professional development at their school and need for further development, as well as collective teachers' efficacy. In addition, for the three variables stated previously, responses were aggregated to the school level to identify their correlation to student achievement outcomes. This chapter presents a discussion of findings in association with four research questions proposed for this study, followed by implications related to the findings, limitations of the study, and suggestions for future research.

Discussion of Findings

The first two research questions investigate the responses of the elementary teachers at the individual level to determine their assessment of the quality of professional development, the need for professional development, and collective teacher efficacy at their school. The second two research questions aggregated these same variables at the overall school level, measuring achievement data for students of each teacher as well as teachers' professional retention. A further discussion of the study results in relation to each of the four research questions is presented below.

Research Question 1

What is the extent of the relationship among teachers' perceptions of the quality of professional development at their schools, their self-assessed need for professional development, and their judgement of the teaching self-efficacy evidenced by their schools' faculty?

When the relationships among the variable means examined for all respondents, the highest level of correlation was between quality of professional development and collective teacher efficacy means, as shown in Table 7. This correlation suggests a positive relationship between teachers' perception of the quality of professional development at the school and their level of collective efficacy. In other words, when teachers perceived that they received high-quality professional development at their school, their level of collective efficacy increased. As discussed in Chapter 2, existing literature (Desimone et al., 2002) supports the rationale that professional development can have an impact on collective teacher efficacy. This logic is congruent with previous studies that have attempted to show professional development as having a positive impact on collective teacher efficacy (Bruce & Bruce, 2007; Moon, 2012; Skaalvik & Skaalvik, 2010). Professional development enhances collective efficacy when it functions efficiently, as teachers feel enabled to do their jobs in the classroom.

By contrast, the results of this study showed a weaker correlation between the sum of the need for professional development mean and collective faculty efficacy mean. In other words, teachers indicated that their need for professional development had little impact on collective faculty efficacy. It is possible that these teachers are confident in their teaching methods and have very little need for professional development.

Researchers (Beauchamp, Klassen, Parsons, Durken, & Taylor, 2014) have found that self- and collective efficacy beliefs change the way a teacher regulates and interprets experiences of emotion in the classrooms. Bandura (1977) suggests that a reciprocal source of efficacy (personal, behavioral, or environmental) influences their classroom practices. For example, when teachers notice that a change in their teaching actions (e.g. from a professional development experience) is influencing student performances, teacher confidence (self-efficacy) increases (Goodard et al., 2000). In addition, based on the authors' findings, career stage makes a difference in terms of the impact professional development will have on efficacy: New teachers entering the profession are more likely to report increases in self and collective efficacy as a direct result of professional development. Teachers, submerged in the traditional model of professional development, where staff activities have been conducted in isolation for many years, might have some initial difficulty learning how to engage their peers in contemporary professional development activities.

Research Question 2

Among the three variables mentioned previously, does the strength of the relationships differ based on teacher characteristics such as total years' experience, number of years teaching, or perceived importance of professional development in promoting student learning?

As previously stated, correlation testing was performed within the three variable means to identify whether or not the strength of the relationships differed based on the following qualities: years of experience (10 or more years' experience versus fewer than 10), teacher tenure (six or fewer years versus more than six years), or the respondents'

rating of the importance of PD in promoting student learning (selected or not selected as most important). Surprisingly, 16 of the 18-subgroup correlations remained statistically significant and, in most instances, highly statistically significant. However, when the strength of these correlations was measured using the Fisher r to z transformation, the test indicated no effect of the group factor despite the difference in statistical significance. This reinforces the point of view that professional development has the potential to raise faculty collective self-efficacy, which can have a positive effect on student outcomes (Zambo & Zambo, 2008). It is possible that these teachers are at schools where the faculty often talk, observe, critique, and play together. The schools' standards of collective responsibility and continuous improvement encourage them to teach each other how to teach better (Hoy, Tarter, & Hoy, 2006). In other words, school should be a place where all stakeholders share objectives and goals, partake in the norms of collegiality and hard work through professional development, and learn from the rich social history and stories that cultural diversity provides (Zambo & Zambo, 2008).

Interestingly, the results in Table 7 demonstrate that amount of teaching experience was not a predictor when it came to elementary teachers' perceptions of the following: quality of professional development, the sum of the need for professional development, and faculty efficacy at their schools. In a recent study conducted by Beauchamp et al. (2014) with elementary and middle school teachers, the researchers noted that when the teachers were asked to reflect on their efficacy in relationship to professional development, few teachers commented that professional development specifically influenced their level of efficacy. They did indicate that changes in their classroom practices resulted from professional development and stated that their level of

efficacy had changed after collaborating with other teachers (p. 44). In addition, the teachers in this study indicated that different practices of professional development increased their content knowledge or motivation in various subject areas, such as helping them to master specific concepts. This greater knowledge, in turn, increased their sense of confidence to engage in new classroom strategies (Beauchamp et.al, 2014).

These findings are in line with the conclusions from Goodard et al. (2000) discussed in the literature review. In a study on collective efficacy impact on elementary school teachers, the authors argued that if most teachers in a school sense they are highly efficacious, the norm at that school will press teachers to continue in their educational efforts. Furthermore, when high collective efficacy beliefs shape the norms of a school, they have a strong influence on teacher behavior, and consequently, student achievement (Soisson, 2013). If a teacher with average self-efficacy enters into a school where the faculties have high levels of collective teacher efficacy, this teacher may tend to exert more effort because of the total faculty beliefs (Cantrel & Hughes, 2008).

A surprising result of the present research, shown in Table 7, is that a large number of elementary teachers (2089) indicated that professional development is not an important indicator for student learning. However, correlations mean among the three variables identified a statistical relationship. Possibly these teachers see other factors along with professional development as affecting student learning. According to Smith and Gillespie (2007), experienced teachers have a strong belief in their own teaching competence, but a weak belief in the education system to reach all students, and believe that student success comes from factors beyond school control.

Another suggested factor why teachers reported that professional development is

not an indicator for student learning, as reported by Kukla-Acevedo (2009), is that some teachers view their teaching beliefs and commitments as the greatest influence on student learning. Hattie (2012) also reported that some teachers believe their teaching beliefs and commitments are the greatest influence on student learning. According to Hattie, teachers are constantly aware of the factors that prevent students from learning, including economic and social background, lack of enthusiasm, learning styles, distraction, and lack of parental support. However, successful or expert teachers understand that they cannot change students. They must become change agents, focusing on attributes they have control over. Hattie concluded that research clearly indicates that teachers make a difference in student outcomes. The author pointed out that the difference in effect size between a high-quality teacher and a low-quality teacher is about 0.25, which implies that a student in a high-impact teacher's classroom comprehends a year more of content knowledge than his or her peers in a lower-impact classroom. Although the research is mixed regarding the impact of professional development on student outcomes, studies do suggest that, with adequate time, commitment, and attention, professional development by teachers collectively matters in the long haul (Brinson & Steiner, 2007).

Research Question 3

What is the extent of the relationship between teachers' perceptions of the Quality of Professional Development, the Need for Professional Development, and Collective Faculty Efficacy at their schools, and such school-level student achievement indices as AYP status, percent proficient in reading and math, and averaged criterion-referenced scores in reading, math, science, and social studies?

As shown in Table 8, when the data for each of these three variables were aggregated based on elementary teachers' school levels, measuring correlations between these same variable means, teachers' seven-student achievement outcomes, and to determine whether a significant relationship exists between these variable means, with regard to Research Question 1, statistically significant relationships in the moderate to weak range were observed among the three-scaled variables means previously mentioned. Of the three correlation means, the highest observed is between the quality of professional development and collective teacher efficacy. While the correlation means observed between quality of professional development and the sum of the need for professional development are smaller, as are those between collective faculty efficacy and the sum of the needs for professional development, they are both statistically significant.

In essence, at the school level there was a direct link between teachers' perceptions of the quality of professional development, sum of the need for professional development and collective faculty efficacy. Current research on professional development (Brinson & Steiner, 2007) has noted the importance of building collective efficacy in schools. The researchers assert that this goal is attainable by providing teachers with the opportunity to gain instructional knowledge, collaborate with colleagues and receive positive feedback with a vision of success. Sparks and Hirsh (2000) suggest that professional development prepares teachers for the difficulties of giving the next generation of students the advanced skills and knowledge they will need for the unknown future. Professional development helps teachers heighten their content knowledge so they can better answer students' questions, give engaging lessons in the classroom, and help students with problem-solving skills (Sparks & Hirsh, 2000). Furthermore, professional development

encourages all of a school's stakeholders to adopt attitudes that support high-level learning, including the belief that all students can learn at high levels and meet national standards (Brinson & Steiner, 2007).

While all the inter-correlations among the variable means observed proved to be statistically significant, only the sum of the need for professional development and the collective faculty efficacy means scaled variables appeared to be statistically significant, and, in some results, highly significant as it relates to student achievement outcomes. The sum of professional development needs mean displayed an inverse relationship, with highly statistically significant results in five student achievement outcomes: reading proficiency, mathematics CRT, reading CRT, mathematics proficiency, and science CRT. In other words, as teacher's sum of the need for professional development goes up, student outcomes go down. In addition, collective faculty efficacy was highly statistically significant in all seven-student achievement outcomes: mathematics proficiency, reading proficiency, mathematics CRT, reading CRT, social studies CRT, science CRT, and AYP. These findings are consistent with past collective efficacy research, which suggests that faculty collective efficacy is a significant predictor of elementary students' reading and mathematics outcomes (Steele, 2008).

A final area of consideration for this research was the variation at the school level of student achievement outcomes. Teachers' perceptions of the quality of professional development at the school level were not directly correlated to student achievement outcomes. However, the sum of the perceived need for professional development and collective faculty efficacy directly correlated to student outcomes. In other words, teachers' perceptions of the quality of professional development at their schools were not

directly associated with student achievement outcomes, indicating no clear pattern in the relationships. However, perceived quality of professional development was indirectly related to student achievement outcomes, as seen in its relationship with the sum of the need for professional development means and collective faculty efficacy means. Possibly teachers see other factors as being associated with the quality of professional development and its relationship to student achievement outcomes. This result indicates that future studies need to address specific factors associated with quality of professional development and its impact on student achievement outcomes. Regardless, of these variations, professional development for teachers was considered by stakeholders as necessary for improving teachers' content knowledge and pedagogical practices in the classroom (Sparks & Hirsh, 2000). Support for this agenda is based on the notion that teacher knowledge and classroom practices facilitate the effect of professional development on student achievement (Yoon, et al.,2007).

Furthermore, Wenglinsky (2000) provided evidence that students whose teachers had received professional development focused on working with a specific population out-performed their peers on mathematics assessments by more than a full grade level. In addition, Wenglinsky (2000) suggests that teachers who receive a considerable amount of professional development (an average of 48 hours) can increase their students' academic achievement by about 21 percentage points. Contrastingly, a recent study conducted by Dash, Magidin Kramer, Dwyer, Masters, and Russell (2012) addressed the impact of online professional development on students' mathematics scores. The study reveals that teacher professional development has no impact on student achievement. This supports the conclusions of several large-scale studies conducted by the American Institute for

Research on middle school mathematics and early reading instruction (Dash et. al., 2012). Overall, these findings continue to shed light on how professional development links to collective efficacy and student outcomes.

Research Question 4

Among these variables, does the strength of these relationships differ based on the percentage of faculty whose professional intention is to keep teaching at the same school rather than to leave that school or district, or leave teaching altogether?

Table 9 shows school-level correlations associated with retention level between these variables and seven indices of student achievement outcomes. A positive result from this study found that teachers planning to remain at their school (“stayers”) outperformed teachers planning to leave their school (“leavers”). With regard to question four, as expected, “leavers” had only social studies CRT correlated in a statistically significant way with faculty collectively efficacy. However, the results were more significant for schools with more “stayers.” The sum of professional development needs showed statistically significant correlation with mathematics proficiency, reading proficiency, mathematics CRT, reading CRT, and science CRT in student achievement outcomes. Even stronger inverse relationships were seen with reading proficiency, mathematics CRT, and reading CRT. This led to a suggested conclusion that “stayer” teachers have high belief in collective teacher self-efficacy at their schools. From Ware and Kitsantas’ (2007) point of view, schools can inspire collective teacher efficacy beliefs by nurturing teachers and providing organizational support through positive collaboration within the teaching staff, administration, and supervision.

In addition, a relationship of trust between teachers and principals could be another logical explanation for these statistical results. This explanation further supported through prior research (Petersen, 2008) which established that a captivating leader, using what Bandura (1977) describes as verbal persuasion, generates group energy and purpose toward a goal. Furthermore, researchers found an indirect relationship between trust and student outcomes, as mediated by the collective efficacy of the faculty (Derrington & Angelle, 2013).

Implications

This quantitative study attempted to pull together a better understanding of elementary teachers' perceptions on the quality of professional development, need for professional development, and collective teacher efficacy demonstrated at their schools. In addition, these three variables from individual teachers were aggregated to their school level to measure student achievement outcomes based on their T-cap scores. The overall findings in this quantitative study are in accord with existing literature about professional development and its impact on faculty's collectively efficacy and student achievement outcomes. Notably, researchers suggested that future studies should focus on the effect professional development has on teachers and students (Yoon et al., 2007)—specifically, the direct effect on teachers and its indirect effect on students. One of the major implications of this study is that policy makers and central office administrators should use the data on teachers' perception of professional development, as a basis for designing a professional development process that teachers believe is objective and effective. Once a teacher buys into this process and has a stake in its outcomes, he or she will more likely view the evaluation process positively. If evaluation is to benefit all concerned parties, it

is critical that teachers have input in this process to insure that all stakeholders are knowledgeable about the what, why and how of the process.

The findings in this study may demonstrate the impact professional development has on faculty's collective efficacy, and its relationship to student achievement outcomes. A growing body of research focuses on professional development and faculty's collective efficacy. These findings on teachers' perceptions validate the assumption that professional development can be a direct link to faculty's collective efficacy, which translates into gains in student achievement outcomes (Yoon et al., 2007).

Limitations/Future Research

As with many studies, this research did have limitations that may have affected the results of the analysis. First, this quantitative study used a systematic random sampling approach to identify elementary teachers and schools. The quantitative process consisted of numerical data, based on an anonymous survey (MET) that participants completed online. Future research can benefit from a qualitative approach, which can give a descriptive account of how teachers perceive the impact of professional development and collective faculty efficacy on student achievement outcomes. Such a qualitative study would give the researchers more contextual information about which types of development teachers find useful. In addition, the qualitative process will allow researchers to ask the participants open-ended questions designed specifically for the study and collect the data in a natural setting, thereby establishing a direct relationship with the participants.

Secondly, the research collected general responses from elementary teachers relating to their perceptions on the quality of professional development, need for professional development and teachers' collective efficacy at their schools. The evidence makes it apparent that professional development and teacher collective efficacy play a major role in teachers' careers and student achievement. However, advocates who implement professional development are often not clear as to what specific improvements in teachers and students' performance should result (Mizell, 2010). Future research should focus on what specific types of professional development are essential to classroom teachers' needs. What types of professional development should teachers be involved in, and which do they most want to be involved?

The present research provides some evidence of the answer. In this study, when assessing their need for professional development, elementary teachers emphasized that closing the achievement gap and integrating technology in the classroom are major components to their success in the classrooms. Lawmakers, districts, and school leaders continue to collaborate on policies and teacher practices that promote students' academic success. Insight gained through this quantitative study can provide data that benefit educators in their collective efficacy reform efforts.

Finally, the participants in this research were limited to elementary teachers located in a large district in the Southeastern United States. Future research could widen the research participant pool, including middle and high school teachers. It would be interesting to know middle and high school teachers' perceptions of professional development and faculty collectively efficacy, as they relate to student achievement outcomes and teachers leaving or staying at their schools. Are their perceptions of the

quality and need for professional development at their school the same? Are faculty collectively efficacy beliefs the same? Do teachers who intend to remain at their school yield high student achievement outcomes? This type of research would continue to highlight the critical relationship among professional development, faculty collective efficacy and student achievement outcomes.

Summary and Conclusion

Previous studies have compared teachers' professional development with their student achievement outcomes and professional development with faculty's collective efficacy. The present study furthers this research by linking professional development and faculty collective efficacy with teachers' student achievement outcomes and faculty staying at or leaving their present school. The study used the Measures of Effective Teaching (MET) Working Conditions Survey ("Professional Development" section), and Report Cards (2009-2010) from the Tennessee Department of Education website, obtaining data using a two-tailed *t* test to determine statistical results for four research questions. The results indicated that teachers' perceptions of the quality of professional development need for professional development, and collective faculty efficacy showed a statistically significant correlation. However, the relationship with teachers' student achievement outcomes showed that need for professional development and collective faculty efficacy correlated in a highly statistically significant manner.

The main purpose of education at all levels is to provide a high quality of teaching. Student achievement is one of the most important criteria for determining the quality of education systems worldwide (Golob, 2012). As Golob and others have argued, professional development is an important factor in affecting student achievement

outcomes.

The difficulties of teaching are formidable. Mizell (2010) contends that teaching is so complex, one-third of teachers leave the profession within three years and 50% leave within five years. Even experienced teachers face difficult challenges each year, such as changes in the curriculum, new instructional strategies, advanced technology, new laws and procedures, diversity among student population, and varied student learning needs. For stakeholders to overcome these obstacles, educators must continuously link professional development to student achievement outcomes and collective faculty efficacy.

The present study expands on the outcomes of existing research, linking professional development and collective faculty efficacy with teachers' student achievement outcomes and faculty staying or leaving the profession. This study identified a statistical relationship among elementary teachers' perception of the quality of professional development, sum of professional development needs, and faculty collective efficacy at their individual schools. Moreover, teachers' perceptions of quality of professional development have been shown to be strongly linked to their perceptions of collective faculty efficacy; this was the strongest relationship.

This study found that when elementary teachers were placed in subgroups based on tenure, teaching experiences and professional development had a significant impact on student learning. The correlation means that resulted were statistically significant in terms of the relationship among three factors: perceptions of the quality of professional development, sum of professional development needs and collective faculty efficacy. However, with regard to elementary teachers' perceptions on professional development

impact on student learning, no statistical significance was observed in the strength of pairs of correlation using the Fisher r to z transformation. For the large number of teachers who did not select professional development as an indicator for student learning, the results were statistically significant. Conversely, for the small number of teachers who selected professional development as indicator for student learning, the results showed quality of professional development means and collective faculty efficacy means as statistically significant.

This study aggregated the variables to the school level, measuring seven student achievement outcomes. The school-level correlations between the quality of professional development means, sum of professional development need means, and collective faculty efficacy means were statistically significant. However, when the means of these variables were compared with student achievement outcomes, the results indicated highly statistically significant correlation with sum of the needs for professional development and collective faculty efficacy, with quality of professional development showing no direct statistical relationship to student achievement outcomes.

Finally, this study compared school-level correlations by retention level with the quality of professional development, sum of professional needs, collective faculty efficacy, and seven student achievement outcomes. Teachers planning to remain in the profession (“stayers”) outperformed teachers planning to leave the profession (“leavers”). Results from the teachers in the “stayer” schools indicated that the sum of professional development needs had a highly statistically significant effect on five out seven student achievement outcomes, as did collective faculty efficacy with three student achievement outcomes. By contrast, among “leavers” these factors showed a statistically significant

relationship with only one student achievement outcome.

In the final analysis, the relationships among elementary teachers' perceptions on the quality of professional development, sum of professional development needs, and collective faculty efficacy at their school, along with their staying or leaving the profession, are consistent with current research. The results suggest that professional development can be a direct link to collective faculty efficacy, which results in gains in student achievement outcomes (Yoon et al., 2007).

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APPENDIX A

Approved Consent Form

Dear Trainer Kern and Dr. Cross,

From the information provided on your Determination form the study,

“Professional Development and its Impact on Collective Teachers Efficacy and Student Achievement with Elementary School Teachers” the IRB Administrator has determined that your research uses 1) only coded private information, 2) that this data was not collected for your specific research project and 3) that the investigators cannot readily ascertain the identity of individuals about whom the private information pertains, therefore, you are not conducting human subjects research and 45 CFR 46 does not apply. This research does not require IRB approval nor review.