A DESCRIPTIVE CORRELATIONAL STUDY OF TEACHER PARTICIPATION IN PROFESSIONAL DEVELOPMENT AND TEACHER EFFICACY

by

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A DISSERTATION

Presented to the Department of Educational Methodology,
Policy, and Leadership
and the Graduate School of the University of Oregon
in partial fulfillment of the requirements
for the degree of
Doctor of Education

June 2013

DISSERTATION APPROVAL PAGE

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Title: A Descriptive Correlational Study of Teacher Participation in Professional Development and Teacher Efficacy

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Degree awarded June 2013

DISSERTATION ABSTRACT

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Doctor of Education

Department of Educational Methodology, Policy, and Leadership

June 2013

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This study examines teacher efficacy within the context of professional development to understand the relationship between teacher efficacy and teacher collaboration. Two theoretical frameworks framed this teacher efficacy study based on *locus of control* and *social cognitive theory*. A 29-item questionnaire was e-mailed to approximately 500 K-5 classroom teachers, special education teachers, and Title I specialists in 18 elementary schools and two K-8 schools in a suburban school district where the practitioners participated in staff development on the language arts and math adoption using the district-developed response-to-intervention model, Instructional Intervention and Progress Monitoring. Descriptive statistics, correlations, cross-tabulation and chi-square analyses were used to investigate the relationship between the level of teachers' participation in the professional development and their sense of efficacy.

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ACKNOWLEDGMENTS

I would like to thank my wife, Marni, for faithfully supporting me through this journey, whose unwavering spirit gave me the strength to complete this endeavor. I would also like to thank my mother, Tule, and father, Fatafehi, for their faithful prayers and support. Their countless sacrifices made it possible for me to achieve my goal. Lastly, I would like to thank my friend Larry for his unwavering friendship. I could not have done this without his persistent advocacy.

I thank Dr. Gerald Tindal for his guidance and leadership (and patience). I also express a deep gratitude to Dr. Julie Alonzo for her assistance in the preparation of this manuscript. Lastly, a special recognition of Dr. Ronald Beghetto, whose expertise in teacher development was helpful in this undertaking. I thank the members of the committee for their valuable time and input.

This research was made possible, in part, by the support of the Eugene School District 4J. Opinions and recommendations contained in this report reflect those of the author and do not necessarily reflect those of the Eugene School District 4J.

For Meleane and Mu'omu'a;
And Huni

Malo

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CHAPTER I

INTRODUCTION

"Teachers' beliefs in their efficacy affect their general orientation toward educational processes as well as instructional activities" (Bandura, 1997, p. 241)

The 1983 National Commission on Excellence in Education recommended in its report *A Nation at Risk: The Imperative for Educational Reform* multiple ways to address educational inequities and failures that plagued the nation's education system (Gardner, 1983). Among the failures addressed in the report was a non-challenging curricula, low expectations for children, ineffective use of class time, and an ill-prepared teacher work force. Since *A Nation at Risk's* (1983) recommendations, numerous efforts have also been introduced to improve education including The National Commission on Teaching and America's Future (2009), which further stressed that a quality education is fundamental to the success of the nation and necessary to the success of each child.

The call to improve the quality of the public education system has remained consistent over time in the literature and through policy. Armstrong, Henson and Savage (2009) stated that teacher quality is a chief cornerstone for ensuring all children receive a high-quality

education as well as a remedy for the inequities that exist in the public school system.

A key feature of effective school systems common among model professional development award-winning schools (Killion, 1999) is a focus on the development of teacher efficacy (Clark & Bates, 2003). Teachers' sense of efficacy is increasingly understood by researchers as a "sound theoretical framework for understanding the why's and how's of teacher development...and points to the potential value of a set of practical tools...that can be used to foster positive efficacy beliefs, improve teacher competence, and enhance student outcomes" (Clark & Bates, 2003, p. 20).

This study examines teacher efficacy within the context of professional development. Furthermore, this study explores the relationship among teachers' sense of self-efficacy (teacher beliefs about his or her capability to affect change), teacher characteristics (e.g., years of teaching experience), and teacher participation (the level of engagement or collaboration in the professional development).

Literature Search

A search of literature on “public education” identifies hundreds of sources citing the flaws in the public education system. Among these

search findings are strategies for improving student test scores, closing the achievement gap, increasing standards, raising expectations, and improving teacher quality. A recurring theme that crosses these topical lines is that of school improvement, in its many manifestations. Among these themes are professional development efforts aimed at improving the quality of schools and teacher practices.

To investigate teacher *efficacy,* I focused on professional development activities of teachers as the context, and several specific characteristics of teacher efficacy (self-perception of teaching competence and beliefs about the task requirements in a particular teaching situation) (Tschannn-Moran, Hoy & Hoy, 1998). I used this literature synthesis to define teacher efficacy (teachers' beliefs about their capability to affect change) and to suggest considering teacher efficacy in the application and development of professional development activities of schools.

In identifying literature for this review, the following search terms were used: *school improvement, professional development, teacher efficacy, and teacher practices and beliefs*. Subsequent literature searches expanded the terms to include *self-efficacy, teacher attitudes, teacher effectiveness, teacher efficiency, teacher's sense of usefulness,* and *teacher's sense of worth* and *value* based on search terms associated

with the articles located in the search. The search resulted in 157 sources related to *school improvement*, 76 related to *teacher efficacy*, 103 related to *self-efficacy*, and 89 related to *staff development*. Using the general search term *teacher efficacy* returned more sources than would be useful, as they numbered in the thousands. The narrower focus on the term *teacher efficacy*, in conjunction with the term *school improvement,* proved most useful.

The most common definition of school improvement found in literature relates to a general effort to make schools better places for students to learn, and covers a wide variety of activities ranging from quick fixes to comprehensive school reform. The commonalities observed in conceptualizations of school improvement were synthesized, and Miles, Elkholm, and Vandenberghe (1987) "found that the most common pattern for responding in local schools to [improvement] has been to find systematic ways to connect goals and results and thereby to improve the quality of the works so that the required results could be reached" (p. 647). Hopkins (1996) later provided a more technical description of school improvement, referring to it as a plan for educational change that increases student outcomes and strengthens the capacity of the school to manage change. Furthermore, Harris (2002) defined school improvement as "a systemic, sustained effort aimed at change in learning conditions

and other related internal conditions in one or more schools with the ultimate aim of accomplishing educational goals more effectively" (p. 10). These definitions reflect differences in the changing and growing understanding (as a field) of the complexities required to enact and sustain change. Professional development, capacity building, and sustainability have significant implications for schools because they underscore the belief that a key component of any school improvement effort is teachers' professional development.

Professional Development Contexts

Schools intending to improve their instructional practices must account for 'variables' that have negatively affected teachers' opportunity to participate fully in the professional development (PD) activities of the school. This teacher efficacy study considers the professional development 'variables' (PLCs or the setting, the level of collaboration, and teacher skills) related to teachers' participation in professional development activities. Guskey (2000), for instance, defines effective professional development as an ongoing and targeted-approach, part of an overall district mission and goals, conducted in a collaborative fashion, and evaluated regularly with opportunities for feedback and improvement. Furthermore, Borko (2004) suggests that teacher

professional development plays an important part in improving schools, and provided four elements of school improvement important to consider when planning the professional development activities of schools. She posits that schools need to consider (a) the PD program the school is implementing, (b) the teachers receiving the training, (c) the facilitators providing the training, and (d) the context in which the PD occurs. Furthermore, Borko identifies two teacher professional development 'good practices' that can have a positive effect on teacher learning. The first provides a foundation for an existing proof of effective professional development. The presence of high-quality professional development programs means that it can help teachers deepen their knowledge and understanding as well as transform their teaching. The second acknowledges the necessity of a well-planned professional development program. This is crucial for answering the question, "Can or will the professional development program be enacted with integrity and fidelity?" In other words, would there be fidelity of implementation if the professional development is implemented in different settings and or by different professional development facilitators? Answering these questions can help provide information about the implementation, expected outcomes, and required resources for planning and conducting professional development (2004).

Professional development efforts organized around a common purpose where the goals and functions are clear to all members provide an effective way to involve teachers in the school improvement process (Guskey, 2000). Traditionally, professional development is expensive to implement and requires time to execute, both of which have generally hampered many professional development efforts of schools short on time and money (Mizell, 2011). As schools try to mitigate barriers and improve the quality of teacher participation in professional development, an approach that has shown to encourage teachers' engagement in the professional development activities of school is the creation of *professional learning communities* (Guskey, 1986; DuFour, 2007; Tschannen-Moran & McMasters, 2009).

Professional learning community. A professional learning community (PLC) provides the setting and context for the learning of teachers, and can be a useful concept for organizing people in an organization who have a clear sense of their collective mission and a shared vision of the conditions needed to achieve that mission (DuFour, 2007). A PLC, when properly implemented, provides teachers with a venue and opportunity to engage in continuous improvement as they reflect on their own practice (Sergiovanni, 1996), gather and analyze

data (Reeves, 2005; Zepeda, 2008), and support one another as they implement strategies for improving schools (DuFour, 2004).

A focus of much of the research on PLCs, which provide teachers with an opportunity or venue for working and planning together, is the ways in which teachers working together can help to transform, not only teachers' skill sets, but also their attitudes about their profession and their abilities to make an impact through that profession (DuFour, 2007). Therefore, a community of learners can be a necessary ally in promoting teachers' professional development through collaborative and effective professional development. According to Showers and Joyce (1996), an important aspect of any school's professional learning and developmental activity is that teachers work together and learn from one another through *collaboration*.

Teacher collaboration. Showers and Joyce (1996) also showed that teachers who work together, plan together, and share aspects of their teaching experiences with one another are more likely to practice new learned skills and apply new strategies more frequently than teachers who work alone and in isolation. Learning communities foster teacher collaboration (Showers & Joyce, 1996), and encourage teachers to share learned information with each other in a true professional learning environment. This means teachers work collaboratively to

develop shared values and vision (Bolam et al., 2005; DuFour, 2004; Feger & Arruda, 2008; Hord, 1997; Kruse, Louis, & Bryk, 1994), collaborative culture (Bolam et al., 2005; Feger & Arruda, 2008; Kruse, Louis, & Bryk, 1994), focus on examining outcomes to improve student learning (DuFour, 2004; Feger & Arruda, 2008; Kruse, Louis, & Bryk, 1994; Louis, 2006), supportive and shared leadership (Feger & Arruda, 2008; Hord, 1997; Kruse, Louis, & Bryk, 1994; Louis & Kruse, 1995; Mitchell & Sackney, 2006), and shared personal practice (Hord, 1997; Kruse, Louis, & Bryk, 1994; Thompson, Gregg, & Niska, 2004).

Teacher skills. Another aspect to consider in the professional development activities of schools is the *skills* (O'Neil, 1997) of the individuals (teachers). Skilled teachers who share their learned experiences with one another in a learning community can increase the school's capacity for change (Guskey, 1987).

High-performing organizations require individuals with the skills, knowledge, and attitude needed to complete tasks (O'Neil, 1997). Teacher skills run the gamut from monitoring student progress (Fuchs & Fuchs, 2002) to setting high expectations (Reeves, 2002), and from employing high quality instructional strategies (Curtis & City, 2009) to engaging in collaborative decision-making (Reeves, 2010). An important goal of school improvement is enhancing the skills and abilities of

teachers through professional development (Guskey & Huberman, 1995). Educators and researchers have identified professional development as an effective tool for learning of new skills (O'Neil, 1997) and for finding new strategies for improving teaching and learning (Zepeda, 2008). Therefore, an effective learning community is a function of the teachers' knowledge, skills, and attitude (O'Neil, 1997).

To guard against failed school improvement efforts, Tschannen-Moran and McMasters (2009) agreed with an earlier conjecture by Guskey (1986) that schools must first take into account the factors or variables that motivate teachers to participate in professional development (collaboration), and second understand the processes that lead to changing teacher practices (skills).

Efficacy Theory

However, one variable that has not been addressed fully regarding professional development effectiveness is *teacher efficacy* (Bandura, 1989a; Clark & Bates, 2003; Guskey, 1987; Tschannen-Moran, Hoy & Hoy, 1998). Teacher efficacy is commonly defined as teachers' beliefs about their capabilities to affect, influence or produce change (Tschannen-Moran & McMasters, 2009). I argue teacher efficacy is an important element to consider in the professional development of

teachers, and it needs to be examined for enhancing teachers' participation in the professional development activities of schools.

Teacher efficacy is said to be an integral part of identifying the quality of teachers available to teach children because it deals with "teachers' belief in his or her capability to organize and execute courses of action required to successfully accomplish a specific teaching task in a particular context" (Tschannen, Hoy & Hoy, 1998. p. 223). Additionally, teacher efficacy can "affect how [teachers] perceive and act on various messages about changing their teaching" (Guskey & Huberman, 1995, p. 59).

Two theoretical frameworks have traditionally been used to frame teacher efficacy. The first attempt to define teacher efficacy is grounded in Rotter's (1966) Locus of Control. Here, efficacy is defined as the extent to which individuals believe they have control over events in their lives. Furthermore, locus of control is distinguished into two parts: (a) internal locus of control and (b) external locus of control. The former suggests that individuals believe their lives are controlled largely by internal means such as their own behavior, self-motivation, self-fulfillment, and self-pride. The latter suggests that individuals believe their lives are controlled by external means such as fate, chance and luck. The locus of control theory is significant in conceptualizing 'efficacy' as the extent to

which teachers believe they have control over their environment (Rotter, 1966). When applied to the school environment context, teachers with high self-efficacy are theorized to have greater capacity for change (Tschannen, Hoy & Hoy, 1998), and to be more confident in solving difficult issues of practice as well as in their own teaching ability (Zepeda, 2008).

Much of the research on teacher efficacy is based on Bandura's (1977) Social Cognitive Theory, which expands on Rotter's (1966) locus of control, where human choices or behavior is controlled by internal or external factors, and attempts to frame human behavior in the context of human agency (e.g. Gibson & Dembo, 1980; Hoy & Spero, 2005; Tschannen, Hoy & Hoy, 1998). Bandura (1977) argued that human beings are capable of pursuing their own courses of action and thus have the capacity for self-determination and self-efficacy. Furthermore, social cognitive theory defines self-efficacy as the belief that one has the capability to execute a particular action and theorizes that efficacy is a major determinant of people's choices of activities, how much effort they will expend, and how long they will sustain the effort in dealing with stressful situations (Bandura, 1977).

Additional research on social cognitive theory produced two categories of self-efficacy processes. First, Bandura and Adams (1977)

proposed *Cognitive Processes* as ways to describe people's thinking processes, which require the acquisition, organization, and use of information. It is important to know that how people receive and process information is highly dependent on their emotional state of mind. Second, *Affective Processes,* which regulate emotional states and elicitation of emotional reactions (Bandura, Reese, & Adams, 1982; Bandura, Taylor, Williams, Medford & Barchas, 1985), help researchers to understand teachers' state of mind. Affective processes refer to how people process information—how they think, feel, and believe—which are important aspects to consider when developing the professional development activities of schools (Bandura, 1977).

Measures of teacher efficacy. Guskey (1987) conducted a meta-analysis on context variables that affect measures of teacher efficacy. He presented a model describing three context variables believed to affect measures of teacher efficacy that considers: (a) the nature of the student performance outcome (positive or negative), (b) the ability of the students involved (high or low), and (c) the scope of influence (single student or group of students) (Guskey, 1987). This particular study is significant for understanding the variables that “influence” teachers because it seeks to answer the question, "What are the factors that influence teacher beliefs?" Data from Guskey's study were gathered from 114

experienced elementary and secondary teachers through attitudinal and perceptual self-reports. Although correlation analysis generally supported the model, factor-analytic procedures failed to yield clearly distinct factor dimensions (1987).

Guskey (1987) reported that, similar to other studies, these data show that perception of efficacy differs depending upon the nature of the student outcome. Teachers expressed significantly greater personal efficacy when the performance outcome of students was positive (R-positive) than when it was negative (R-negative) ($t = 5.09$, $p < .01$). That is, teacher perceptions tended to be more defensive in nature, and accepting greater personal responsibility for classroom successes than for classroom failures. The data also indicated that teachers' perceptions of their efficacy differed depending upon student outcome. Furthermore, these teachers expressed significantly greater personal efficacy for group results (R-group) than for those involving a single student (R-single) ($t = 4.12$, $p < .01$) (Guskey, 1987). In a sense, the thought processes of teachers, including beliefs, are important aspects for educators to consider for professional development planning and implementation.

Early works of Bandura (1989a) focused on cognitive and affective processes defined how individuals process and react to information. He provided two self-efficacy processes based on better understanding of

social cognitive theories. The first process, *motivation,* is defined as activating an individual to action. In other words, the level of motivation is reflected in the individual's choice of courses of action; and that teachers make choices depending on the intensity and persistency of their efforts (1989a). The second process, *self-regulation,* is defined as the exercising of influence over one's own motivation, thought processes, emotional states and patterns of behavior. It can have an effect on the teacher's sense of efficacy, which could lead to an effect on professional development activities (Bandura, 1991b).

Earlier studies on teacher beliefs revealed that teachers generally report information about students is the most important factor in their instructional planning (Borko & Shavelson, 1990), and that teachers consider students' ability to be the characteristic that has the greatest influence on their planning decisions (Guskey, 1987). For example, if teachers want students to shift their view of math problem solving from an 'arithmetic approach' to an 'algebraic approach,' teachers must also shift their practices and their views of the learner. This means teachers must learn to adapt their teaching approach and student expectations. Improvements to practitioners and administrators' understanding of teachers' views of the development of students' knowledge also strengthens their understanding of the complexities of teaching, which

may ultimately enhance programs for teacher preparation and professional development (Borko & Shavelson, 1990).

Self-efficacy. The belief in personal efficacy affects life choices, level of motivation, quality of functioning, resilience to adversity, and vulnerability to stress and depression (Bandura, 1994). People's beliefs in their efficacy are influenced by: (a) mastery experiences, (b) seeing people similar to oneself manage task demands successfully, (c) social persuasion that one has the capabilities to succeed in given activities, and (d) inferences from somatic and emotional states indicative of personal strengths and vulnerabilities (Bandura, 1994).

Tschannen-Moran, Woolfolk Hoy, and Hoy (1998) defined teachers' efficacy as "the teacher's belief in his or her capability to organize and execute courses of action required to successfully accomplish a specific teaching task in a particular context" (p. 223). This assertion fits the belief that teachers' efficacy, whether teachers have high efficacy or low efficacy, is somewhat related to not only their own performance but that of their students as well.

Borko (1997) examined teacher efficacy and surmised that a person's beliefs serve as filters through which new ideas are perceived and interpreted. "When teachers' beliefs are compatible with the ideas that underlie a staff development program, these beliefs support the

change efforts. When these ideas are incompatible with their beliefs, various scenarios occur" (Borko, 1997, p. 236). This means teacher efficacy can be a useful tool to gauge the cognitive status as well as the emotional readiness of teachers in light of professional development planning, training and evaluating. Additionally, “when beliefs remain unchanged, teachers either ignore the new initiative or adapt new ideas into their existing practices” (Borko, 1997, p. 237).

Efficacy and beliefs. Teachers differ in their efficacy beliefs, and differences in teacher practices and student outcomes related to teachers’ efficacy beliefs can be observed (Kronberg, 1999). Earlier studies by Ashton and Webb (1986) and later by Ross (1994) documented that:

> Teachers [who score higher on measures of teaching efficacy] (a) are more willing to accept responsibility for student success and failure, (b) are more likely to implement innovations, (c) encourage more student autonomy, (d) have positive attitudes toward students identified as low achievers, and (e) communicate clear expectations to their students (as cited in Kronberg, 1999, p. 8).

Exploring the meaning and impact of efficacy from the perspectives of classroom teachers can be an effective way to describe the relationship between personal teaching efficacy and teaching and learning. Kronberg

(1999) generated an 'exploratory theory' of teacher efficacy in the context of four heterogeneous fifth and sixth grade classrooms and showed how four elementary teachers identified as being efficacious described the relationship between personal teaching efficacy and teaching and learning. Kronberg's study is important because it sought to expand the existing research-base on efficacy to include teachers' perspectives, experiences and insights.

The findings indicate that teachers' need for continual integration of beliefs and practice was at the core of the relationship between teacher efficacy and teaching and learning (Kronberg, 1999). Teacher beliefs about student learning greatly influence teachers' instructional practices. In other words, to achieve congruence between beliefs and practices, efficacious teachers must engage in the continual process of constructing meaning in order to enhance (a) the quality of teacher-student relationships, and (b) the effectiveness of instructional practice (Kronberg, 1999).

Nathan and Koedinger (2000) made important links between the importance of teacher beliefs and professional activities by examining teachers' views on how algebraic problem-solving and social cognitive development are connected. According to Nathan and Koedinger, teacher cognition plays a central role in shaping teachers' instructional practices

(2000). Borko and Livingston (1989), Schoenfeld (1998), and Thompson (1992) weighed in on the central role teacher beliefs play in teacher education, professional development, and developing instructional materials and activities.

Examining discrepancies between teachers' and researchers' predictions and students' performances gives credence to social cognitive learning theories, which suggest that "internal processes such as beliefs, expectations, and feelings mediate the relationship between external forces and overt behaviors" (Nathan & Koedinger, 2000, p. 243). Referenced primarily in psychology, self-efficacy corresponds with a person's belief in his or her own competence and ability to produce effects.

Geijsel, Sleegers, Stoel and Kruger (2009) examined the effect of teacher psychological, school organizational, and leadership factors on teachers' professional learning. They explored the relative importance of teachers' psychological states, school organizational conditions (teacher collaboration and participative decision-making), and the leadership practices (vision, individual consideration, and intellectual stimulation) of principals at their schools in explaining observed variation in teachers' professional learning in Dutch schools. This study is important because it highlights the relevancy of understanding the constructs around

teacher efficacy and it examines teacher beliefs in the context of teacher participation in professional development activities and how teachers response to the learning activities of students.

Response to intervention as a context variable with efficacy. According to the National Joint Committee on Learning Disabilities (2010), many RTI models focus on interventions, implementation processes, and the identification of best practices. Instructional strategies are thought to be effective when student data are linked to Response to Intervention (RTI) strategies and models that spotlight students' academic and behavioral needs. Furthermore, the research identifies a key feature of RTI is the use of continuous progress monitoring through frequent, brief, individual assessments of early reading, mathematics, or behavior that include criteria for adequate progress (NJCLD, 2010).

Research on data-driven instructional strategies found strong ties to response to interventions models (RTI) and vice versa. However, Gresham, MacMillan, Boebe-Frankenberger, and Bocian (2000) found that instructional strategies are only as effective as the level and quality with which they are implemented. In other words, fidelity of implementation is important both at the teacher and at the school levels and if delivered and replicated as designed. Batsche et al. (2006) noted

that RTI is dependent on the quality of the instruction as well as the regularity of use of progress monitoring data to make important intervention decisions about students' learning needs. In essence, the fidelity of implementation depends on the efficacy level of the teachers implementing instructional strategies. Therefore, purposeful and efficacious use of data derived from decision-making models may be critical aspects of successful implementation of RTI models for improving teaching and learning (2006).

Current professional development activities focused on providing quality instruction that is targeted, intentional, and prescriptive require teachers to use student data purposefully to drive their instructional decisions (Reeves, 2010). One objective of this study is to examine if teachers' perception of their self-efficacy has any correlation with the professional development activities in which they participated. Mere participation in the PD is insufficient; therefore, teachers need the opportunity to participate in high quality, research-based professional development that focuses on how they can use student data to guide their instruction and respond to students' instructional needs.

The Connection between Professional Development and Efficacy

Geijsel et al. (2009) analyzed four elements of professional development learning activities: (a) keeping up to date (or collecting new knowledge and information), (b) experimentation, (c) reflective practice, and (d) innovation based on data. The instrument used in this study consisted of 54 items administered to teachers from 18 Dutch primary schools (grades 1–8). To test their theoretical model, Geijsel et al. (2009) collected data from 328 teachers and analyzed their responses to the survey using structural equation modeling. The results showed psychological factors (teachers' sense of self-efficacy and internalization of school goals into personal goals) had strong effects on teachers' participation in the professional learning activities. The results showed three of the four distinguished professional development learning activities could be found in the data they had collected (2009).

They found teachers viewed 'reflective practice' as an integral part of the experimentation rather than a separate activity (Geijsel et al., 2009). For example, reflective practice did not emerge as a separate factor, which suggests that teachers perceive professional development learning activities as representing higher-order learning. Second, their findings showed strong support for the effects of teachers' sense of self-efficacy on their professional development learning activities. They

added that, on average, teachers with strong beliefs in their own capabilities were more involved in learning activities. They also found that teacher efficacy was the only variable in the model that directly related to all three of the professional learning activities in their study (Geijsel et al., 2009).

In this teacher efficacy study, I examined the relation of teachers' sense of efficacy and their level of participation in professional development (PD) through a descriptive study set in a medium-sized school district in the Pacific Northwest. The district in which the professional development was provided had undergone several years of focused and intentional professional development employing important features of essential professional development identified in the literature. These essential elements include having a common focus linked to the overall district mission and goals (DuFour, 2007), using an ongoing and targeted-approach (Guskey, 2000), conducting the professional development in a collaborative fashion (Showers & Joyce, 1996), and evaluating the impact and effectiveness of the professional development regularly with opportunities for feedback and improvement (Guskey, 2000). Through analysis of extant data sources, I sought to better understand the level of teacher participation in district-sponsored professional development opportunities as well as to gather information

about teachers' sense of efficacy that might assist the district in developing future professional development activities.

The district was chosen, in large part, because of its well-documented involvement in professional development as part of a federally-funded model demonstration project on progress monitoring in literacy in a Response to Intervention (RTI) framework (Curtis, Sullivan, Alonzo, & Tindal, 2011). As part of this project, the district engaged in a multi-year process of structured staff development on the development of their Instructional Intervention Progress Monitoring (IIPM) initiative in conjunction with the adoption of new language arts curriculum and later on expanding the use of the IIPM model to include mathematics, in conjunction with the adoption of new math curriculum. The IIPM model, developed to address educational inequalities and instructional needs of both students receiving general and special education services in the district (Curtis et al., 2011), offers a framework for guiding decisions on differentiated instruction and educational services.

Research Questions

1. What was the level of teacher participation in district-sponsored professional development at the end of School Year 2011-2012?

2. What is the relation between teacher participation in district-sponsored professional development in School Year 2011-2012 and teachers' sense of efficacy, in relation to their teaching?

CHAPTER II

METHODS

In this chapter, I describe the setting in which the study occurred and the demographics of the participating teachers. I then explain the data sources. Lastly, I discuss the data analyses.

Setting and Participants

I conducted this study in a suburban school district involved in a school improvement effort to improve teacher effectiveness and increase student achievement. This study took place in a school district located on the south end of Oregon's Willamette Valley, between the Cascade Mountain Range to the east and the Pacific Ocean to the west. The school district is the largest of 16 districts in the county. The county encompasses an area of over 4,500 square miles spanning 50 miles to the east, 70 miles to the west, 15 miles to the north and 30 miles to the south. The district is situated in the third largest city in the state (about 156,185 residents) which is home to a top-tier research university. As the sixth-largest school district in the state with approximately 17,000 students, the district in which this study was conducted is regarded as both innovative and progressive. The district's proximity to the research

university gives it advantages in conducting educational research as well as opportunities for teacher training and professional development.

In 2012, the county's population numbered 354,542 residents, of which Whites accounted for 90.6% of the county's population, Blacks only accounted for 1.1%, Hispanics accounted for 7.6%, and Pacific Islanders, Native American and others accounting for the remaining balance (U.S. Census, 2013). The district's student population percentages at the time of the study differed slightly from that of the county.

The district hired three staff development specialists to provide structured, high-quality staff development to support the district's language arts and math adoption using the district-developed response-to-intervention model, *Instructional Intervention and Progress Monitoring* (IIPM). The three staff development specialists supported 210 teachers in 24 elementary schools over the course of several years. (Four schools were either closed or later merged, thus reducing the number of schools to 20.) The IIPM model was designed to address educational inequalities for students at the district and to augment instructional needs of both general and special education students in the district (Curtis et al., 2011), as part of a collaborative and federally-funded effort between the district and researchers at a local university. The IIPM model provided

the district with common goals, common language and a common framework around a response-to-intervention approach, and gave a structure for addressing staff development needs in the district pertaining to the RTI approach.

Prior to district involvement in the model demonstration project, staff development support at the district and building levels had been drastically decreased for funding reasons (Curtis et al., 2011). With curriculum and instruction determined at the building and classroom level, this created varying degrees of instructional freedom throughout the district. According to Curtis et al. (2011), "there was neither a shared understanding nor any expectation that teachers would use a common curriculum or teach to state standards" at the district (p. 14). In short, individual schools operated with a high degree of independence making it difficult to organize professional development support in an intentional and on-going way. With new federal funding in hand, the district explored coaching models of professional development and allocated funds to hire a small team of staff development specialists to provide professional development and coaching support to teachers on the language arts and math adoption using the IIPM model.

At the time the data used for this study were gathered, the district's IIPM model and the professional development surrounding it

had been in place for six years. In the year prior to data collection, the main focus of the district's professional development had been on supporting elementary schools with their implementation of the math curriculum that had been adopted two years prior (Curtis et al., 2011).

District demographics. The district's population included approximately 22% minority students, of whom 3% identify as Black; 8% identify as Hispanic; 6% identify as Asian/Pacific Islander, American Indian, or Native Alaskan descent; 5% identify as Multi-ethnic; 73% identify as White/European origin, and 5% are either unreported or Unspecified (Curtis et al., 2011). During the 2011-2012 school year, the average daily attendance rate of students in the district was 93.6%, and the operating cost per student was $8,290 (Oregon Department of Education, 2012). During the 2011-2012 school year, 96.8% of classes in high poverty schools were taught by highly qualified teachers compared to 98.3% at the state (Oregon Department of Education, 2012). Fourteen percent of students were identified as special education compared to 13.2% at the state, and 2% of students were in ESL programs compared to 8.9% at the state (Oregon Department of Education, 2012). In all schools, 97.4 % of students are taught by state-identified Highly Qualified Teachers as compared to 98.3% in the state (Oregon Department of Education, 2012).

According to 2012 district information, there are 18 elementary schools, of which two are K-8 programs (Eugene 4J, 2012). The rest of the district educational programs consist of seven middle schools, four comprehensive and two alternative high schools, an International High School program in each of the four comprehensive high schools, and four public charter schools (Eugene 4J, 2012). Nine elementary schools and three alternative schools were designated Title I schools, meaning that they were eligible to receive federal aid for serving students from low-income families. Five of these schools were designated as "Title I School-wide Projects" indicating that 50% or more of their students are from families living in poverty (Curtis et al., 2011).

Staffing information. The district employed 733.4 licensed teachers, 215.1 instructional assistants, 52.6 administrators, and 694.3 other support staff (Oregon Department of Education, 2012). Teachers had an average of 13.1 years teaching experience, 78.9% had a Master's degree or higher and 1.5% had an emergency or provisional credential (Oregon Department of Education, 2012).

Data Sources

Data for this study were obtained from a one-time district-administered online survey of teachers. Although all targeted grade

leveled teachers were invited to participate in the online survey, the district did not require or track participation. Invitations to participate in the survey were sent out by district professional development specialists using district e-mail accounts. The e-mail invitation provided a brief description of the study and why teachers were being asked to participate ("The district is gathering information about the levels of participation in district-planned professional development activities and on teachers' perceptions of the usefulness of the professional development activities offered."). The e-mail included a link to the online survey. Individual responses were not traceable back to individual teachers, as all teachers were sent the same link to the survey in the e-mail in which they were invited to participate. In all, approximately 500 teachers were sent invitations to complete the online survey. Of these, 176 completed the survey, a response rate of 35%.

The survey consisted of 29 district-created survey questions to elicit information about teachers' perceptions of the effectiveness of professional development on supporting the language arts and math adoption as well as teachers sense of efficacy (see Appendix). Of these, three gathered basic demographic information about respondents (school where they teach, grade levels they teach, and the number of years teaching in current position). Seven asked teachers to provide

information on self-efficacy, six on teacher efficacy, four on collaboration, three on changed practice, two on professional development, and four were open comment items.

Data Analyses

I computed descriptive statistics to provide demographic data for count and percentages of the sample population. In addition, I conducted correlational analyses to explore the relation between the different survey questions and each of the questions related to teachers' efficacy teaching math, efficacy teaching reading, and collaboration. Lastly, I conducted cross-tabulation with chi-square tests to explore the relation between teacher efficacy and teacher participation using the variables that were conceptually linked.

CHAPTER III

RESULTS

In this chapter, I first describe the survey sample. Second, I describe the responses to survey questions about math. Third, I describe the responses to survey questions about (a) reading, (b) instructional proficiency, (c) collaboration, and (d) IIPM and ELL/CLD Data Team Process. Finally, I describe correlational analyses, and cross tabulation with chi-square analyses.

Table 1 provides demographic data for the sample population and percentages of teachers who participated in the study. Specifically, Table 1 provides the number and percent of grade-level teachers, special education teachers, Title I teachers, learning center and other specialists who completed the survey. In addition, this table presents the number of years participating educators taught in the district within their current level; this information is divided into three categories (0-3 years, 4-10 years, and 11 or more years) in an effort to account for the wide range of teaching experience among the participants.

Table 1.

Demographic Data for Teachers Who Completed the Survey

Teachers by grade levels	*N*	%	Years teaching		
			0-3 years	4-10 years	11 or more years
First	24	14	5	10	9
Second	26	15	8	11	7
Third	25	14	5	15	5
Fourth	19	11	4	6	9
Fifth	27	15	6	11	10
SPED	14	8	1	9	4
Title I	9	5	2	6	1
TLC/ESC	6	3	4	1	1
Kindergarten	12	7	2	2	8
Other grade levels	6	3	2	2	2
Other assignments	8	4	2	4	2
Total	176	100	41	77	58

Table 2 provides a summary of the data by grade level groups in ranges from K-2, 3-5, Special Education, Title I, and TLC/ESC specialists, other grade levels, and other teaching assignments in addition to years teaching and percentages.

Table 3 provides a breakdown by category (themes) of the survey items by count as well as percentages as were designed by the survey designers.

Table 2.

Demographics for Participating Teachers by Grade

Teachers by grade groups	*N*	%	Years teaching					
			0-3	%	4-10	%	11 or more	%
K-2	62	35	15	9	23	13	24	14
3-5	71	40	15	9	32	18	24	14
Sped	14	7	1	0.5	9	5	4	2
Title I	9	5	2	1	6	3	1	0.5
TLC/ESC	6	3	4	2	1	0.5	1	0.5
Others	14	9	4	2	6	3	4	2
Total	176	100	41	24	77	43	58	33

Table 3.

Themes of Survey Items

Themes of Survey Items	*N*	%
General/demographic	3	10
Math	8	28
Reading	4	14
Prof. dev./collaboration	5	17
Data team process	4	14
Science	2	7
Open items	3	10
Total	29	100

Table 4 provides a summary of the survey items grouped into categories (themes) reflecting the major areas of interest for the study. District administrators and staff development specialists with little input from the researcher independently designed the survey questions; therefore, the major categories were pre-determined at the district.

Table 4.

Survey Items Grouped by Researcher

Survey Items Grouped by Researcher	*N*	%
Changed practice	3	10
Collaboration	4	14
Self-efficacy	7	24
Teacher-efficacy	6	21
Prof. development	3	7
Open items	3	14
Demographic data	3	10
Total	29	100

Description of Sample

The sample included teachers from 18 elementary schools, and 2 K-8 school, ranging from 2 to 17 respondents per school. Of the 176

participants, 12 (7%) taught Kindergarten, 24 (14%) taught 1st grade, 26 (15%) taught 2nd grade, 25 (14%) taught 3rd grade, 19 (11%) taught 4th grade, 27 (15%) taught 5th grade, 14 (8%) were special education professionals, 9 (5%) were Title I employees, 6 (3%) worked at the TLC/ESC, and 14 (8%) reported teaching assignments as *other.* Of the 176 participants, 41 (23%) reported having taught 0 – 3 years at their current grade level assignment, 77 (44%) reported having taught 4 - 10 years at their current grade level assignment, and 58 (33%) reported having taught 11 or more years at their current grade level assignment. Twenty three percent (13%) of participants reported not teaching math, 63 (36%) reported teaching less than 70 minutes of math daily, 67 (38%) reported teaching about 70 minutes of math daily, and 23 (13%) reported teaching more than 70 minutes of math daily.

Responses to Survey Questions about Math

Table 5 provides a summary of participants' responses to four questions related to their perceived comfort level, effectiveness, and proficiency using the district's comprehensive K-5 math program. Overall, participants rated themselves as moderately proficient using the district's math program and about 62% *agreed* or *strongly agreed* that they were effective teaching math. Thirty five percent (35%) of the

participants indicated they *agreed* or *strongly agreed* with a statement claiming proficiency using the district's adopted math programs for students above the 90th percentile, while 44% of the participants reported they *agreed* or *strongly agreed* that they felt proficient using the district's adopted math programs for students below the 20th percentile. Additionally, 33% of the participants reported feeling *confident* teaching the district's adopted math program, while 49% reported they were only *building confidence* in this area.

Table 5.

Teacher Responses to Survey Questions Rating Their Proficiency Teaching Math

Survey Question	Strongly Agree		Agree		Neutral		Disagree		Do not Teach Math	
	N	%	*N*	%	*N*	%	*N*	%	*N*	%
Effective teaching math	18	10	92	52	35	20	11	6	20	11
Proficient w/students above the 90th percentile	13	7	50	28	42	24	47	27	24	14
Proficient w/ students below the 20th percentile	16	9	67	38	35	20	38	22	20	11
	Confident		Building Confidence		Struggling		Do not Teach Math			
	N	%	*N*	%	*N*	%	*N*	%		
Rate your comfort level teaching the district's adopted math program	58	33	87	49	11	6	20	11		

Responses to Survey Questions about Reading

Table 6 provides a summary of participants' responses to two questions related to their perceived effectiveness meeting the needs of students in reading. Overall, the participants rated themselves as moderately proficient in teaching reading, with 40% feeling proficient to a *great extent* in meeting students' needs above the 90th percentile, and 33% feeling proficient to *some extent* in meeting students' needs above the 90th percentile. In addition, the participants rated themselves as moderately proficient teaching reading, with 36% who categorized themselves as *to a great extent* proficient in meeting the needs of students below the 20th percentile, and 42% who categorized themselves as *to some extent* proficient in meeting the needs of students' who are below the 20th percentile.

Table 6.
Teacher Responses to Survey Questions Rating Their Proficiency Teaching Reading

Survey Question	To a Great Extent		To Some Extent		To a Small Extent		Not at All		Do not Teach Reading	
	N	%	*N*	%	*N*	%	*N*	%	*N*	%
Proficient meeting students' needs above 90th percentile	71	40	58	33	8	5	2	1	22	13
Proficient meeting students' needs below 20th percentile	63	36	74	42	7	4	0	0	21	12

Table 7 provides abbreviations for survey items related to Table 8.

Table 7.

Abbreviations for Survey Items Related to Proficiency

Abbreviation	*Survey Item*
M & R Work Samples	I am proficient teaching and scoring work samples in math and reading.
Differentiated Instruction	I am proficient using the curriculum to differentiate instruction (in all content areas).
M Inquiry-based	I am proficient using inquiry based math instruction.
M Facilitation	I am proficient facilitating mathematical discourse / questioning strategies in the classroom.
M Assessment	I am proficient developing and using formative and summative assessments in all content areas.
Use of Technology	I am proficient effectively utilizing technology.
Common Core	I am proficient understanding the Common Core State Standards (ELA and math).
CLD	I am proficient in CLD instructional strategies.
Learning Goals	I am proficient identifying clear learning goals for myself and students.
Writing Strategies	I am proficient implementing writing strategies and instruction.
Data Use & Analysis	I am proficient using and analyzing data.
Instruction Responsiveness	I am proficient adjusting instruction in response to data.

Responses to Survey Questions about Instructional Proficiency

Table 8 provides a summary of participants' responses to 12 questions rating their perceived proficiency using reading and math instructional strategies and best practices. Sixty-five percent (65%) reported they were *highly proficient* and *proficient* in teaching and scoring work samples in math and reading. Moreover, 84% of participants reported they were *highly proficient* and *proficient* in using the curriculum to differentiate instruction (in all content areas), 78% reported *highly proficient* and *proficient* using inquiry-based math instruction, and 77% reported they were *highly proficient* and *proficient* in facilitating mathematical discourse and questioning strategies in the classroom. Furthermore, 75% of participants reported feeling *highly proficient* and *proficient* in developing and using formative and summative assessments in all content areas, 69% reported they were *highly proficient* and *proficient* in effectively utilizing technology, and 63% reported feeling *highly proficient* and *proficient* in understanding the Common Core State Standards (ELA and math). In addition, 57% of the participants reported feeling *highly proficient* and *proficient* in utilizing Culturally Linguistically Diverse (CLD) instructional strategies, and 95% reported they were *highly proficient* and *proficient* in identifying clear learning goals for themselves and students. Eighty-one (81%) percent

Table 8.

Teacher Responses to Survey Questions Rating Their Proficiency with Instructional Strategies and Teaching Skills

Survey Question	Highly Proficient		Proficient		Limited Proficiency		Do not Teach in Area	
	N	%	*N*	%	*N*	%	*N*	%
M & R Work Samples	22	12	93	53	37	21	24	14
Differentiated Instruction	29	16	119	68	19	11	9	5
M Inquiry-based	30	17	108	61	18	10	20	11
M Facilitation	35	20	100	57	21	12	20	11
M Assessment	25	14	107	61	30	17	14	8
Use of Technology	46	26	75	43	49	28	6	3
Common Core	23	20	112	43	49	28	6	3
CLD	11	6	89	51	62	35	14	8
earning Goals	59	34	107	61	4	2	6	3
Writing Strategies	45	26	97	55	22	12	12	7
Data Use & Analysis	44	25	107	61	19	11	6	3
Instruction Response	49	28	112	64	10	6	5	3

reported feeling *highly proficient* and *proficient* in implementing writing strategies and instruction, 86% reported they were *highly proficient* and *proficient* in using and analyzing data, and 92% reported feeling *highly proficient* and *proficient* in adjusting instruction in response to data.

Responses to Survey Questions about Collaboration

Table 9 provides a summary of the participants' responses to four questions addressing their perceived interest in and willingness to collaborate with colleagues. Overall, the participants rated themselves as moderately interested in collaborating with colleagues to score work math and writing samples, with 36% of the participants reporting being *somewhat interested* in collaborative opportunities, and 46% reporting having *no interest* at all. Moreover, 34% of the participants reported being *somewhat interested* in working with a team to develop extensions within the math and reading core, while 48% of the participants reported *no interest* at all. Interestingly, only 18% of the participants reported a *high level of interest* in scoring math and writing work samples and developing extensions to the reading and math core programs.

Furthermore, 76% of participants reported having met on a *daily*, *weekly* or *monthly basis* to collaborate with colleagues to review student learning following instruction and to plan adjustments to future

instruction in response to results. Twenty-four percent (24%) of the participants reported having *not at all* met or collaborated with colleagues to review student learning following instruction and to plan adjustments to future instruction in response to those results

Table 9.

Responses to Survey Questions about Collaboration

Survey Question	Very Interested		Somewhat Interested		Not Interested			
	N	%	*N*	%	*N*	%		
Collaborate to score math and writing work samples	31	18	64	36	81	46		
Work in teams to develop math and reading core extensions	32	18	60	34	84	48		
	On a Daily Basis		On a Weekly Basis		On a Monthly Basis		Not at All	
	N	%	*N*	%	*N*	%	*N*	%
Collaborate with colleagues to review student learning, and plan future instruction in response to results	9	5	79	45	46	26	42	24
Collaborate with colleagues to design and plan lessons	6	3	64	36	68	39	38	22

Responses to Survey Questions about IIPM and ELL/CLD Data Team Process

Table 10 provides a summary of participants' responses to six questions addressing their understanding of the Instruction Intervention and Progress Monitoring (IIPM) process to support students with English Language Learner/Culturally Linguistically Diverse (ELL/CLD) needs as well as students in general. Overall, 67% of the participants reported an understanding of the IIPM process *to a great* or *to some extent* when reviewing the needs of ELL/CLD students. However, 32% of the participants reported *to a little extent* or *not at all* an understanding of the IIPM process when reviewing the needs of ELL/CLD students.

Furthermore, 71% of the participants reported feeling prepared to use instructional strategies that support language acquisition to meet the needs of Tier I and Tier II students *to a great* or *to some extent*, while only 23% of the participants reported feeling *to a little extent* or *not at all* prepared to use instructional strategies that support language acquisition to meet the needs of Tier I and Tier II students.

Seventy-eight percent (78%) of participants reported that during Tier I and II reading instruction, they were meeting the needs of their students scoring below the 20th percentile on the easyCBM benchmark assessment *to a great* or *to some extent*.

Conversely, only 4% of the participants reported *to a little extent* or *not at all* being able to meet the needs of their students scoring below the 20th percentile on the easyCBM benchmark assessment. In addition, 73% of participants reported that during Tier I and II reading instruction, they were meeting the needs of their students scoring above the 90th percentile on the easyCBM benchmark assessment *to a great* or *to some extent*, while only 6% of the participants reported that they were meeting the needs of their students scoring above the 90th percentile on the easyCBM benchmark assessment *to a little extent* or *not at all*.

Also, 63% of the participants reported that during Tier I and II reading instruction, they meet the needs of their students with ELL/CLD needs to *a great* or *some extent*, while 10% of the participants reported doing so *to a little extent* or *not at all*. Lastly, 94% of the participants reported feeling prepared to use strategies during vocabulary and comprehension instruction that supported the needs of all their students *to a great* or *some extent*, while only 3% reported *to a little extent* or *not at all* feeling prepared to use these strategies to support the needs of all their students. Although not shown in Table 10, about 3% of participants reported that they do not teach reading.

Table 10.

Responses to Survey Questions Rating Understanding of the IIPM Process to Support Students' Needs Using Instructional Strategies

	To a Great Extent		To Some Extent		To a Small Extent		Not at All	
	N	%	*N*	%	*N*	%	*N*	%
Understanding IIPM process	39	22	80	45	37	21	20	11
Supporting language acquisition	47	27	77	44	29	16	13	7
Meeting students needs below 20th percentile	63	36	74	42	7	4	0	0
Meeting students needs above 90th percentile	71	40	58	33	8	5	2	1
Meeting ELL/CLD students needs	28	16	83	47	15	9	1	1
Meeting vocabulary and comprehension needs of all students	102	58	64	36	1	1	4	2

Correlation Analyses

To explore the relations between teachers' self-reported sense of efficacy and their level of participation in professional development, I ran correlations between each of the questions related to teachers' efficacy teaching math (See Table 12), their efficacy teaching reading

(See Table 14), and their participation in PD as measured in teacher collaboration (See Table 16). The five questions related to efficacy teaching math (Table 12) were moderately positively correlated, ranging from .54 - .77.

Table 11 shows abbreviations for survey items related to Table 12.

Table 11.

Abbreviations for Survey Items Related to Math Efficacy

Abbreviation	*Survey Item*
M Comfort	Rate your comfort level in teaching the district's Comprehensive K-5 math program.
M Effective	Based upon my students' conceptual understanding of mathematics, I am effective in teaching math
M 90th Percentile	I am proficient using the district's adopted math program to differentiate instruction to meet the needs of my students performing above the 90th percentile.
M 20th Percentile	I am proficient using the district's adopted math program to differentiate instruction to meet the needs of my students performing below the 20th percentile.
M Inquiry	Based upon my students' conceptual understanding of mathematics, I am effective in teaching the district's inquiry-based math program.
M PD Participation	During the 2011-2012 school year there were several district provided math professional development opportunities. Did this year's professional development opportunities increase your understanding in the areas of assessment, learning goals, Common Core State Standards, and increased rigor/expectations in the area of math?

Table 12.

Correlations Between Survey Questions Related to Efficacy Teaching Math (n = 176)

	Comfort level	Effectiveness	90th percentile	20th percentile	Inquiry-based
Comfort level	--	.77*	.64*	.69*	.65*
Effectiveness		--	.64*	.68*	.67*
90th percentile			--	.59*	.54*
20th percentile				--	.54*

Note. * = $p < .001$.

Table 13 shows abbreviations for survey items related to Table 14.

Table 13.

Abbreviations for Survey Items Related to Reading Efficacy

Abbreviation	*Survey Item*
R 20th Percentile	During Tier I and II reading instruction, I am meeting the needs of my students scoring below the 20th percentile on the easyCBM benchmark assessment.
R 90th Percentile	During Tier I and II reading instruction, I am meeting the needs of my students scoring above the 90th percentile on the easyCBM benchmark assessment.
R ELL/CLD	During Tier I and II reading instruction, I meet the needs of my students with ELL/CLD needs.
R All Students	I am prepared to use instructional vocabulary and comprehension strategies that support the needs of all my students.

The four questions related to efficacy teaching reading (Table 14) were moderately to strongly positively correlated, ranging from .46 - .88.

Based on the results of the correlation analyses, the responses to the five questions related to efficacy teaching math (Table 12) were combined into a composite math efficacy score, and the four correlated questions related to efficacy teaching reading (Table 14) were combined into a single reading efficacy score.

Table 14.

Correlations Between Survey Questions Related to Efficacy Teaching Reading

	20th percentile	90th percentile	ELL/CLD needs	All students' needs
20th percentile	--	.84** 157	.88** 147	.48** 165
90th percentile		--	.80** 145	.46** 161
ELL/CLD needs			--	.47** 150

Note. ** = Correlation is significant at the 0.01 level (two-tailed).

The correlation between the composite math teaching efficacy score and the composite reading teaching efficacy score was significant (*r* =

.53). I thus combined math efficacy and reading efficacy into a single efficacy score for use in later analyses.

The relations between the five questions related to collaboration (Table 16) was less clear than the relations between the questions related to efficacy teaching math (Table 12) and the questions related to efficacy teaching reading (Table 14).

Table 15 shows abbreviations for survey items related to Table 16.

Table 15.

Abbreviations for Survey Items Related to Collaboration

Abbreviation	*Survey Item*
Work samples	I would be interested in collaborative opportunities to score math and writing work samples.
Extensions	I would be interested in working with a team to develop extensions within math and reading scores.
Lesson plans	I meet and collaborate with my colleagues to design and plan lessons.
Future plans	I meet and collaborate with my colleagues to review student learning following instruction and then plan adjustments to future instruction in response to those results.
Data analysis	I bring other formative data (weekly assessments, work samples, unit assessments, running records, etc.) besides easyCBM, during Data/IIPM Team meeting about student progress to discuss and analyze.

Table 16.

Correlations Between Survey Questions Related to Collaboration (n = 176)

	Work samples	Extensions	Lesson plans	Future plans	Data analysis
Work samples	--	.58**	.03* .68	.10* .18	.02 .75
Extensions		--	.04 .64	-.01 .83	.14 .07
Lesson plans			--	.53**	.08 .32
Data analysis				--	.11 .14

Note. * = Correlation is significant at the 0.05 level (2-tailed). ** = Correlation is significant at the 0.01 level (2-tailed).

Based on these results, Table 17 provides responses from the four questions with statistically significant correlation that were combined into a single collaboration score for use in later analysis.

The correlations between all four computed variables were all statistically significant, ranging from .19 - .89 (See Table 17).

Table 17.

Correlations Between Efficacy Teaching Math, Efficacy Teaching Reading, Efficacy, and Collaboration (n = 133)

	Efficacy teaching math	Efficacy teaching reading	Efficacy	Collaboration
Efficacy teaching math	--	.53*	.87*	.23* .003 156
Efficacy teaching reading		--	.89*	.19* .024 142
Efficacy			--	.23* .007 133

Note. ** = Correlation is significant at the 0.01 level (2-tailed).* = $p > .001$

Seven major categories emerged from the study based on qualitative analyses that have not been described (data use efficacy, math-teaching efficacy, minutes devoted to teaching math, reading-teaching efficacy, proficiency, professional development, and teacher characteristics). To explore the relations between these categories, I ran correlations between each of the questions related to data use efficacy, teachers' efficacy teaching math (See Table 12), minutes devoted to teaching math, their efficacy teaching reading (See Table 14), proficiency, professional development, and teacher characteristics. To create a data use variable, I computed the following variables

(proficiency in using data to analyze, data team process, data implementation, and IIPM process) into the variable "data use" to explore the relation between the different survey questions listed above, and to compute them into a single proficiency score.

Table18 provides a summary of the Pearson correlations that emerged from the findings on the seven major categories or themes

Table 18.

Correlations Between Data-use, Math Efficacy, Math Minutes, Reading Efficacy, Proficiency, Professional Development and Teacher Characteristics (n = 176)

	Data-use efficacy	Math efficacy	Math mins.	Rdg. efficacy	Proficiency level	Prof. dev.	Teacher characteristics
Data-use efficacy	--	.25** .001	.17* .020	.07 .365	.12 .102	.17* .025	-.18* .018
Math efficacy		--	.54** <.001	-.09 .229	-.01 .880	.29** <.001	-.31** <.001
Math minutes			--	-.15* .048	-.10 .194	.40** <.001	-.35 <.001
Reading efficacy				--	.89** <.001	-.24** .002	-.02 .800
Proficiency level					--	-.19* .013	-.08 .286
Prof. dev.						--	-.17* .024

Note. * = Correlation is significant at the 0.05 level (2-tailed). ** = Correlation is significant at the 0.01 level (2-tailed).

combined and identified in the data (data use efficacy, math-teaching efficacy, minutes devoted to teaching math, reading-teaching efficacy, teachers' self-reported proficiency, professional development, and teacher characteristics). The correlations between the seven computed variables were statistically significant, ranging from -.35 - .89 (See Table 18).

Cross-Tabulation and Chi-Square Analyses

To investigate whether teachers who reported currently collaborating with other teachers and those who reported not currently collaborating with other teachers differ on their self-reported efficacy score, cross-tabulation and chi square analyses were conducted. (Pearson chi-square is appropriate because I am examining nominal data.) Assumptions were checked and were met. Table 19 shows the Pearson chi-square results and indicates that teachers who reported currently collaborating with other teachers are not significantly different than those who reported not currently collaborating with other teachers on whether or not they are efficacious and (X^2 = 1.996, *df* = 2, *N* = 133, *p* = .369).

Cramer's V, which indicates the strength of the association between the two variables, is .123.

Table 19.

Chi-square Analysis of High and Low Efficacy Scores Among Currently Collaborative Teachers

	Current Collaboration		
Variables	*N*	No collaboration	Collaboration
Teacher efficacy			
Low	10	6	4
Some	22	8	14
High	101	38	63
Totals	133	53	81

Note. $X^2 = 1.996$, $p = .369$

Chi-square analyses were also conducted to investigate whether teachers who reported they were likely to collaborate in the future with other teachers and those who reported they were not likely to collaborate in the future with other teachers differ on their self-reported efficacy rating. Assumptions were checked and were met. Table 20 shows the Pearson chi-square results and indicates that teachers who reported they were likely to collaborate with other teachers in the future are not significantly different than those who reported they were not likely to collaborate with other teachers in the future on whether or not they are efficacious ($X^2 = 5.222$, $df = 2$, $N = 133$, $p = .073$). Cramer's V, which indicates the strength of the association between the two variables, is .198.

Table 20.

Chi-square Analysis of High and Low Efficacy Scores Among Future Collaborative Teachers

		Future Collaboration	
Variables	*N*	No collaboration	Collaboration
Teacher efficacy			
Low	10	7	3
Some	22	10	12
High	101	35	66
Totals	133	52	81

Note. $X^2 = 5.222$, $p = .073$

Chi square analyses were also conducted to investigate whether teachers who reported bringing formative data (IIPM data) to data team meetings and those who reported not bringing formative data (IIPM data) to data team meetings differ on their self-reported efficacy ratings. Assumptions were checked and were met. Table 21 shows the Pearson chi-square results and indicates that teachers who reported bringing formative data (IIPM data) to team meetings are significantly different than those who reported not bringing formative data (IIPM data) to team meetings on whether or not they are efficacious ($X^2 = 20.498$, $df = 2$, $N = 105$, $p > .001$). Cramer's V, which indicates the strength of the association between the two variables, is .442.

Table 21.

Chi-square Analysis of High and Low Efficacy Scores Among Teachers Bringing IIPM Data

		IIPM Data	
Variables	*N*	Not bring	Bring
Teacher efficacy			
Low	10	3	7
Some	19	4	15
High	76	0	76
Totals	105	7	98

Note. $X^2 = 20.498$, $p < .001$

To investigate whether teachers who reported using formative data (IIPM data) to inform future instructional strategies and those who reported not using formative data (IIPM data) to inform future instructional strategies differ on their self-reported efficacy rating, a chi square analysis was conducted. Assumptions were checked and were met. Table 22 shows the Pearson chi-square results and indicates that teachers who reported using formative data (IIPM data) to inform future instructional strategies are significantly different than those who reported not using formative data (IIPM data) to inform future instructional strategies on whether or not they are efficacious (X^2 =

17.845, $df = 2$, $N = 97$, $p > .001$). Cramer's V, which indicates the strength of the association between the two variables, is .429.

Table 22.

Chi-square Analysis of High and Low Efficacy Scores Among Teachers Using IIPM Data to Discuss Future Instructional Strategies

		IIPM Data Future Discussion	
Variables	*N*	Not using	Using
Teacher efficacy			
Low	10	3	7
Some	20	4	16
High	67	0	67
Totals	97	7	90

Note. $X^2 = 17.845$, $p > .001$

Table 23 shows abbreviations of survey items used to create composite variables in the analyses.

Table 23.

Composite Survey Questions

Composite Variable	*Survey Questions Used to Compute*
Data-use efficacy	#23 profdataanal, #24 dataimplement, #25 IIPMprocess, #27 datateamproc
Math efficacy	#4 comfort (math comfort level), #5 effectivmath, #6 profmath90th, #7 profmathbelow20th
Math minutes daily	#8 mathprogeffectiv, #11 dailymathmins
Reading efficacy	#13 rdgbelow20th, #14 rdgabove90th, #15 rdgCLDELLneeds
Proficiency level	#6 profmath90th, #7 profmath20th, #13 rdgbelow20th, #14 rdgabove90th, #18a proflvlscoresamples, #18b profdiffinst, #18c profinquirybased, #18d profmathfacilitat, #18e profmathassess, #18f proftech, #18g profcommoncore, #18h profCLD, #18i proflrngoals, #18j profwritstrat, #18k profdataanalys, #18l profadjustinstruction
Professional development	#9a profdeveffectiv, #9b othermathPD, #19 collabsamples, #20 collabteamcores, #21 collablessons, 19-21 profdeveffectiv, #28 sciPDcollabworksamples, #29 sciPDstipworkshops
Teacher characteristics	#1 teach, #2 grade, #3 years

Table 23. Continued.

Composite Survey Questions

SuperPDcollab	#19 collabsamples, #20 collabteamcores, #21 collablessons, #22 collabreviews
SuperDataTeamProc	#23 datateamproc, # 24 dataimplement, #25 IIPMproc, #26 langacquisition
SuperEfficacy (includes math + rdg)	#4 comfort, #5 effectivmath, #6 profmath90th, #7 profmathbelow20th, #13 rdgbelow20th, #14 rdgabove90th, #15 rdgCLDELLneeds, #16 inststrategies (instructional strategies)
SuperME (super math efficacy)(includes teacher characteristics, #1-4 and math proficiency, #6-8, 11)	#1 teach, #2 grade, #3 years, #4 comfort, #5 effectivmath, #6 profmath90th, #7 profmathbelow20th, #8 mathprogeffectiv, #11 dailymathmins

CHAPTER IV

DISCUSSION

The purpose of this final chapter is to (a) summarize the key findings of the study, (b) discuss threats to validity and limitations, (c) interpret the findings, and d) explore possible implications of the findings for current educators and future research.

Summary of Findings

Seven major categories (data-use efficacy, math-teaching efficacy, minutes devoted to teaching math, reading-teaching efficacy, proficiency, professional development, and teacher characteristics) emerged from the study and are discussed.

Correlational analyses revealed statistically significant relations between teachers' use of IIPM data and other variables. In addition, the findings suggest a moderate positive relation between teachers' comfort level teaching math and their self-perceived effectiveness teaching math. Moreover, the correlation between teachers' self-reported efficacy teaching math and the composite collaboration variables were significantly related to the number of minutes they taught math daily. Although a moderate correlation was found between math efficacy and

reading efficacy, it still points to a potentially important relation. Even though significant correlations were found between teachers' proficiency level (teaching skills and self-efficacy) and efficacy teaching reading, a moderate correlation was found for teachers reporting they felt to a great extent proficient in meeting the needs of students in reading above the 90th percentile. To the contrary, weak correlation was found between teacher efficacy, professional development collaboration, teaching math, and teaching reading. There seemed to be weak relations between where teachers teach, the number of years they taught, and the grade levels they taught. Furthermore, there appeared to be inverse relations between teacher characteristics and every other major category in the study (data-use efficacy, math efficacy, math minutes, reading efficacy, proficiency and professional development).

Threats to Validity and Limitations

This teacher efficacy study took place in a single school district, using a convenience sample of extant survey data from teachers based on the results of a 29-item questionnaire. Because the sampling procedure decreases the generalizability of findings, this study may not generalize to other areas of professional development outside the

implementation of the IIPM model in the school district in which the study was conducted.

In this teacher efficacy study, the findings could be subject to other interpretations. Although the intent of this study was to explore the relation between teacher efficacy (their sense of capacity to affect change) and teachers' participation in professional development, further studies may be needed to evaluate the effectiveness of the district's overall professional development approach. Such studies, in conjunction with the current one, could show a potential relation between documented levels of teacher efficacy, the quality of professional development, and teachers' levels of participation in that professional development. Such analysis, however, is beyond the scope of this current study.

A significant limitation in the current study is the use of an extant data set based on a survey with instrumentation flaws due in large part to its not being designed to address the specific questions of interest**.** The generalizability of the findings are also limited by sampling issues; because the sample included only 176 self-selected participants from a single school district, generalizations of the findings to other contexts should be avoided.

Design flaws in the survey instrument limited the study. The survey did not address both math and language arts content areas equally, with more questions focused on math than on reading. For example, teachers were asked to rate their comfort level teaching the district's math program but the same question was not asked of reading. Whether the designers purposefully designed the instrument this way is unclear, but the ramifications for this study must be mentioned, as they limited the information that could be studied. Additionally, the survey did not fully address efficacy. I had hoped to be able to analyze this variable more robustly, but the designers of the survey did not include sufficient questions for the researcher to focus on this key area well.

One troublesome aspect of the current study was the fact that there were not more corroborative data to support the connection between proficiency and efficacy. Even though the data indicate there is some connection between teachers' self-report of higher level of efficacy and their self-reported level of proficiency, the extant data used in this study contained limited questions to support this particular finding. Future research with data gathered in a more robust design is called for.

The survey was e-mailed to approximately 500 K-5 teachers and other school support staff, but only 176 responded, a response rate of 35%. There is no way to evaluate the representativeness of responders,

as this was not part of the data collection plan. A further confound is that although the survey was sent to approximately 500 teachers and support staff, the district reported only 210 had directly participated in professional development activities. The survey did not include any way to identify whether the respondents had participated in structured professional development, making it impossible to use this potentially valuable piece of information as a grouping variable.

The study design, using extant data from a self-report survey, did not capture data that would make such a causal claim possible. Therefore, one is left to surmise as to how these variables are related, and what the causes of these relations may be.

Interpretations

Seven major categories (data-use efficacy, math-teaching efficacy, minutes devoted to teaching math, reading-teaching efficacy, proficiency, professional development, and teacher characteristics) emerged from the study and are interpreted and discussed.

Data use and efficacy. Correlational analyses revealed statistically significant relations between teachers' use of the Instruction Intervention and Progress Monitoring (IIPM) data to inform instruction and other variables. In particular, the findings point to a strong

correlation between teachers' self-reported use of data and their understanding of the IIPM process to address the needs of students identified as English Language Learner/Culturally Linguistically Diverse (ELL/CLD) scoring below the 20th percentile as well as their ability to meet the needs of non-ELL students. This correlation supports the idea previously identified by Miles, Elkholm, and Vandenberghe (1987) that the most common way to address improvement efforts in schools is to connect goals and results, and thereby improve the quality of the works to achieve the desired results. Even though there seemed to be a significant correlation between teachers' self-reported use of data to inform instruction and their self-reported efficacy to teach math, the data suggest that the more efficacious teachers felt, the more likely they were to use data as well as to indicate their intention for future use of data.

Although there is insufficient information in this study to conclude that higher efficacy levels is related to the district's professional development activities, those who had most adopted the data-using model (IIPM) might also report higher levels of efficacy. Similarly, previous researchers (Bastche et al., 2006; Gresham et al., 2000; NJCLD, 2010) have observed that teachers who are the most effective at improving student academic outcomes are those who continuously use data to inform their instruction. These teachers monitor the progress of

students to ensure that the instruction (and the way it is delivered) is meeting the needs of all students.

Math teaching efficacy. The findings suggest a moderate positive relation between teachers' comfort level teaching math and their self-perceived effectiveness teaching math. Teachers' responses to the survey revealed that 82% of the participants felt confident teaching math using the district's math adopted curriculum as opposed to 17% who felt not as confident. The relation between math efficacy and math proficiency is important to point out because a previous study by Nathan and Koedinger (2000), which examined algebraic problem-solving and social cognitive development of researchers and teachers, found similar connections between the importance of teacher beliefs and their professional activities. Even though this study design does not allow a definitive statement about the potential causal connection between teachers' level of comfort delivering the district's math program and their understanding of the math strategies, these variables do appear to be related. This particular notion is further supported by an earlier study by Kronberg (1999), which found that teachers' need for continual integration of beliefs and practice is at the core of the relationship between teacher efficacy and teaching and learning. The same results, however, cannot be extended to teachers' sense of efficacy in providing

reading instruction and teachers' self-reported proficiency with the reading content because the district survey did not include a question for reading that allowed examination of these relationships.

A previous study by Geijsel, Sleegers, Stoel and Kruger (2009) found that, on average, teachers with strong beliefs in their own capabilities (i.e., in their sense of efficacy) were more likely to be involved in professional learning activities including collaborating with others, and sharing of student and instruction data. Their study supports the findings of this study, which showed a moderate to strong correlation between teacher efficacy and their proficiency in teaching math, reading, and using instructional strategies to teach skills.

Minutes devoted to teaching math. Teachers' self-reported efficacy teaching math and the composite collaboration variables were significantly related to the number of minutes they taught math daily. Compared to Guskey's (1987) meta-analysis of context variables that affect measures of teacher efficacy, the findings suggest a possible positive relation between the amount of time teachers report spending teaching math daily and their self-reported efficacy in teaching math. Although Guskey's findings may be useful for understanding the variables that "influence" teacher efficacy, my study found that math-

teaching efficacy and self-reported time spend teaching math appear to be related.

This finding is further supported by the Brookings Institution (2007) study, which reported that an additional ten minutes of math instruction daily yields better student math scores on standardized math assessments, suggesting that time spent on daily math instruction improves math skills. Moreover, Guskey (1997) further suggested that with demonstrated improvement in math performance, teachers' efficacy might be expected to improve as well. Interestingly, although identifying clear goals for students and teachers was a significant predictor of reading-teaching efficacy, it did not predict math-teaching efficacy.

Reading teaching efficacy. Although a negative moderate correlation was found between reading efficacy and minutes devoted to teaching math, it still points to a potentially important relation. Similarly, Guskey (1987) reported that perception of efficacy 'differs' depending upon the nature of the student outcome. In Guskey's study of highly experienced teachers, they expressed significantly greater personal efficacy when the performance outcome was positive (R-positive) than when it was negative (R-negative). The data in my current study were insufficient to enable a similar comparison. Even though teachers' self-reported proficiency in identifying clear learning goals for themselves and

their students was a significant predictor of their reading teaching efficacy, this is an area where future research could be useful for planning professional development. Nonetheless, the correlation between efficacy teaching math, efficacy teaching reading, efficacy (overall) and collaboration were statistically significant.

Proficiency. Significant correlations were found between teachers' proficiency level (self-reported teaching skills and self-efficacy) and reading teaching efficacy. However, 40% of teachers reporting they felt *to a great extent* proficient in meeting the needs of students in reading above the 90th percentile while 36% of teachers felt *proficient* meeting the needs of students reading below the 20th percentile. This finding, that teachers feel less proficient meeting the needs of their struggling students below the 20th percentile, is of concern especially if the crux of the IIPM model is to help support the needs of students in Tier II and III.

The study by Geijsel et al.(2009) on the effect of teacher psychological, school organizational, and leadership factors on teachers' professional learning supports the underpinnings of this study, in that 'efficacy' reveals teachers' beliefs or disposition about their level of participation and engagement in professional development learning activities. More importantly, teachers' sense of self-efficacy and internalization of school goals into personal goals had strong effects on

teachers' participation in the professional learning activities (Geijsel et al., 2009).

This speaks to the efficacy-proficiency dynamics with which the findings of my study reported. This study showed 75.5% of respondents rated their proficiency in teaching reading *to some* or *to a great extent* as opposed to 17.5% who reported *to a small extent*, *not at all* or *do not teach reading*. Furthermore, on average, 78.6% of teachers rated their proficiency in using instructional strategies and teaching skills as *highly proficient* or *proficient* as opposed to 21.4% who were not.

In all, Showers & Joyce's (1996), reported teachers who work collaboratively not only improve their skills, but also their attitudes about their profession and their abilities to make an impact on schools and to support the needs of students. My study showed that there was a high correlation between the reading proficiency of teachers and their proficiency level. However, my study did not find significant correlation between teachers' proficiency level and data use, math efficacy, daily math minutes, and teacher characteristics. There was an inverse correlation with professional development.

Professional development. The purpose of this study was to examine the relation between teachers' sense of efficacy and level of collaboration as a by-product of several years of professional

development on the use of the IIPM model to support teaching and learning at the district. This notion was based on Showers and Joyce's (1996) important discovery that teachers who work together and learn from one another are more likely to practice new learned skills and apply new strategies more frequently than teachers who work alone and in isolation. To the contrary, the current study found weak or small correlations between professional development collaboration and efficacy teaching math, efficacy teaching reading, and overall efficacy.

Geijsel et al. (2009) found strong support for the effects of teacher's sense of self-efficacy on their professional development learning activities. They found, on average, that teachers with strong beliefs in their own capabilities were more involved in learning activities. The findings of this study, though, were not significantly different for teachers who reported currently collaborating with other teachers than those who reported not currently collaborating with other teachers on whether they were efficacious. In this study, collaboration among teachers as an element of professional development could have been affected by other factors such as time, resource, interest, personality, experience, cultural background, or other school activities and initiatives that may have had higher priorities the data did not capture.

Nonetheless, teacher collaboration may not be a strong indicator of teacher efficacy or vice versa.

Teacher characteristics. There seemed to be weak relations between where teachers taught, the number of years they taught, and the grade levels they taught. In addition, there appeared to be negative relations between these teacher characteristics and every other major category in the study (data-use efficacy, math efficacy, math minutes, reading efficacy, proficiency and professional development). It might be, for example, that teachers with more teaching experience may not be as inclined to use data to inform instruction – or as effective in doing so – given that this may require a shift in their "traditional" teaching practices.

Conclusions

This study examined teacher efficacy within the context of professional development. In particular, this study sought to reveal the relations, if any, between teacher efficacy and teacher participation, including teacher use of (IIPM) data, teacher self-reported proficiency teaching math and reading, as well as instructional strategies and teaching skills. Moreover, this study was conducted with the hope that the district's professional development activities over the past year had

an effect on teachers' sense of efficacy, and that greater teacher-efficacy would promote student growth and improved district scores on math and reading assessments. The bottom line is that there was little evidence to suggest significant relations between teacher efficacy and participation. More importantly, the study did not conclusively provide evidence that strong relations existed between teacher efficacy and professional development. There was, however, some evidence to suggest a relation between teacher efficacy and the use of data, as well as a relation between teacher efficacy and collaboration with other teachers.

Perhaps the most significant finding is not actually related to the topic under investigation, but instead related to the importance of articulating a clear purpose when (a) planning, designing and implementing professional development, and (b) gathering data to inform educational policies and district initiatives. In essence, improving practitioners' and researchers' understanding of teachers' views of the development of students' knowledge also strengthens their understanding of the complexities of teaching, which may ultimately enhance programs for teacher preparation and professional development (Borko & Shavelson, 1990).

This study has been a painstaking exercise in frustration especially with the limitation of the survey instrument. Nevertheless, the key

findings for myself as a practitioner is that (a) I am more aware of my own limitations in the use of data, and (b) I am more cautious about adopting "instructional best practices" without better understanding their intent, purpose and design.

In this study, efficacy is treated synonymously with one's capacity for change, both internally and externally. Rotter's (1966) locus of control theory is significant in conceptualizing 'efficacy' as the extent to which teachers believe they have control over their environment. When applied in the school environment context, teachers with high self-efficacy are theorized to have greater capacity for change, to be more confident in their influence over others, especially students and teachers, as well as their own teaching ability. It is precisely this capacity for change that has impact me the most, both as researcher and as practitioner.

As a school administrator, one of my primary responsibilities is to administer district policies, manage school programs, and implement procedures in a manner that yields the greatest benefit for students and teachers. A key takeaway for me is that school administrators often place a heavy emphasis on research findings and data, but not enough attention on the scope, validity and reliability of survey instruments. In essence, effective researchers need to pay close attention to the

instrumentation and questions' designs, as well as sample selection. Additionally, effective school administrators need to base decisions on accurate and useful data. More importantly, administrators need to consider the teachers' efficacy levels, skill set, and their level of willingness to participate in the professional development activities of schools before initiating such activity. I admit my own preconceived notions about what the study might be able to reveal may have tainted my approach. However, after analyzing the data and synthesizing the results, I conclude that the study's findings are only as useful as the validity and reliability of the instrumentation used.

Findings from the study may contribute to the field by providing recommendations for improving professional development to support teachers in an intentional, organized and systemic manner. Findings may further be of use to the district in which the study was conducted, in particular as information about the differing levels of teacher efficacy and their relation to participation in district-sponsored professional development; this may offer insights to schools by which to better organize their professional development efforts in order to better address needs identified through this study.

However, as I reflect on this journey, I conclude that "efficacy" is about individual will power, the will to touch the lives of others as well as

the will to change policies, programs, and educational outcomes so that *all* students benefit. In all, my hope is that I am more efficacious in my role as educational leader, and that I am intentional and purposeful in assessing my capacity for affecting change in the lives of my students and teachers.

APPENDIX

ELEMENTARY TEACHER SURVEY

Teacher Efficacy. (Efficacy survey developed in part and adapted from Wolfolk and Hoy (1990) and Geijsel et al. (2009)

A number of statements about organizations, people, and teaching are presented below. The purpose is to gather information regarding the actual attitudes of educators concerning these statements. There are no correct or incorrect answers. We are interested only in your frank opinions. Your responses will remain confidential.

INSTRUCTIONS: Please indicate your personal opinion about each statement by selecting the appropriate response.

Questions marked with an asterisk (*) are mandatory.

General

1. * Where do you teach? (The names of schools have been changed)
   - o School A
   - o School B
   - o School C
   - o School D
   - o School E
   - o School F
   - o School G

- School H
- School I
- School J
- School I
- School K
- School L
- School M
- School N
- School O
- School P
- School Q
- School R
- School S
- School T

2. * What grade do you teach? (Choose one)
    - K
    - 1
    - 2
    - 3
    - 4
    - 5

- SPED
- Title I
- TLC/ESC
- Other, please specify

3. * How many years have you been teaching at this grade level? (Within the ranges or areas; K-2, 3-5, or other-Title, SPED, Specialist, etc.)

- 0-3 years
- 4-10 years
- 11 or more years

Math

4. * Rate your comfort level in teaching with the district's Comprehensive K-5 Math Program.

- Confident
- Building Confidence
- Struggling
- NA- I do not teach math

5. * Based upon my students' conceptual understanding of mathematics, I am effective in teaching the district's inquiry based math program.

- Strongly Agree
- Agree
- Neutral

- Disagree
- NA- I do not teach math

6. * I am proficient using the district's adopted math program to differentiate instruction to meet the needs of my students performing above the 90th percentile.

- Strongly Agree
- Agree
- Neutral
- Disagree
- NA- I do not teach math

7. * I am proficient using the district's adopted math program to differentiate instruction to meet the needs of my students below the 20th percentile.

- Strongly Agree
- Agree
- Neutral
- Disagree
- NA- I do not teach math

8. * For the students that have been included in tier III math intervention, how effective has it been in helping your students succeed?

- To a Great Extent

- To Some Extent
- Not at All
- NA
- Other, please specify

9. * During the 2011-2012 school year there were several district provided math professional development opportunities. Did this year's professional development opportunities increase your understanding in the areas of assessment, learning goals, Common Core State Standards, and increased rigor/expectations in the area of math?

- To a Great Extent
- To Some Extent
- To a Small Extent
- Not At All
- Other, please specify

10. * To what extent do you value the importance of teaching the components below (Check all that apply)

Highly Valuable Not Valuable N/A

- Routines 4 3 2 1 N/A
- Vocabulary 4 3 2 1 N/A
- Assessment 4 3 2 1 N/A
- Investigations Activity 4 3 2 1 N/A

- Investigations Discussion 4 3 2 1 N/A
- Investigations Workshop 4 3 2 1 N/A
- enVision Interactive Learning 4 3 2 1 N/A
- enVision Visual Learning Bridge/animation 4 3 2 1 N/A
- enVision Centers 4 3 2 1 N/A

11. * I teach math daily for: _____ minutes
    - More than 70 minutes (60 daily lesson + 10 routine), more than 30 to 45 for kinder
    - 70 minutes (60 daily lesson +10 routine), 30 to 45 for kinder
    - Less than 70 minutes, less than 30 minutes for kinder
    - NA- I do not teach math
12. Open comments regarding math

Reading

13. * During tier I and II reading instruction, I am meeting the needs of my students scoring below the 20th percentile on the easyCBM benchmark assessment.
    - To a Great Extent
    - To Some Extent
    - To a Small Extent
    - Not at All
    - NA- I do not teach reading

- Other, please specify

14. * During tier I and II reading instruction, I am meeting the needs of my students scoring above the 90th percentile on the easyCBM benchmark assessment.

- To a Great Extent
- To Some Extent
- To a Small Extent
- Not at All
- NA- I do not teach reading
- Other, please specify

15. * During tier I and II reading instruction, I am meeting the needs of my students with ELL/CLD needs.

- To a Great Extent
- To Some Extent
- To a Small Extent
- Not at All
- NA- I do not teach reading
- Other, please specify

16. * I am prepared to use instructional vocabulary and comprehension strategies that support the needs of all my students

- To a Great Extent

- To Some Extent
- To a Small Extent
- Not at All
- NA- I do not teach reading

17. Open comments regarding reading and language arts

Professional Development and Collaboration

18. * Please indicate your proficiency level in the below areas

4—Highly Proficient, can teach others, 3—Proficient, 2—Limited Proficiency, 1—NA- I don't teach this area

- Teaching & scoring work samples in math and writing 4 3 2 1
- Using the curriculum to differentiate instruction (all content areas) 4 3 2 1
- Inquiry based math instruction 4 3 2 1
- Facilitating mathematical discourse/questioning strategies in your classroom 4 3 2 1
- Develop and use of formative and summative assessments in all content areas 4 3 2 1
- Effectively utilizing technology 4 3 2 1
- Understanding Common Core State Standards (ELA and math) 4 3 2 1
- CLD instructional strategies 4 3 2 1

- Identifying clear learning goals for myself and students 4 3 2 1
- Implementing writing strategies & instruction 4 3 2 1
- Data analysis 4 3 2 1
- Adjusting instruction in response to data 4 3 2 1

19. * Would you be interested in collaborative opportunities to score math and writing work samples?

- Very interested
- Somewhat interested
- Not interested

20. * Would you be interested in working with a team to develop extensions within the math and reading core?

- Highly interested
- Somewhat interested
- Not interested

21. * I meet and collaborate with my colleagues to design and plan lessons

- On a daily basis
- On a weekly basis
- On a monthly basis
- Not at all

22. * I meet and collaborate with my colleagues to review student learning following instruction and then plan adjustments to future instruction in response to those results

- On a daily basis
- On a weekly basis
- On a monthly basis
- Not at all

Data Team Process

23. * During your Data/IIPM Team Meeting do you bring other formative data (i.e. weekly assessments, work samples, unit assessments, running records, etc.) besides easyCBM, to discuss and analyze when making decisions about student progress?

- Always
- Most of the Time
- Occasionally
- Not at All
- NA- I have not participated in any Data/IIPM Meetings

24. * When looking at student needs and data, are instructional strategies discussed as a team and implemented into your tier I and II instruction, even when tier III services are being provided?

- Always

- Occasionally
- Most of the Time
- Not at All
- NA-I have not participated in any Data/IIPM Team Meetings

25. * How well do you understand the difference between the IIPM process when reviewing the needs of a ELL/CLD (English Language Learner/Culturally Linguistically Diverse) student compared to students without ELL/CLD needs?

- To a Great Extent
- To Some Extent
- To a Small Extent
- Not at All

26. * I am prepared to use instructional strategies that support language acquisition to meet the needs of my ELL/CLD students in tiers I and II.

- To a Great Extent
- To Some Extent
- To a Small Extent
- Not at All
- Other, please specify

27. Open comments regarding the Data Team Process

Science

28. * I am interested in staff development for collecting and scoring scientific inquiry work samples for students in grades 3-5

- Interested
- Somewhat interested
- Not interested

29. * I would be interested in science content workshops for physical, life, or earth science for elementary teachers. Note: release time or stipend provided, college credit through the ESD available.

- Interested
- Somewhat interested
- Not interested

Items: (29 total items)

7 - self-efficacy (the beliefs about the ability of one's capabilities to produce effects)

6 - teacher efficacy (the belief that teachers are convinced they can influence how students learn)

4 - collaboration (professional learning community)

3 - changed practice (professional growth)

3 – open items

3 – professional development

3 - demographics (experience and characteristics)

Portions of the school district spring 2012 survey items were adapted from Femke P. Geijsel, Peter J. C. Sleegers, Reinoud D. Stoel, Meta L. Krüger (2009), and Woolfolk, A. E., & Hoy, W. K. (1990).

[From: The Effect of Teacher Psychological and School Organizational and Leadership Factors on Teachers' Professional Learning in Dutch Schools
Author(s): Femke P. Geijsel, Peter J. C. Sleegers, Reinoud D. Stoel, Meta L. Krüger
Reviewed work(s):Source: The Elementary School Journal, Vol. 109, No. 4 (March 2009), pp. 406-427. Published by: The University of Chicago Press
Stable URL: http://www.jstor.org/stable/10.1086/593940 .
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[From Woolfolk, A. E., & Hoy, W. K. (1990). Prospective teachers' sense of efficacy and beliefs about control. *Journal of Educational Psychology, 82*, 81-91. Originally based on the Teacher Efficacy Scale developed by S. Gibson & M. Dembo (1984). Teacher Efficacy: a construct validation. *Journal of Educational Psychology, 76*,
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