CALIFORNIA STATE UNIVERSITY, NORTH RIDGE

THE IMPLEMENTATION CONTEXT: TEACHERS’ IMPLEMENTATION OF
SKILLS LEARNED DURING PROFESSIONAL DEVELOPMENT

A Dissertation submitted in partial fulfillment of the requirements
For the Doctor of Education Degree in Educational Leadership

by

Erin Studer

May, 2012
The Dissertation of Erin Studer is approved:

______________________________________            _________________
Dr. James Astman, Ph.D.

______________________________________
Dr. Joyce Burstein, Ed.D.

______________________________________            _________________
Dr. Greg Knotts, Ph.D., Chair

California State University, Northridge
DEDICATION

To Anne and Kiera with much, much love.

In writing this dissertation I required a great deal of love, support, and encouragement. For all of this I wish to thank first and foremost my family. I thank my wife Anne for her patience, love, guidance, and support in all things including this dissertation. I thank my daughter, Kiera, for giving up many an evening with her daddy so that I could pursue this goal. I wish to thank my mom for all of her encouragement and for instilling in me a love of learning. And I wish to thank all of my family and friends (too numerous to list) for their unwavering support and encouragement over the years.

Thanks also to my dissertation chair Greg Knotts for his insight, advice, pep talks, and tough love. I would not have crossed the finish line without him. I also wish to thank the other dissertation committee members Joyce Burstein and Jim Astman for their helpful guidance and commitment to me through this process. I want to acknowledge the California State University, Northridge doctoral faculty. All of you deeply and generously engaged in preparing me for serious scholarly work, and I am grateful for the guidance and the education.

Finally, I wish to thank all of my colleagues at CSU-Northridge and the schools at which I have worked over the past 14 years since arriving in California. Again and again, colleagues, administrators, and mentors gave me the opportunities to develop as a professional and equipped me to achieve this goal of obtaining a doctoral degree.
Table of Contents

Signature Page ii
Dedication/Acknowledgements iii
Abstract v
Chapter One: Introduction 6
Chapter Two: Review of Literature 18
Chapter Three: Methodology 54
Chapter Four: Findings 83
Chapter Five: Discussion and Conclusions 150
References 177
Appendices 183
ABSTRACT

THE IMPLEMENTATION CONTEXT: TEACHERS’ IMPLEMENTATION OF SKILLS LEARNED DURING PROFESSIONAL DEVELOPMENT

by

Erin Studer

Doctor of Education Degree

in Educational Leadership

This study describes the lived experience of six elementary teachers as they attempted to implement teaching strategies learned during a professional development workshop. The lived experience of each teacher’s implementation is conceptualized by the author as a teacher’s Implementation Context - a combination of teacher, classroom, and school factors which combine to impact teachers’ levels of implementation. The author contends that by understanding these factors (teacher, classroom, and school) and the ways in which these factors combine and interact (the Implementation Context) the field of education will have a better understanding of why teachers do or do not implement strategies they learn during professional development.
Since the passage of No Child Left Behind (NCLB), increasing pressure has been brought to bear on teachers by the legal mandates of being highly qualified and highly effective. Teachers are under increasing scrutiny to help their schools meet Annual Yearly Progress (AYP) and help their students become proficient in reading and math. In order to help teachers meet these demands, schools and districts rely heavily on professional development (PD). School districts as well as state and federal governments are investing large sums of money in the professional development of teachers. Since the newest iteration of Title II (a component of NCLB designated for funding professional development), over $24 billion dollars have been spent by the federal government alone on teacher professional development (Zastrow, 2010). Whether it is in-house professional development programs or outsourced trainings for new curriculum programs, teachers now spend a great deal of time in professional development workshops with the goal of becoming highly qualified and effective. According to the U.S. Department of Education’s NCLB Teacher Quality report, elementary teachers averaged nearly 24 hours of professional development training in the 2005-2006 school year alone (U.S. Department of Education, 2009).

Despite this emphasis on professional development, many of the classroom issues that PD workshops are intended address persist. Potentially contributing to this persistence is the low rate of teacher implementation of the strategies learned during professional development. Hill (2009) states that fewer than 25% of teachers report an impact on their teaching as a result of attending professional development workshops. It seems that though teachers attend professional development trainings and can display
competence and knowledge of the learned strategies at the time of the workshop, teachers fail to implement those strategies with consistency or fidelity in the classroom.

This lack of implementation is surprising given the carrot and stick approach of NCLB. Professional development is supposed to lead to increased teacher effectiveness, which in turn should lead to increased pupil performance yielding improved results on state standardized tests. In the NCLB model those improved test scores should reap benefits for the schools and in some cases individual teachers. Given the high stakes/high reward nature of NCLB, it would seem that teachers would increase their rates of implementing skills and strategies learned during PD. Again however, in the PD + teacher implementation = student achievement equation the middle component remains lacking as teachers rarely implement the strategies they learn during professional development (Hill, 2009; Showers, Joyce, and Bennett, 1987).

This study examined this problem of educational practice by analyzing teacher perceptions of the factors that impact implementation of PD skills. Through this analysis the researcher attempted to provide an understanding of the impact of those factors on the teachers’ lived experience of implementing strategies they learned at a professional development workshop. Additionally, the researcher attempted to examine the combinations of factors that contribute to teacher implementation of PD (the author’s conceptual framework of the Implementation Context). Finally, based on these findings, the author suggested potential implications for practice that could lead to increased levels of teacher implementation.
Statement of the Problem

In light of the low rates of teacher implementation a great deal has been written about the negative impact of bad or poorly planned professional development (Guskey and Yoon, 2009; Hill, 2009; Showers, Joyce, and Bennett, 1987; Tate, 2009). An equally large body of literature has also been written about the factors that make up effective professional development. Years of research have isolated several things that promote effective PD workshops (Guskey and Yoon, 2009; Hill, 2009; Tate, 2009). A recent meta-analysis by the American Institute for Research suggested that when done correctly the professional development workshop model may not be as ineffective as it is often made out to be (Guskey and Yoon, 2009). Yet even after participating in “effective” PD, teachers implement the workshop strategies at much lower rates than would be desired especially when improved student achievement is used as the measuring stick (Hill, 2009).

Showers, Joyce, and Bennett (1987), in their meta-analysis of 30 years of research on professional development, determined that several factors impacted rates of implementation: teacher characteristics, school and school systems, student characteristics, and staff development programs (Showers, Joyce, and Bennett, 1987).

Since the publication of Showers, Joyce, and Bennett’s work most of the research on professional development focused on the content and delivery of the staff development programs themselves as opposed to the other three external factors that were shown to impact implementation. Dozens (if not hundreds) of studies and articles have been written in the past two decades on the subject of what makes for successful staff development or PD programs (Guskey and Yoon, 2009; Guskey, 2003; Hill, 2009; Tate, 2009).
2009). Far fewer articles have been written about the other external factors and how those factors interact to impact a teacher’s implementation.

Practical experience in schools across the country as well as the research of Showers, Joyce, and Bennett (1987) tells us that these external factors have a significant impact on rates of teacher implantation of strategies learned during professional development. Educators such as Marzano (2003) corroborated Showers, Joyce, and Bennett’s analysis of the external factors that impact implementation; however, very little research has been conducted to analyze how the impact actually happens and what factors or combination of factors impact a teacher’s ability to implement new strategies in the classroom. In a recent study by Goldschmidt and Phelps (2010) on the effect of professional development, the authors noted that a great deal of work is still needed to understand the relationships between these external factors and how such factors impact instruction and student achievement.

While individually these external factors - the teacher, the classroom, and the school – can each have a significant impact on the implementation of PD, I believe equally significant is that the factors converge for each teacher into that teacher’s own unique context for implementation. Showers, Joyce, and Bennett (1987) seemed to concur when they noted that a “serious weakness in the non-research literature is the tendency of investigators to concentrate on one category of variables at the expense of others” (p. 80). Using the external factors identified by Showers, Joyce, and Bennett, I have developed a conceptual frame (the Implementation Context, see Figure 1.1) through which to examine the external factors and the convergence of those factors. I contend that it is necessary to understand the Implementation Context more clearly in order to
increase the rates of professional development implementation and through that increased implementation have a positive impact on student achievement.

The Implementation Context was the guiding conceptual framework for this study. In this conceptual framework each teacher has their own individual Implementation Context as a result of the unique combination of individual teacher, classroom, and school factors. The research methods and analysis were conducted using the Implementation Context as the lens through which the phenomenon of teacher implementation of strategies learned during PD was viewed. Since the factors that make up the Implementation Context were derived primarily from the work of Showers, Joyce, and Bennett (1987) their meta-analysis was guiding throughout the study, particularly in the Review of Literature.

This study focused on the implementation practices of six teachers at a charter elementary school in a large, diverse, urban area in the southwestern United States. The teachers selected taught in grades 3, 4, and 5 and all the participants had fewer than nine years of teaching experience. The teachers attended the same workshop during an afternoon set aside by the school for professional development (a PD minimum day). The professional development followed the guidelines for best practices found in the research literature. In this way the study, attempted to isolate the variable of the PD workshop thereby controlling for “effective” PD. By doing so the focus of the study could remain on the phenomenon of implementation and the impact of the Implementation Context. In summary, this study focused on:

- Examining teachers’ perceptions of how the factors within the Implementation Context inhibit or promote PD implementation;
• Examining which factors within the school, teacher, and classroom domains of the Implementation Context have the greatest impact on teachers’ implementation of PD strategies;
• Examining teacher perceptions of how the convergence of domain factors within the Implementation Context inhibit or promote PD implementation.

**Purpose and Significance**

This purpose of this study was to examine teacher perceptions of the factors of the Implementation Context in an attempt to understand the impact of those factors on their lived experience implementing strategies learned at a professional development workshop. In analyzing the interviews, observations, and surveys from each teacher and weighing them against one another, I hoped to provide a better understanding of the Implementation Context. A better understanding of the Implementation Context could be informative for professional development providers and administrators at schools and districts. Utilizing findings from this research, PD providers may be able to plan their PD delivery and follow-up accordingly so that rates of teacher implementation increase. Utilization of these findings could improve the delivery of professional development and thereby raise levels of PD implementation, increase teacher quality, help public schools achieve NCLB goals, and most importantly improve student learning.

**Research Questions**

• What are the teacher perceptions of the Implementation Context factors that facilitate or inhibit implementation of skills learned during PD?
• What are the teacher perceptions concerning the convergence of the Implementation Context factors and the impact of that convergence on their ability to implement skills learned during PD?

• What can be understood about the Implementation Context from the commonalities and differences of the teachers’ stories about their lived experiences of PD implementation?

**Overview of Methodology**

Six teachers from one charter elementary school were provided with a professional development workshop on cooperative learning strategies. Cooperative learning strategies was chosen as the topic for the PD workshop since they have been shown to be effective in helping students learn especially when structured to include student accountability and positive interdependence among group members (Bennett, 2003; Johnson and Johnson, 1974; Marzano, 2007). In addition, as a topic for a professional development workshop there were two inherent advantages in selecting cooperative learning strategies for the purposes of this research study. First, cooperative learning strategies is a topic which many teachers, especially upper elementary teachers, are often interested. Second, it was a teaching strategy that was readily observable and therefore could be viewed during the classroom observations conducted for this study.

The professional development training utilized specific cooperative strategies taken from the work of Dr. Barrie Bennett (2003). The format of the workshop was guided by research literature’s “best practices” for professional development workshops. For example, teachers were consulted about their prior knowledge of the content of the workshop before the PD event; teachers were asked to be active participants during the
workshop experience and to connect the information being presented to their everyday experiences; and finally, teachers were given the option of being supported in their implementation with follow-up consultation via phone or email by the PD presenter (Knight, 2009; Tate, 2009). This adherence to the best practices of professional development workshops was undertaken in an attempt to ensure the implementation variable of “effective professional development”. This allowed the researcher to focus on the factors external to the workshop in the Implementation Context. A skilled PD facilitator (a professor of education from a local university) familiar with the workshop content facilitated the workshop.

Prior to the workshop participating teachers filled out a pre-workshop survey so that demographic and professional experience data could be obtained. On the day of the PD workshop participants completed a Tolerance of Ambiguity Scale (Budner, 1962), a Locus of Control Scale (Duttweiler, 1984), and a Teacher Self-efficacy Scale (Gibson and Dembo, 1984). These measures were administered to help identify individual teacher factors that could impact implementation.

After the workshop I observed each teacher twice in scheduled classroom visits over a span of six months. These classroom visits allowed for observation of teacher implementation of skills learned during the PD workshop and also provided me with direct observation of factors present in the classroom climate. Additionally, I interviewed each teacher twice: first, two to four weeks after the professional development workshop and again after the second classroom observation had been completed. Classroom climate and school climate surveys were also be completed by the teachers during the first and second interviews respectively. These were administered in order to identify
teacher perceptions about the factors within the classroom and school as they related to the Implementation Context.

I also interviewed the current school director as well as the founding director of the charter school. The administrator interviews allowed me to understand factors present in the school climate and to ascertain administrative perspective about how the institution valued professional development.

**Limitations and Delimitations**

This study examined the lived experience of six 3rd-5th grade teachers at a charter elementary school located in a diverse, urban, area in the southwestern United States over a period of six months. All participants had nine or fewer years of teaching experience. This study identifies commonalties and differences among the experiences of these teachers within the framework of the Implementation Context. The analysis provided in this study may indicate of reasons why teachers do or do not implement the professional development strategies they learn at PD workshops.

This study ultimately was able to analyze the implementation of only one kind of professional development and was able only to follow the teachers for approximately six months. The study was not able to capture the differences concerning what kinds of professional development are most likely to be implemented. This study also was conducted at only one site. Therefore, differences in implementation across different school sites or kinds of school sites (large, district-run, private, parochial) are not considered in this study. This study was also not able to ascertain the effect of time (greater than six months) on the increase or decrease in teacher implementation of learned strategies over an extended time period.
The aspect of time is critical given that all professional development is ultimately about the process of change and change naturally takes time. Implementation of skills learned during PD is a change that is expected to take place in the complex and nuanced environment of a classroom which itself exists within the complex and nuanced environment of a school. Given these issues, this study’s analysis did take into account the nature of individual and institutional change.

Summary

The hope that underlies professional development is that it will make teachers more effective and in turn improve the learning outcomes for the students they serve. Unfortunately, despite the resources dedicated to professional development and the laudable purposes in undertaking PD, rates of implementation remain significantly low (Guskey and Yoon, 2009; Hill, 2009; Showers, Joyce, and Bennett, 1987). A great deal of attention has been paid over the last several decades to remedying this problem by improving the quality of the professional development workshops and their delivery (Guskey and Yoon, 2009; Hill, 2009; Tate, 2009). However, much less attention has been paid to the other external factors that impact PD implementation: school, classroom, and individual teacher factors (Marzano, 2003; Showers, Joyce, and Bennett, 1987).

This study explored those external factors and how they converge with one another through the study’s conceptual framework of the Implementation Context. These factors were explored by providing a PD workshop to six elementary teachers at an urban charter school. Each teacher then participated in two interviews and two classroom observations regarding their implementation of those strategies over the course of six
months. The participants also completed three surveys about their personality attributes, one survey about their classroom climate, and one survey about their school climate.

The remainder of this dissertation is divided into four chapters: Review of Literature, Methodology, Findings, and Discussion and Conclusion. In the next chapter, Review of Literature, a review is provided concerning the relevant research about best practices for professional development, impediments of professional development, implementation of professional development as a form of individual and school change, and the domains of the Implementation Context.
Implementation Context (I.C.): The convergence of factors from school, classroom, & teacher that impact the implementation of strategies learned in PD.
CHAPTER II: REVIEW OF LITERATURE

The following review of literature is divided into two main sections. The first section is an examination of the relevant literature about professional development and aspects of professional development which render it effective or ineffective. Best practices and prevailing wisdom concerning the provision of professional development are discussed in this section. These “best practices” informed the creation and delivery of the professional development workshop (described in Chapter III) which was provided to the study’s participants. By adhering to these best practices, the study was able to focus on the Implementation Context and its factors which impact teacher implementation as opposed to the potentially confounding factors related to the quality of the PD provided.

In addition, the phenomenon of change, particularly change in schools, will also be examined in the first section. Change will be examined given that a change of action or behavior is inherent in professional development and implementation of skills learned during PD workshops. Change is a phenomenon that can be examined at the level of the individual (e.g. teacher) as well as the level of the system (e.g. classroom or school). In this study several quantitative surveys were used to measure individual proclivities for change as well as to measure classroom and school climates and their potential for change.

In the second section of this chapter relevant literature about the three domains of the Implementation Context - school, classroom, and teacher - is presented. The literature synthesized in this section serves to clearly define the parameters of each Implementation Context domain by examining the ways in which the domains have previously been defined and measured by other researchers. In this study, I contend that
the three domains identified as impactful to PD implementation are actually in operation all at once and uniquely combine to create each teacher’s own Implementation Context. The data collected in this study about each participant’s implementation of strategies was interpreted through the conceptual framework of the Implementation Context.

Finally, it is important to note that the literature reviewed in this chapter concerning professional development and the domains of the Implementation Context involve studies which predate and those which are contemporary with the landmark federal legislation No Child Left Behind (NCLB). NCLB’s emphasis on content standards and teacher quality increased the demand for effective professional development; however, this government mandate only put weight behind previous calls by teacher groups and educational lobbying organizations for an increased emphasis on the need for quality PD and the subsequent implementation by teachers of skills they had learned. As an example of this call to action, the 1996 National Commission on Teaching and America’s Future issued a report which recommended an emphasis on teacher learning in order to provide every student a “competent, caring, and qualified teacher” (Darling-Hammond, 1996, p. 3). At the time, this call to action went largely unheeded by state and federal policy makers. So, while my study took place in the wake of unprecedented federal interest and involvement in teacher professional development, the research interest in teacher professional development is one that has existed for several decades.

**Professional Development**

Regardless of the impetus for professional development – legislative imperative or adhering to good professional practice - professional development is intended to raise
the quality of instruction provided by teachers and improve student learning. A large body of research has helped educators and professional development providers determine many of the factors which contribute to the provision of effective professional development (Guskey and Yoon, 2009; Guskey, 2009 Hill, 2009; Showers, Joyce, and Bennett, 1987; Tate, 2009). However, despite a wealth of knowledge about what makes effective professional development, rates of implementation by teachers of the skills learned at professional development remain very low (Guskey and Yoon, 2009; Hill, 2009). To clarify this disconnect between the provision of professional development and rates of teacher implementation I synthesized relevant literature on provision of implementation and the factors that impact and impede implementation of skills learned during PD. The presentation of this synthesis is divided into four parts: Principles for best practice in PD, Impediments to successful PD, Assessment of and evaluation professional development, and Implementation of change.

**Principles of best practice for PD**

Professional development has received a great deal of research focus over the past thirty years. Many researchers identified elements which make professional development engaging, meaningful, and impactful on the knowledge, dispositions, and skills of the teachers who participate (Marzano, 2003; Showers, Joyce, and Bennett, 1987; Youngs and King, 2002). These factors include setting a clear PD purpose, knowing the participants, arranging PD content in chunks to aid understanding, integrating activity in the PD training, allowing participants to share and discuss with one another, allowing time for practice of skills, and conducting on-going follow-up and support (Guskey and Yoon, 2009; Hill, 2009; Showers, Joyce, and Bennett, 1987; Tate, 2009).
Showers, Joyce, and Bennett’s (1987) extensive analysis on professional development research also supports these findings. They found four critical elements in respect to the design of successful professional development: 1) that theory about the teaching skills was presented, 2) the new strategy was specifically and clearly demonstrated, 3) participants practiced the new skill(s) in the professional development workshop, and 4) prompt feedback about the participants’ efforts with respect to the skill was provided (Showers, Joyce, and Bennett, 1987). All of the best practices identified in the synthesized literature were used to guide the professional development workshop provided to the participants in this study.

Showers, Joyce, and Bennett (1987) also highlighted factors about professional development that did not seem to have an effect on the success of PD. These factors included the location of professional development workshop and the role of the presenter. They found that the location of the professional development had little to no impact on its effectiveness. In their meta-analysis of professional development research it also did not seem to matter whether the PD provider was a colleague or an outside provider (Showers, Joyce, and Bennett, 1987). However, Guskey (2009) and Corcoran, Fuhrman, and Belcher (2001) in their analyses of professional development added a nuance to the understanding of the role of the PD provider. In both their analyses of professional development programs they found that bringing in an outside expert at some point in the professional development process was almost always found in professional development programs that showed high correlation to improved student achievement (Corcoran, Fuhrman, and Belcher, 2001; Guskey, 2009). While these analyses seem contradictory, they may in fact be pointing to different components of successful professional
development. Showers, Joyce, and Bennett may have been examining the participant
presenter relationship while Guskey and Corcoran, Fuhrman, and Belcher may have been
identifying the need for a certain level of expertise.

Showers, Joyce, and Bennett (1987) also identified teacher characteristics that impact
the success of professional development. They noted that what teachers think about
teaching impacts what a teacher does when they teach and this often impacts how
teachers view and receive professional development. Additionally, they determined in
their analysis of PD research that teachers are more likely to implement PD skills if they
receive follow-up coaching from an expert or a peer (Showers, Joyce, and Bennett,
1987). Guskey and Yoon (2009) and Knight (2009) also emphasize the need and
importance of follow-up as a key factor for successful PD implementation. Showers,
Joyce, and Bennett also state that high-self esteem and flexibility of thinking both
correlate positively with successful PD implementation by teachers. However, specific
teaching styles or particular personal values did not seem to have great impact on the
teachers’ ability to benefit from PD either positively or negatively (Showers, Joyce, and
Bennett, 1987). Additional findings by Showers, Joyce, and Bennett will be examined
again later in this chapter concerning the external factors which make up the
Implementation Context. The work of Showers, Joyce, and Bennett on these external
domains which impact PD implementation provides the bedrock for the conceptual
framework of my study.

Guskey and Yoon (2009), in their more contemporary study, corroborated many of
Showers, Joyce, and Bennett’s findings. They also examined additional factors which
contribute to successful professional development. Guskey and Yoon found, contrary to
current conventional wisdom, that professional development workshops were effective methods for bringing about teacher improvement. In fact, most studies which positively linked PD and improved student learning involved PD workshops as a training method as opposed to professional learning teams or some other form of collaborative PD (Guskey and Yoon, 2009). Additionally, Corcoran, Fuhrman, and Belcher (2001) noted that diffused decision making about PD programs within schools and school districts often weakened the overall effects of professional development.

Guskey and Yoon (2009) also found that involving outside experts can be necessary to maximize the impact of PD. In addition, they found that schools and districts must allow a great deal of contact time (initially and in follow-up) to ensure successful implementation of professional development skills. Guskey and Yoon (2009) stated that depending on the content of the professional development provided approximately 30 hours of contact time with PD providers and/or coaches may be necessary to achieve successful implementation.

Follow-up and ongoing support for the participants in professional development often comes in the form of coaching. Knight (2009), in his examination of effective professional development follow-up, detailed the aspects of successful coaching and how coaching relates to the promotion of PD implementation. Knight identified the following elements for successful coaching: *focus on professional practice, job-embedded, intensive and ongoing, grounded in partnership, dialogic, non-evaluative, confidential, and facilitated through respectful communication*. Professional development follow-up, by its personal nature, has the potential to change teacher domain factors, factors which without the follow-up coaching may inhibit PD implementation. Similarly, a school
district that offers follow-up coaching for its PD programs may change the school or classroom domain of the Implementation Context in which PD is undertaken.

In addition to these elements of effective PD programs noted above, some researchers have also suggested alternative models of PD in response to the traditional workshop setting. A traditional PD workshop is generally characterized as a workshop event that teachers attend outside of their normal work environment. Some research suggests that PD delivery should be more closely linked to the school and classroom where teachers work. Hord (2009) states that learning should not be an “add-on” for a teacher but rather it should be a “habitual activity where the group [of teachers] learns how to learn together continuously” (p.40). Hord goes on to emphasize that learning, for both teachers and students, is most productive when conducted in a social context rich with authentic activities and situations. However, the research concerning the effectiveness of these methods of professional development is currently inconclusive (Corcoran, Fuhrman, and Belcher, 2001; Guskey, 2009).

*Impediments to successful PD.*

Much of the literature on professional development provides guidelines by which successful professional development can be planned. Disregarding any of the best practice elements for professional development (e.g. opportunity to practice, presentation of theory, follow-up, etc.) could present an impediment to successful implementation. However, there are still several other factors that research has shown can be impediments even to professional development programs that incorporate the principles of best practice. Several impediments to the successful implementation of skills learned at professional development are external. Showers, Joyce, and Bennett contend that these
external impediments reside within the three domains - school, classroom, and teacher. These three domains provide the underpinnings of the Implementation Context. Showers, Joyce, and Bennett (1987), Marzano (2003), Guskey and Yoon (2009) and others describe several factors which exist in each of those domains. This body of research literature is described in detail in the second section of this chapter: Implementation Context.

However, other internal impediments to successful PD also exist. Hargreaves (2007) in his examination of ineffective PD suggests five “new” pitfalls or impediments of professional development. These pitfalls are not external but rather are potential shortcomings within the purposes, planning, and or presentation of the professional development program. To describe the impediments Hargreaves (2007) uses the following terms: Presentism, Authoritarianism, Commercialism, Evangelism, and Narcissism.

In discussing Presentism, Hargreaves (2007) suggests that schools become too focused on short term goals and treat long term planning about professional development as a “luxury” that can rarely be afforded. Too busy trying to reach the most immediate goal or respond to the most present crisis, schools merely provide professional development which is rooted in the now and is oriented toward delivering quick results. Authoritarianism is another impediment that Hargreaves describes. This impediment rests in the idea that only those in charge know what is best, and therefore should determine all of the content of the provided professional development and teacher learning opportunities. Authoritarianism results in missed learning opportunities for teachers and often disengaged and disenchanted teachers (Hargreaves, 2007). The
impediment of Commercialism, Hargreaves states, can also be detrimental to professional development efforts. This impediment reveals the potential dangers that exist when professional development is used as a profit making endeavor. Major publishers and curriculum developers focused on profits may often sacrifice essential curriculum elements that are critical to teacher development and student learning outcomes in exchange for maximizing their bottom line (Hargreaves, 2007).

The final two impediments Hargreaves offers, Evangelism and Narcissism, are two impediments to successful PD implementation which both deal with the PD provider. Evangelism refers to the PD presenter who is full of fervor and emotional connection and who has the ability to illicit empathy and sympathy for struggling students, but who is short on specific strategy application and well researched methods. The impediment of Narcissism refers to a presenter who is more in tune with their performance of delivering the workshop than in tune with the assistance and guidance they should be providing to the teachers attending the PD (Hargreaves, 2007). Both of these impediments leave participants wanting real world application based on proven methodology.

In essence Hargreaves’ (2007) professional development impediments result in staff development that is too rooted in “urgent” problems and driven by authoritarian means or by the promise of monetary gain. Meanwhile the leaders of these professional development efforts (from individual workshops to the school reform programs) are often led by individuals caught up in converting teachers to their way of thinking or perhaps led by those caught up in themselves and their own PD presentation (Hagreaves, 2007). These impediments can have an negative impact on the successful implementation of skills learned at professional development by teachers. However, when these factors are
taken into consideration and avoided and PD providers incorporate the best practices discussed previously, it can be assumed that a good plan has been put in place for the delivery of successful professional development.

Yet, in the field of education it is not safe to make assumptions about success particularly in regard to PD implementation. Therefore it is important when considering the best practices and impediments of professional development to also consider the assessment of the professional development program. Next, a review of literature concerning the assessment and evaluation of professional development is provided.

*Assessment and Evaluation of Professional Development.*

A professional development provider following the best practices for successful development and with a plan to avoid any internal impediments can feel confident about the potential success of their PD. Assessing the actual success of the professional development is a different matter. Many different models of assessment and evaluation are available to examine programs and their implementation. According to Fowler (2009) the seven basic steps of the evaluation process are: *determine the goals, select the indicators, develop data-collection instruments, collect data, analyze and summarize data, write evaluation report, and respond to evaluators’ recommendations.* This process can be utilized to evaluate nearly any program or policy implementation and is widely used in many professional fields. However, Guskey (2002) noted that systematic evaluation of professional development is rarely undertaken and when it is, it is rarely done with a specific eye toward the purposes of PD. In response to this lack of systematic evaluation of PD, Guskey outlined five levels at which professional development can be evaluated: *Participant Reactions, Participant Learning,*
Organization Support and Change, Participant Use of New Knowledge and Skills and Student Learning Outcomes.

Guskey (2002) stated that “through evaluation of [professional development] you can determine whether these activities are achieving their purposes” (p. 46). The framework he provided clarified the elements that need to be evaluated in professional development. The indicators he chose were teacher reactions to the PD and the increase in their knowledge about the PD skills and their use of the PD skills. He also recommended evaluation of the external indicators of change and support for change within the organization (i.e. school domain). Additionally, he suggested that student learning outcomes should also be an indicator of successful PD implementation (Guskey, 2002). While he did not specify particular data-collection instruments or methods, it would seem that a mix of quantitative and qualitative methods would be appropriate because both quantitative measures of student achievement and qualitative data about teacher perceptions would be valuable in the long-term assessment of a professional development program.

Implementation of a change.

Professional development is aimed toward improving and changing professional practice by teachers and the overall educational practices of the schools in which they work. Presumably the changes will be for the betterment of the teachers’ professional capacity and for the betterment of the children that they teach. Change, both individual and institutional, has been extensively researched and analyzed. It is important to provide a review of this change literature to fully contextualize the professional development process that teachers experience.
Professional development calls for individual change. After receiving PD it is hoped that teachers will improve (change) their knowledge, skills, or dispositions through the process of implementation (Marzano, 2007). Kouzes and Posner (2007) in their work on leadership and change initiatives state that all change is individual; therefore, even a district-wide PD initiative undertaken by all teachers in a district remains at its heart a personal change. Much of how change is operationalized at a personal level lies within the teacher domain of the Implementation Context. The potential individual factors at work (e.g. self-efficacy, conceptual flexibility) are addressed in the Review of Literature section on the Implementation Context.

Institutional change, which operates within the school domain of the Implementation Context, has received extensive attention in both the education and business worlds. Kotter (1998), whose model for change in business is also applicable to education, wrote in his seminal work on change and change initiatives that the first step of initiating successful change is to establish urgency. Without urgency, or put another way, a perceived need for change, it is unlikely that change will occur (Kotter, 1998). In this way, many PD initiatives that are offered absent a particular need or sense of urgency may often fail to be implemented.

Senge (2007) broadens the notion of individual change in his work on change in systems and institutions. When a change in policy or procedure is initiated within a system (such as a school or district) various forms of feedback and resistance can either hasten or impede its implementation (Senge, 2007). In the conceptual framework of the Implementation Context many of these feedback and resistance loops in a change process
originate in the school domain of the Implementation Context though they could exist at the classroom level as well.

**Summary of Professional Development**

Successful professional development should include several elements: have a clear PD purpose, allow a PD provider to know their participants, have PD content arranged in chunks to aid participant understanding, integrate activity in the PD training, allow participants to share and discuss with one another, allow time for practice of skills, and provide follow-up and support (Guskey and Yoon, 2009; Hill, 2009; Showers, Joyce, and Bennett, 1987; Tate, 2009). Additionally, professional development workshops should include presentations about the theory underlying the skills being taught, provide specific and clear demonstrations of the new teaching strategy/skills, provide opportunity for participants to practice the new skill(s) in the professional development workshop, and provide prompt feedback about the participants’ efforts in trying out the new strategy or skill (Showers, Joyce, and Bennett, 1987). The literature also stated that teachers need sufficient time to learn the new and need to have sufficient time provided at the school site to work on implementing the new skills. Follow-up support (often in the form of coaching) should also be provided during teachers’ initial skill implementation phase (Guskey and Yoon, 2009; Hill, 2009; Knight, 2009; Showers, Joyce, and Bennett, 1987 Tate, 2009).

However, even when these practices are followed impediments to the successful implementation of skills learned during professional development can continue to exist. Hargreaves (2007) noted five impediments to professional development (*Presentism, Authoritarianism, Commercialism, Evangelism, and Narcissism*) which can negatively
impact the success of a PD program and its implementation. Also it was noted that developing a comprehensive evaluation system can be critical to assessing and sustaining the success of a professional development program (Guskey, 2002). Additionally understanding the unique aspect of professional development a change process is important when attempting to implement a successful professional development program (Kotter, 1998; Kouzes and Posner, 2007, Senge, 2007).

In the second section of this chapter, the literature about the three domains of the Implementation Context is explored. The professional development elements described in the first portion of this chapter can be planned for and in many ways controlled. However, the elements described in the next section are external from the professional development workshop or program. These external factors interact uniquely for each teacher creating for each teacher their own context for implementation - their Implementation Context.

**Implementation Context**

The concept of a unique, teacher specific context -the Implementation Context - in which each teacher attempts to implement skills they have learned during professional development, was derived from the literature on the external factors that impact PD implementation (Marzano 2007; Showers, Joyce, and Bennett 1987). Showers, Joyce, and Bennett (1987) and Marzano (2007) suggest that factors within three domains, outside of the PD presentation itself, influence teacher implementation of skills learned at PD. Those domains are the teacher, the school, and the classroom. Largely the factors within these domains exist independently of the quality of the professional development workshop provided. Therefore, even if professional development is delivered using
several or all of the principles for best practice, the rates of implementation by the teachers remain in part dependent on a combination of factors concerning the teacher, their school, and their classroom. I combined these external factors into the conceptual framework of the Implementation Context. Because each teacher’s particular combination of factors (self, school, and classroom) is unique, it stands to reason that each teacher’s Implementation Context is also unique and therefore each teacher’s implementation efforts uniquely impacted.

This section of the Review of Literature will examine these three domains separately highlighting various factors within each domain, as well as the potential defining characteristics of each domain. This section of the Review of Literature will be divided into three parts, one for each domain.

*Teacher Domain.*

Showers, Joyce, and Bennett (1987) identified several factors that come into play when a teacher attends, benefits from, and implements professional development. These factors included teacher knowledge, teacher skills, teacher learning styles, and personal characteristics such as state of growth, conceptual flexibility, sense of efficacy, and self-concept. These factors, factors found in the teacher domain of the Implementation Context, relate to a teacher’s ability to benefit from and apply skills learned at professional development and also to a teacher’s overall effectiveness. Marzano (2003), in his analysis of effective teachers, provided three categories for teacher effectiveness attributes: instructional strategies, classroom management, and classroom curriculum design. Bennett (2003) also provided a framework for effective teaching which aligns with Showers, Joyce, and Bennett’s (1987) and Marzano’s (2003) work.
Bennett (2003), whose synthesis of cooperative learning strategies was used for this study’s PD workshop, identified factors of teacher effectiveness which he called Instructional Intelligence. The factors he identified were: 1) Having a rich and meaningful repertoire of ways to assess learning, 2) Having a deep knowledge and ability to intersect multiple content areas, 3) Having an extensive understanding of how students learn, 4) Having an extensive repertoire of instructional methods that you can integrate in a variety of ways, 5) Having the ability to wisely go about the process of educational change, 6) Having a personality that encourages students to walk into your room (Bennett, 2003).

Marzano (2003) in his framework condensed the teacher effectiveness attribute lists of many researchers into three main categories - instructional strategies, classroom management, and classroom curriculum design. Bennett’s identified factors fit nicely into those categories. Most effective professional development for teachers, in order to be of greatest use, falls within one of these areas of teacher effectiveness whether instruction, classroom management, or curriculum design. The professional development workshop provided during this study focused on instructional strategies.

However, it seems that teacher domain factors within the Implementation Context are more than just the three factors of teacher effectiveness identified by Marzano (2003). Certainly, the ability to instruct, manage a classroom, and plan curriculum are critical to implementing new teaching methods learned at professional development; yet, I believe, as Showers, Joyce, and Bennett (1987) state, that other personal factors such as self-esteem and flexibility of thinking also come into play.
Measuring the teacher domain.

In an attempt collect quantitative data on teacher domain factors I asked participants in this study to complete a Tolerance of Ambiguity Scale, a Self-efficacy Scale, and a Locus of Control Scale. The scores of the measures were used to analyze and contextualize the qualitative data gathered from the participant interviews and classroom observations. Below is a review of the three personality trait factors that were surveyed. The personality traits of Tolerance of Ambiguity, Self-efficacy, and Locus of Control were selected because of their close alignment with the personality traits identified by Showers, Joyce, and Bennett as those having an impact on PD implementation.

Tolerance of Ambiguity.

Tolerance of Ambiguity is a personality variable that has been widely studied beginning with Frenkel-Brunswik’s work in 1948 and continuing on to Budner (1962), McDonald (1970), Furnham and Ribchester (1995), McClain (2009) and others. Tolerance of Ambiguity was originally studied in relation to rigidity as a personality trait but then was redefined by Budner (1962) as a more nuanced and complex trait which surfaces in response to novel, complex, or insoluble situations. Budner (1962) created a Tolerance of Ambiguity Scale in an attempt to measure this personality variable and much of the research on measuring Tolerance of Ambiguity over the last five decades has been in response to his research (Furnham, 1995).

Budner (1962) framed Tolerance of Ambiguity as a personality trait wherein individuals react to ambiguous situations both internally and externally in a positive or negative way. This trait can be seen as an individual’s tolerance or intolerance of
ambiguity (Budner, 1962). This personality trait is potentially a variable at play with teachers when they attempt to implement skills learned in professional development. If a teacher perceives the situation of implementing a new set of teaching skills as novel, complex, or insoluble, and they have a low Tolerance of Ambiguity, it would stand to reason they would be less likely to try to implement the new teaching skills.

Budner’s Tolerance of Ambiguity Scale (1962) has been widely used, adapted, and studied (Benjamin, Riggio, and Mayes, 1996; Furnham and Ribchester, 1995; McDonald, 1970; McLain, 2009). Some critics of Budner’s Scale have noted that it has poor internal validity among the items and often has not had a high level of correlation to subsequently developed measures of Tolerance of Ambiguity (Benjamin, Riggio, and Mayes, 1996; Furnham and Ribchester, 1995). However, Budner always maintained that the Tolerance of Ambiguity personality trait was highly complex. This complexity can lead to a lower level of internal validity among items (Benjamin, Riggio, and Mayes, 1996; Furnham and Ribchester, 1995). Despite this potential short-coming, Budner’s Scale has had wide-spread use for several decades across a wide variety of experimental groups making it one of the most commonly used and frequently examined measures for the Tolerance of Ambiguity trait. Given its wide-spread use and its brief paper and pencil format, Budner’s Scale (1962) was well suited for the purposes of my study.

Self-efficacy.

Albert Bandura’s (1977) work on self-efficacy as a trait of human behavior is considered seminal. Self-efficacy or efficacy expectations are defined by Bandura’s work as a person’s “conviction that [they] can successfully execute the behavior required to produce the outcomes” that are desired (Bandura, 1977, p. 193). In short, individuals will
take on behaviors that they believe bring about desired results and those that they feel they can actually affect. Those behaviors which they believe they cannot affect or those which will “exceed their coping skills” they will most often not attempt regardless of their beliefs about the desirability of the outcomes (Bandura, 1977).

This self-efficacy concept is important during the implementation of new skills learned during professional development. Teachers must have sufficient self-efficacy in order to attempt to execute the new professional development skills. Additionally, the teachers must believe that the execution of those skills will bring about desired outcomes such as improved student performance. Successful implementation of any professional development program rests in part on the self-efficacy of the participating teachers specifically in regard to the skills they learn during that professional development.

That said, an individual’s self-efficacy, as described by Bandura (1977), is not a fixed entity. It can change depending on the behavior to be executed and the context in which the behavior is to be executed. Self-efficacy can also increase or decrease for an individual based on changing information and knowledge acquired over time. In Bandura’s self-efficacy model, four sources of information impact an individual’s self-efficacy: performance accomplishments (participant modeling, performance desensitization, performance exposure, self-instructed performance), various experience (live modeling, symbolic modeling) verbal persuasion (suggestion, exhortation, self-instruction, interpretive treatments), and emotional arousal (attribution, relaxation/biofeedback, symbolic desensitization, symbolic exposure). These sources of information all play a role in forming an individual’s self-efficacy in regard to specific circumstances and tasks. These sources of information can and often do change over
time; therefore, an individual who does not feel they can affect a behavior at one point in their life may later develop the self-efficacy necessary to attempt that same behavior. Thus, it is important to recognize that the professional development process itself can have an impact on teacher self-efficacy, and in fact good PD should be oriented toward developing feelings of efficacy in the participating teachers concerning the particular skills being taught.

Bandura (1977) noted that “enhanced self-efficacy tends to generalize” not only to similar situations and behaviors but to unrelated ones as well (p. 195). Individuals who have a high degree of self-efficacy often have the expectation that they can affect behaviors to gain desired outcomes in many different situations. Teachers with a high degree of self-efficacy upon entering a professional development workshop have a greater likelihood of attempting the PD skills in their classrooms than those teachers who entered the PD workshop with a lower sense of self-efficacy.

Gibson and Dembo (1984), used Bandura’s self-efficacy model as a framework to develop a specific scale to measure teachers’ self-efficacy as it relates to their classroom, students, and their teaching. After developing and validating their measure, Gibson and Dembo made several important assertions. They stated that their model of teacher efficacy is multidimensional with a high level correspondence to Bandura’s two-dimensional model of self-efficacy. In Gibson and Dembo’s framework teacher efficacy is distinct from other teacher attributes such as verbal ability and verbal flexibility making it a unique and identifiable personality trait. Their findings suggested that teacher efficacy may influence certain teacher behaviors which are known to have a positive impact on student achievement (Gibson and Dembo, 1984). Since Gibson and
Dembo’s efficacy scale was designed specifically for teachers it was well suited to measure the self-efficacy factor of the teacher domain for my study.

Locus of Control.

Locus of control, while related to the concept of self-efficacy, is distinct from it. Rotter (1990), in a summary analysis of his extensive and long running work on this personality trait stated that locus of control could be understood in terms of internal versus external control. This dichotomy, Rotter stated, could be understood as the “degree to which persons expect that a reinforcement or an outcome of their behavior is contingent on their own behavior or personal characteristics versus the degree to which persons expect that the reinforcement or outcome is a function of chance, luck, or fate, is under the control of others, or is simply unpredictable” (Rotter, 1990, p. 489). The distinction between the locus of control and self-efficacy can be found in Rotter’s definition: self-efficacy is the belief that one can affect a behavior that may yield desired results; locus of control is the belief about from where those results come. While there can be a relationship between the two concepts, they are not necessarily intertwined. For example, an individual can believe they have the ability to affect a behavior (e.g. try a new teaching strategy to improve reading comprehension), do that behavior, be met with negative results, but then assign the locus of control for those results to something outside themselves and their actions (e.g. the parents did not do an at-home component of the reading strategy).

Duttweiler’s (1984) expanded on Rotter’s work and developed a measure of internal locus of control which identifies individual perspective on their assignment of
causation for events and changes. This validated, internal locus of control measure was used in this study to gather data on this particular factor of the teacher domain.

**Personality Surveys – Summary.**

Tolerance of ambiguity, self-efficacy, and locus of control can all be reasonably linked to a teacher’s willingness and ability to undertake the task of implementing new skills learned at professional development. These personal factors may correlate strongly to an individual’s ability to affect instructional change in the classroom after receiving professional development. Scores from these three measures informed, along with demographic, observational, and interview data, a complex and nuanced understanding of the teacher domain of the Implementation Context. This data was used to analyze how various teacher domain factors and teachers’ perceptions of those factors impacted their ability to implement skills learned in professional development.

**Classroom Domain.**

Classrooms are dynamic, human environments. The climates of classrooms are dependent on the teachers, the students, and the physical conditions in which they reside. As such, the classroom plays a role in a teacher’s ability to implement skills learned in professional development workshops. In fact, though classrooms can be sometimes seen as a microcosm of the school, they have their own variety of factors which contribute to the conceptual framework of the Implementation Context. Classroom domain factors include the complex social interactions of students and teachers as well as elements of the physical environment such as size of the room, proper lighting, and the number of students in the class. Other factors include classroom resources such as text books, desks, and supplies.
Naturally, the students and the strengths and challenges that they bring to the classroom along with their social interactions with one another and their teacher contribute greatly to the classroom domain. Showers, Joyce, and Bennett (1987) identified student knowledge, student skill, and the students’ personal characteristics as factors which related to successful implementation of professional development. Marzano (2003), in looking at what makes students successful, identified several student-level factors that impact levels of student success in the classroom. Home environment, learned intelligence or background knowledge, and motivation are the factors which he identified (Marzano, 2003). The factors Marzano identified for student success correlate with the factors presented by Showers, Joyce, and Bennett which impact implementation of professional development. The implication seems to be that there is a connection between successful students and the successful implementation of professional development skills. Which of these elements comes first or the exact nature of their interaction is difficult to determine based on the current professional development research.

Another key aspect of the classroom domain beyond the traits of students is the quality of the person to person interactions in the classroom. Classroom climate, as defined by Schmuck and Schmuck (1978) included group process, student-teacher interactions, student-student interactions, as well as teaching style and classroom organization. These factors impact both the students and their learning and the teacher as well (Grayson and Alvarez, 2007; Sink and Spencer, 2005; Walberg and Greenberg, 1997). In addition, how a teacher perceives these factors is also important. Classroom domain factors and their impact on a teacher are mitigated by teacher perception.
Therefore in regard to professional development and its implementation, how a teacher perceives their classroom environment can have a significant impact on the instructional methods they use or try to implement.

**Measuring the classroom domain.**

Classroom climate is a complex venue for human social interaction. This makes measuring the climate of any one classroom difficult. Sink and Spence (2005), in their study of elementary school students, divided these classroom concerns into four categories derived from Fraser’s (1982) My Class Inventory (MCI) Scale: *Friction, Cohesiveness, Difficulty,* and *Competitiveness.* They created a Short Form version of the MCI for both students and teachers (Sink and Spence, 2005; 2007). This attempt to quantify the various aspects of classroom climate, while ultimately limited, as nearly any measure would be, represents a worthwhile attempt to understand the impact of various classroom factors on teaching and learning.

Measuring the classroom domain involved gauging teacher perception of the class environment as well as directly observing the classroom. In this study, as part of that measurement, teachers took the My Classroom Inventory - Short Form (Sink and Spencer 2005). This survey had been utilized in a wide variety of classrooms and was specifically designed for elementary school teachers making it ideal for this research study. In addition, teachers were interviewed about their perceptions of the classroom climate. Classroom observations along with interviews of school administrators were also conducted. Data from these methods contributed to my understanding of the factors of the class domain and their impact on each teacher’s Implementation Context.
School Domain.

Showers, Joyce, and Bennett (1987) described several factors at the school level which are important in the implementation of professional development. The school site and school system play an important role in a teacher’s ability to access and implement professional development skills. Showers, Joyce, and Bennett stated that leadership, cohesion and synergy of social systems, the governance processes of schools and school systems, and the relationship of the school with its community all play a role in a teacher’s ability to access and implement professional development skills.

These factors correlate positively to the ones identified by Corcoran, Fuhrman, and Belcher (2001). In their description of the role school districts can play in teacher improvement, they stated that school/school system vision, focus, support, and policy coordination are all ways in which districts can support successful implementation of professional development programs and thereby improve the quality of their teachers (Corcoran, Fuhrman, and Belcher, 2001). When districts or the administrative structures of individual schools are able to provide a positive school climate for teachers, they create a climate in which teachers are willing to develop their teaching skills through professional development. Guskey (2009) corroborated this idea in his findings which indicated that the indirect impact of schools and school systems are important with respect to PD and teacher improvement. Guskey cited leadership, collaboration, accounting for school specific context, and providing ample time for professional development as ways in which schools and school systems can support successful professional development.
Laine (2000) agreed with Guskey’s concepts of what create a supportive environment for professional development at a school. Specifically, Laine noted several factors that could be at play in the school domain of the Implementation Context. Those factors included providing time during the school day and school year for professional development, acculturating teachers early in their careers toward the need for professional development, and coordinating the goals of the school with the goals of the professional development provided. Laine (2000) stated that these are all critical factors in creating a supportive environment for professional development programs.

Barth (2006) also stated that the school environment plays a large role in successful PD implementation; however, he focused on the quality of the relationships among the faculty, staff, and administration stating that those relationships are of significant importance. He argued that the “nature of relationships among the adults within a school has a greater influence on the character and quality of that school and on student accomplishment than anything else” (Barth, 2006, p. 9).

A school’s leadership had also been shown to be an important factor of the school climate and therefore an important factor within the school domain of the Implementation Context. Showers, Joyce, and Bennett (1987) and Corcoran, Fuhrman, and Belcher (2001) identify leadership as an extremely important factor within the school domain. Though Marzano (2003) specifically does not include leadership in his initial breakdown of school effectiveness factors, he states that leadership pervades all aspects of the school environment and in fact may be “considered the single most important aspect of” school effectiveness (p. 172). Leadership as an elements of effective schools seemingly would
also play an important role in how teachers are able to implement skills learned during professional development.

Fullan (2008) contended that school leaders have a major role to play in creating positive school environments. Fullan noted that school leaders should find ways to create collaborative work environments as well as ones in which teachers can focus on the work of learning while at work. Leithwood (2007) echoed Fullan’s sentiments and suggested that school leaders help create these positive school climates by entering into transformational change experiences with their teachers. These experiences would be ones in which teachers participate in the learning and change efforts of the school rather than administrators issuing hierarchical and transactional reform mandates which often create unsatisfactory work environments. Both Fullan and Leithwood indicated that the degree to which any individual can create a positive environment for learning and professional growth at a school rests largely with the school leaders.

How educational leaders at any given school see the purpose of their school and more broadly the purpose of schooling is also a key component to school leadership. A leader’s vision concerning the purposes of schooling connects to the types and purposes of the professional development that a school leader provides for the teachers at their school. For example, Goodlad (2002) espoused three major purposes of education – preparation for citizenship, preparation for economic viability, and preparation for living a moral life. A leader emphasizing one of these purposes for education over the others would make very specific decisions about the climate of the school and the priorities of the professional development program at the school. Thus a leader’s understanding of
the purpose of school could have an impact on the school domain of the Implementation Context.

Marzano (2003), in his analysis of the various aspects that make successful schools, identified five basic factors that collectively he called school-level factors which impact student achievement. Those factors were 1) Guaranteed and viable curriculum, 2) Challenging goals and effective feedback, 3) Parent and community involvement, 4) Safe and orderly environment, and 5) Collegiality and professionalism (Marzano, 2003). Marzano contended these school-level factors are necessary to promote school effectiveness and student achievement. All of the factors which contribute to the environment at a school are factors within the school domain of the Implementation Context. However, there are other factors in the school domain that exist beyond the factors noted above. These additional school domain factors relate to the concept of school climate.

Within the research literature many aspects of the school domain have been referred to as School Climate. Many attempts have been made throughout the last three decades to quantify and measure school climate. It is important to recognize that many of the factors of school climate are broader than those school factors listed above in which researchers identified factors that positively contribute to teacher success. In fact there are many things which contribute to overall school climate that are not considered by Marzano (2003) and others in their work to identify positive school factors.

Perkins (2007), the principle researcher for the CUBE Survey of Urban School Climate, noted in his report Where We Teach that several factors such as bullying, expectations of success, race, professional climate, parental involvement, safety, and
trust, respect, and an ethos of caring can have an impact on the teachers and their teaching. Findings from the most recent CUBE school climate survey (which involved over 4,700 teachers and administrators in 10 states) provided several key findings (Perkins, 2007). While many of those findings painted a positive picture of national school climates, some of the findings were concerning. The CUBE results reported that teachers and administrators felt that students were being bullied at least once per month in their classrooms. In terms of learning expectations, it was found that a significant number of teachers and administrators hold the view that students in their schools were not motivated to learn. Additionally it was reported that administrators have more confidence in students’ ability to do well on standardized tests than do their teachers (Perkins, 2007). These kinds of school climate factors can impact the ability of teachers to teach and students to learn. They can also impact a teacher’s ability to employ new methods learned at professional development.

Research from Grayson and Alvarez, (2007) and Skaalvik and Skaalvik (2008) linked school climate to teacher performance, job satisfaction, and levels of teacher burnout. Grayson and Alvarez examined teacher burnout through the factors of emotional exhaustion, personal accomplishment, and depersonalization. They found that several specific school climate factors such as outside of classroom interruptions on instructional time, teacher-student relations, teacher-administrator relations, and parent/community relationships all had a significant impact on the teacher. School facilities as a particular aspect of school climate were also been found to have an impact on teacher satisfaction (Schneider, 2003). In Schneider’s (2003) examination on the impact of school facilities, it was found that factors such as class size, air quality, thermal
comfort, and adequate science, art, and music classroom space were all shown to have an impact on teacher satisfaction and teachers’ career outlook.

The socio-economic status of the school, its stakeholders, and its surrounding community can also have an impact on school climate. Gamoran (2001), in his examination of schooling and education inequality, suggested that while the educational equality gaps between ethnic groups are narrowing (and he predicts will continue to narrow) they still represent significant issues for public schools. Garoman (2001) contended that socioeconomic factors and school quality and experience factors are the driving reasons for the racial inequality in education. These factors also impact the school climate and the teachers who operate within it.

Yet with all of the factors listed above, individual perceptions of those factors are also critically important. Skaalvik and Skaalvik (2008), in their examination of schools in Norway, noted that teachers not only exist in the school climate but they also perceive that climate in a variety of ways. In their examination of teacher perceptions of school climate and teacher burn out, they used four dimensions of teacher perception of school climate: Supervisory Support, Time Pressure, Relations to Parents, and Autonomy. However, in their findings they noted that these dimensions were not always correlated perceptually by the teachers; in other words, they did not always add up to single unified perception of the school climate (Skaalvik and Skaalvik, 2008). Different teachers perceived the same school differently. Given this, and the other factors noted above, it can be understood that while measuring school climate is useful for understanding its impact, it can also be difficult to do.
Measuring the School Domain.

Wilson and McGrail (1987), in their analysis of school climate measurement, stated that “there are no easy solutions to the problems involved in measuring school climate” (p. 2). There are an incredible number of factors which go into making up school climate and those factors are then filtered through the unique perceptions of those within that school climate (teachers, students, administrators, etc.). However, Wilson and McGrail do provide a framework for approaching the issue of measuring school climate. Two aspects of that framework are: 1) having a purpose in mind when measuring the school climate and 2) specifically determining the individuals from whom you are seeking an opinion. Purpose in school climate measurement will help guide the specific data collected and thereby increase the usefulness of the findings. Also, since school climates “exist because of the interactive chemistry of the humans who learn and work in that context”, it is important to consider from whom to collect the school climate data (Wilson and McGrail, 1987, p.11).

Freiburg (1998) concurred with the notion that school climate can be difficult to assess, but also emphasized the importance of doing so. Freiburg stated that “measuring school climate can help us understand “what was and what is, [so] that we can move forward to what could be” (p. 26, italics original). He suggested using multiple, targeted measures such as entrance and exit interviews of students, ambient noise checklists, and student concern surveys as effective measures to start assessing school climate. In this way he, like Wilson and McGrail (1987), opted for purposeful measurement of specific audiences when it came to assessing school climate. By doing so, one can avoid the problematic and overwhelming nature of such a variable concept like school climate.
Given the complexity of measuring the school climate and by extension the school domain along with the complicating factor of individual teacher perceptions of the school domain, it was important to use a wide variety of data collection measures. In this study teachers took the CUBE School Climate Survey. They were also interviewed about their perceptions of the school climate. School and classroom observations along with interviews of current and past school administrators were also conducted. Data from these collection methods contributed to an understanding of the factors of the school domain and their impact on each teacher’s Implementation Context.

Summary of the Implementation Context.

The three domains of teacher, classroom, and school have been shown through a variety of research to impact a teacher’s ability to implement skills learned in professional development. Personality traits, classroom resources, physical environment, and school leadership are just a few of the domain factors that can come to bear on an individual teacher’s implementation of skills. In this literature review a synthesis of relevant literature was presented concerning factors within those domains, how they may impact implementation of PD skills, and measures which were used in this study to quantify various aspects of the Implementation Context domains. The myriad of factors revealed in the literature all fall within particular domains of the conceptual framework of the Implementation Context. These factors are organized in Figure. 2.1 in correspondence to their particular domains within the conceptual framework of the Implementation Context.
Conclusion

In this review of literature I synthesized a wide variety of research about the best practices for professional development, impediments to professional development, literature about the implementation of change, and research on the individual domains of the Implementation Context.

During this study a professional development workshop following the best practices described by Showers, Joyce and Bennett (1987), Marzano (2007), Guskey and Yoon (2009) and others was provided to a small group of teachers. After the workshop was provided, a mixed methods approach was used in order to examine teacher perceptions of the Implementation Context factors and their impacts on the implementation of the PD skills. This approach was undertaken in an attempt to understand the impact of those factors on teachers’ lived experience of implementing strategies learned at a professional development workshop. In addition, five quantitative surveys were administered. Surveys of Tolerance of Ambiguity, Self-efficacy, Locus of Control, School Climate, and Classroom Climate were administered during the study. These measures were given to further aid in the understanding and analysis of the three domains of the Implementation Context.

In the next chapter of this dissertation, Methodology, I will provide information about the data sources, data collection methods, and the research tradition in which this study was grounded. I will also provide selection criteria of the study participants as well as for my data collections methods and quantitative measures.
Implementation Context: Domain Factors

- Leadership/Vision
- Socioeconomic factors
- Support for PD
- School Purpose
- Physical Condition
- Community Support

- Students
- Room/Class Size
- Class resources
- Physical condition
- Interpersonal interactions

School Factors

Classroom Factors

Individual Teacher Factors

- Teacher Knowledge/Skills
- Conceptual flexibility
- Sense of Efficacy
- Self-concept
- State of professional growth

Fig. 2.1
CHAPTER III: METHODOLOGY

The purpose of this research was to examine teacher perceptions of the factors of the Implementation Context. This study attempted to provide an understanding of the impact of those factors on the lived experience of teachers implementing strategies learned during a professional development workshop. The Implementation Context was the conceptual framework through which data in this study was analyzed. The conceptual framework of Implementation Context was derived from the external factors – teacher, classroom, and school – which have been found to have an impact on the implementation of professional development (Marzano, 2003; Showers, Joyce, and Bennett, 1987).

This study examined teacher perceptions of the Implementation Context and its factors which impacted implementation. I began this study by providing a group of six teachers from CHOICE (grades 3-5) with a professional development workshop on cooperative learning strategies. I then monitored their levels of implementation of those strategies for six months. The workshop itself was conducted by a professor of education from a local state university. He was an expert in the area of cooperative learning strategies and had provided the training to dozens of teachers. The workshop topic was selected because of the high level of applicability of the cooperative learning strategies to the participants grade level, their school’s philosophy, and for ease with which implementation of the strategies could be observed.

I used a mixed methods approach in this study employing qualitative interview and observation techniques as well as quantitative survey measures. Over the course of six months I studied the participants’ strategy implementation and their perceptions of their implementation. I hoped to understand the factors which impacted their
implementation of the strategies, to gauge their levels of their implementation, and ascertain their perceptions of the factors that impacted their implementation and their Implementation Contexts. When analyzing the data I hoped to understand what indicators of high and low levels of implementation might be present among the participants’ data.

I wanted to conduct this study because of my interest in the factors that impact the implementation of professional development and to more deeply understand what might be done to promote higher rates of implementation and thereby increase teacher quality. I hope that the recommendations for practice that I was able to make based on this study will help school administrators and professional development providers help their teachers increase levels of PD implementation.

**Research Questions**

The research questions for this study were:

- What are teacher perceptions of the Implementation Context factors that facilitate or inhibit implementation of skills learned during PD?

- What are teacher perceptions concerning the convergence of the Implementation Context factors and the impact of that convergence on their ability to implement skills learned during PD?

- What can be understood about the Implementation Context from the commonalities and differences of the teachers’ stories about their lived experience of PD implementation?
Chapter Overview

This chapter on methodology includes several elements. The first section describes the research design and research tradition in which this study is grounded. Next, a description of the research setting and context is provided. A description of the research sample and data sources follows. The instruments and procedures utilized in this study are also described; specific instruments that were used are provided in the appendix. A section is included which outlines the procedures and content used in the professional development workshop. The data collection and data analysis sections provide descriptions of the methods by which data was obtained and how the data was analyzed. The chapter concludes with a description of the researcher’s role and a summary of the chapter.

Research Tradition.

The purpose of my study was to understand the essence teachers’ implementation of strategies learned during professional development and the factors that impacted that implementation. My study was guided by the Phenomenological approach. Phenomenology is a qualitative research tradition concerned with discovering the essence of a concept or phenomena. The methods and orientation of this tradition were quite suited to helping me answer the questions of my study. My research questions focused on examining the experiences that teachers have in attempting to implement professional development strategies in their classrooms and examining the factors that promote or inhibit high levels of implementation.

The Phenomenological tradition assumes that reality and meaning are not objective things that are “out there” but rather they are intimately connected with
people’s understanding of reality and the phenomenon being examined (Shram, 2006). With this in mind my research questions also targeted teacher perceptions of the factors that impact implementation of PD and the perceptions that teachers have about how those factors impact their own levels of implementation.

The Phenomenology tradition is also aligned with my intellectual orientation of the Interpretive paradigm (Shram, 2006). This paradigm espouses the notion that knowledge and understanding about the world is constructed as people interact with one another (Shram, 2006). This understanding of how knowledge is created shapes the role of the researcher not as one who is seeking empirical knowledge, but rather one who is interpreting multiple perspectives and constructs. The implications of this paradigm for my research were found in my selection of research participants and in the research methods I employed. A large portion of my data collection came from interviews as I attempted to capture (and then interpret) the multiple perspectives of teachers regarding their implementation of professional development techniques. In this way I used my intellectual orientation in the interpretive paradigm as a lens through which to interpret the data of my phenomenological study.

In a phenomenological study the researcher seeks to understand the “lived experience of a small group of people from the standpoint of a concept or phenomenon” (Shram, 2006, p. 79). Additionally, in the phenomenology tradition the researcher assumes that human behavior is understandable through the perceptions that groups have about their lived experience during a certain context or phenomenon (Shram, 2006). In the case of this study, I seek to understand the phenomenon of the implementation of professional development by teachers. The teacher interviews, surveys, and observations
of the school and classroom settings allow me to understand the human behavior of the phenomenon “in the context of {their} relationship to things, people, events, and situations” (Shram, 2006, p. 79).

Research Setting.

In this section I will describe the research setting, the sampling strategy used to select this setting, and the roles and relationships that I as the researcher had with the research site. This research project was conducted CHOICE Charter School. CHOICE is a small public charter school located in a large, diverse urban area in the southwestern United States. CHOICE was selected in a convenience sampling method. I had conducted professional development for teachers at various times at CHOICE over the previous eight years. Originally I had intended to also use participants from a local private and public school site. However, due to the time constraints of the study and the unavailability of other participants, this study was altered to be a single site study.

CHOICE Charter Elementary serves students in grades K-8 with approximately 70 students per grade and 400 students in the elementary program. The school is dedicated to teaching all students in an inclusive environment. Approximately 15% - 20% of the students at CHOICE Elementary have been identified with a disability of some kind. Sixty-five percent of the students are typically developing and approximately 15% of the students are high achieving or gifted. All of the classes are fully inclusive at CHOICE which means there are no traditional “pull-out” programs for either students with disabilities or students who have been identified as gifted. The classes at CHOICE are taught using a co-teaching model between general education and special education teachers. This along with their innovative paraprofessional, teacher education, and
family programs has made CHOICE one of the most successful and highly lauded charter schools in the region.

CHOICE Institute, which created CHOICE Charter School, was originally started in 1987 as a U.S Department of Education funded project used to create a model of inclusive education. After the three year funding period of the project ended, a non-profit organization was created to continue operating the program. The Institute program then grew from a preschool program to an infant and toddler program added in 1991 to an elementary school program in 2001 and finally a middle school program added in 2003. Throughout this growth the principles of inclusive education remained the bedrock philosophy and driving force behind the educational and institutional decisions made by the CHOICE Institute and its charter school.

*Role at Research Site.*

At CHOICE Charter School I had acted as a professional development provider and consultant since 2003. While I was involved with the school for many years prior to the study, my presence had largely been as an outsider. However, during my research I still attempted to mitigate any impact that my status as consultant/expert might have had in my role as researcher. I did not deliver the study’s professional development training myself and teachers selected from CHOICE had not previously participated in professional development that I had facilitated.

Prior to the workshop I asked the interim director to help me in advertising and recruiting potential participants for the study. After the PD workshop was completed I tried to establish the trust and respect necessary for conducting this kind of qualitative research in which knowledge and understanding is created thorough personal interactions
(Shram, 2006). I did this by creating a sense of safety for the participants by assuring them that their participation was voluntary and that their answers would remain anonymous. Additionally, I was extremely respectful of teacher schedules when arranging for observations and interviews and tried to treat each teacher as a full participant in this research process.

**Research Sample and Data Sources**

*Interviews.*

Teacher interviews were the major data source used in this study. I conducted two, forty minute interviews with each teacher. The first round of teacher interviews was held during the third and fourth weeks after the professional development workshop. The second round of interviews was held during twenty-second and twenty-fourth weeks of the study. Second interviews were conducted after each teacher’s second classroom observation. During the second interview teachers were asked about the variety of factors that promoted or inhibited their ability to implement the strategies they had learned during the PD workshop. Each teacher was also asked to rate their levels of implementation during the six month period of the study. Additionally, in an attempt to gauge the recentness of teacher implementation, participants were asked to report how many times they had implemented any of the strategies for the most recent two week period. The teacher interviews informed my understanding of each teacher’s perceptions of a variety of factors from across all three domains of the Implementation Context and their perceptions about which domain of the Implementation Context was most impactful on their personal level of implementation.
I also conducted individual interviews with the interim Executive Director at CHOICE as well as CHOICE’s founding director. These administrator interviews helped me gain a deeper understanding of the school domain at CHOICE. I was able to gain valuable information about the school’s history and culture as well as their philosophy regarding professional development. Since this was a single site study these background gathering interviews were critical in helping me more clearly understand the school domain of the teachers’ Implementation Contexts.

Surveys.

In this study I used a variety of surveys to collect data about the participants. The first two surveys were tied directly to professional development workshop. The first, a pre-workshop survey (an anonymous online survey), was administered with the results provided to the professor who conducted the workshop. He utilized this data to customize the workshop to meet the needs and experience levels of the participants. This process was done in accordance with the best practices for professional development. Literature indicated that conducting a pre-workshop survey can promote successful PD by increasing buy-in and engagement on the part of the participants (Tate, 2009).

The second survey, the post-workshop survey administered at the end of the PD, was used to provide me a sense of how well the workshop was received and to indicate if I could proceed with my study under the assumption that the participants liked and intended to use the strategies they had learned. The data from this survey showed that all of the participants rated the workshop very favorably and identified in their survey answers ways in which they could imagine using the strategies in their classrooms.
Three personality surveys were also used during this study. These personality surveys were administered on the day of the PD workshop so that this data regarding participants’ personality traits could be collected prior to teacher attempts at implementation. These personality surveys were used in order to rate specific factors found in the teacher domain of the Implementation Context for each participant. Based on the findings of Showers, Joyce, and Bennett’s (1987) stating that self-efficacy and conceptual flexibility were important individual teacher factors with regard to how much teachers benefit from professional development, the following three personality trait surveys were administered to the participants: The Tolerance of Ambiguity scale (Budner, 1962), a Teacher Self-efficacy scale (Gibson and Dembo 1984), and an Internal Locus of Control Scale (Duttweiler, 1984). These surveys were use in an effort to better understand the teacher domain of the Implementation Context and the results were analyzed to see if certain factors or patterns of factors correlated to high or low levels of implementation.

A survey about factors within the classroom domain was also used. Participants answered the teacher version of the My Classroom Inventory- Short Form (MCI-SF) classroom climate survey developed by Sink and Spence (2007). They completed this survey at the conclusion of their first interview. As noted in the Review of Literature, the quality of student and teacher interactions plays a major role in classroom climate (Grayson and Alvarez, 2007; Sink and Spencer, 2005; Schmuck and Schmuck, 1978, Walberg and Greenberg, 1997). In order to capture the dynamics of classroom climate the MCI-SF survey focuses on measuring the types and qualities of student and teacher interactions in the classroom. This survey was specifically designed for the elementary
teachers, so it was well suited to capture the participants’ perceptions of their classroom climate.

A final survey about school climate factors was completed by the teachers at the conclusion of their second interview. The survey I used in this study was the 2006 Teacher Version of the American School Climate Survey. This survey had previously been used with thousands of teachers and school administrators in the CUBE Survey of Urban School Climate (Perkins, 2007). The survey was designed to capture perceptions about teacher-student relations, teacher-administrator relations, and parent/community relationships. The version used in my study was written specifically for classroom teachers. I used the data collected from this survey, in conjunction with other observational and interview data about the school climate to understand the school domain and the impact of the school domain on teachers’ ability to implement the strategies they learned during the professional development workshop.

**Observations.**

I also conducted two classroom observations of each participant. In both observations I assessed implementation of strategies from the PD workshop that the participants used during the observation and any “best practices” for cooperative group work used which had been presented during the workshop. I also produced detailed field notes during these observations which served provide additional context for the understanding of the classroom and school domains for the participants.

**Research Sample**

Six teachers from CHOICE Charter School participated in this study. Two teachers from grades 3rd, 4th, and 5th were selected so that each participant in the study
had a grade level partner. The teachers from third and fifth grades were all general education teachers. The fourth grade team consisted of a general education teacher and her special education co-teacher. The participants were volunteers; however, with the help of the site administrator, I used a criterion sampling methods in selecting the volunteers for this study. I informed the administrator that I only wanted participants in the elementary grades 3-5 and only teachers who had nine or fewer years of experience.

I selected these criteria for several reasons. First, the topic of the professional development workshop, cooperative learning methods, are teaching strategies often employed in the elementary grades. Therefore I anticipated that the teachers would find the PD workshop applicable to their practice. Second, by sampling teachers with nine or fewer years of experience I would examine the implementation patterns of teachers who did not yet employ the expert behavior often displayed by practitioners with ten or more years in a field. Thus my sampling criteria allowed me to focus my research inquiry on the group of teachers who would be most likely to implement the types of strategies taught at the professional development workshop provided and who are, because of their relatively new status in the field, most likely benefit from and utilize strategies learned during professional development. This group provided me an ideal sample to study the lived experiences of teachers attempting to implement methods learned in a professional development workshop.

During my research there were several ethical issues that I kept in mind and tried to mitigate for in order to protect my subjects. These ethical considerations included: 1) Protecting teachers from any negative repercussions from lack of implementation, 2) Limiting the time investment on the part of the teachers for both their sake and the sake
of their students, and 3) Protecting for anonymity in the future when I share the results with schools and districts.

During this research I needed to be certain that teachers would not suffer any negative repercussions which might come from the lack of implementation of the learned strategies. I informed the teachers during the PD workshop that there would be no negative impacts on their practice from their participation in the study. I made clear that the study was trying to examine their experience of implementation as opposed to any set level or standard of implementation. Additionally, I worked with the administrators at CHOICE to be certain that they did not negatively respond to or admonish teachers who did not attain high levels of implementation. I also emphasized that they should not play an evaluative role with the teachers in relation to the study.

It was also important for me protect the teachers’ time during the research. Participants were asked to attend a professional development workshop, complete a pre-workshop questionnaire, be observed twice, complete five surveys, and participate in two individual interviews. This was a great deal to ask of volunteer participants. I work with the teachers to schedule all interviews and observations at the convenience of the participant. Additionally, the workshop itself was scheduled to coincide with a previously scheduled professional development day for CHOICE charter school. These considerations were made to ensure that the participants could participate with no undo burden and to ensure the quality of their instruction remained high for their students.

Finally, it was important for me to plan for the ethical consideration of anonymity. CHOICE Charter School, though small, is locally recognizable. It was important for me to write this dissertation in a manner that preserved the anonymity of
my sample group. Additionally, in the future when I present my results to interested parties such as a local school district or to the teachers at CHOICE, it will be important that I guard the identities of the participating individuals by carefully examining and redacting any personally identifying data.

This research plan was approved by the IRB at California State University, Northridge in the fall of 2010. Additionally, it was also approved by the research review committee of the large local public school district because teachers from a district-run public were originally supposed to be part of the sample. These approvals indicate the strong concern and care for human subjects with which this study was designed.

**Instruments and Procedures**

In this section the instruments and procedures used during data collection for this study are described in detail.

*Surveys.*

The pre-workshop survey as noted previously was administered electronically via Survey Monkey. The participants answered answer demographic questions concerning their years of teaching and educational background. The data collection about their prior experiences and expectations for the workshop was used by the workshop facilitator to customize the workshop in accordance with the best practices cited in the professional development literature (Tate, 2009).

On the day of the professional development workshop participants were asked to complete the Tolerance of Ambiguity scale (Budner, 1962), the Teacher Self-efficacy Scale (Gibson and Dembo, 1984) and an Internal Locus of Control Scale (Duttweiler,
1984). The answers to these questions were used to ascertain each participant’s individual proclivity for change and their ability to effect change.

The post-workshop survey was provided at the conclusion of the PD workshop. The survey was a standard paper and pencil survey administered in order to capture teacher impressions about the effectiveness of the workshop presenters, the workshop content, and any current plans they had about implementation of the strategies they learned at the workshop. These data collection methods were appropriate because they helped capture any pre-implementation factors that existed for the participants (Tate, 2009). They also helped identify individual factors that could have played a part in the teacher domain of their Implementation Context (Marzano, 2006; Showers, Joyce, and Bennett, 1987).

*Observation Protocol.*

During classroom observations I used a protocol which listed the specific cooperative learning strategies that were taught at the professional development workshop as well as the guiding elements for effective cooperative group work (Bennett, 2003; Johnson and Johnson, 1974; Marzano, 2007). During the observations I recorded whether or not cooperative group strategies were used, and also recorded whether or not the strategies used followed the guidelines for effective group work (Johnson and Johnson, 1974). I used the protocol in order to avoid cursory observations of strategies that might have looked like group work, but in fact were not fully implemented strategies. These observations helped contextualize data gained during the teacher interviews with respect to the implementation of learned strategies and teacher perceptions of their implementation.
Interviews.

The interviews for both teachers and administrators were semi-structured interviews (Miles and Huberman, 1994). The teacher interviews followed a series of prepared questions designed to guide the teachers in telling their stories about the implementation of the strategies they learned during the professional development workshop. The administrator interviews were conducted to help capture school climate factors that existed in relation to professional development implementation at CHOICE Charter School (Miles and Huberman, 1994; Perkins, 2007).

Professional Development Workshop Description

During this study participants received a four hour professional development workshop on cooperative learning strategies. The workshop was held at CHOICE Charter School on the first Tuesday of November during an afternoon previously scheduled professional development. The cooperative learning strategies featured in this workshop were taken from the work of Dr. Barrie Bennett (2003). Four cooperative strategies were taught to the teachers during this workshop – Think, Pair Share; Four Corners; Three Step Interview; and Placemat. In these cooperative strategies students are placed in a variety of group configurations and are required to discuss and collaborate to achieve a common group goal. These cooperative group strategies were chosen because they are easily observable and are able to be implemented across grade levels and content areas. Throughout the workshop principles for effective professional development as outlined in the Review of Literature were followed (Guskey and Yoon, 2009; Hill, 2009; Showers, Joyce, and Bennett, 1987; Tate, 2009). The workshop was presented in an engaging manner in which participants were asked to not simply sit and learn about the
strategies but to utilize the cooperative learning strategies being presented to accomplish tasks with the workshop. This structure created and engaging and dynamic learning opportunity for the participants.

Since delivering a successful professional development experience was a key component to this research study, providing some verification that it indeed happened was an important part in this research. Guskey’s (2002) work provided a guide for this portion of the data collection and analysis in this study. With Guskey’s evaluation levels in mind, I captured initial information about the participants’ reactions and learning after the PD workshop was provided using the post-workshop survey. Participants all rated the workshop effective or highly effective on all factors rated on the post-workshop survey and identified potential ways in which they could use what they had learned in their classrooms. After the workshop teachers were offered the opportunity to follow-up with the PD facilitator either in person, on the phone, or via the internet to obtain support or clarification to promote their implementation. The follow-up sessions were offered in keeping with the literature on the best practices of professional development; however, the follow-up was not intended to be so intensive that the context of implementation was changed. None of the participants took advantage of the offer and did not reach out to the PD facilitator for additional support after the workshop.

**Data Collection**

Data collection methods used in this study included a pre-workshop teacher survey, a post-workshop teacher survey, teacher interviews, classroom observations, and site administrator interviews. The timeline for data collection is listed below:
1. Participants selected and informed consent obtained (October 2010)
2. Pre-workshop survey administered via email (October 2010)
3. Professional Development workshop, personality surveys, and post-workshop survey administered (November 2010)
4. Initial teacher interviews conducted (Nov. – Dec. 2010)
5. Classroom observation (Jan. 2010 – April 2011)
6. Site administrator interviews (Jan. 2010)
7. Final teacher interviews (March – May 2011)

Pre-workshop survey.

The pre-workshop survey included three basic parts: demographic information questions, questions concerning the teachers’ level of knowledge about cooperative learning strategies, and questions concerning what aspects of cooperative learning methods they would like to learn more about. The demographic information was used during data analysis to see if any demographic data correlated to themes or patterns that emerged from survey, interview, or observation data.

The information collected with respect to cooperative learning strategies was used to help guide the professional development workshop. By surveying the participants in advance the presenter was better able to target the instructional needs of the participants.

Personality Surveys.

The Tolerance of Ambiguity Scale (Budner, 1962), the Teacher Self-efficacy Scale (Gibson and Dembo, 1984), and an Internal Locus of Control Scale (Duttweiler, 1984) were administered on the day of the professional development workshop. All three of the individual personality traits examined in these surveys deal with an individual’s ability to
initiate, tolerate, and mediate change. Since professional development is inherently about changing practice, these three measures were selected to identify certain teacher domain factors that could impact a teacher’s ability to change and through that change begin implementing a new skill in their classroom. Data from these three measures were examined during data analysis to more clearly understand factors within the teacher domain of the Implementation Context and to see if correlations among these personality traits and levels of implementation existed.

Post-workshop survey.

The post-workshop survey also contained two main elements. The first element asked participants to rate the value of the workshop elements on a Likert-scale. Using the Likert-scale responses participants rated the workshop content, workshop presenter, and the value of the information provided during the workshop. In the second component of the post-workshop survey, participants were asked to provide a “3, 2, 1” feedback response on the workshop as a whole. The “3, 2, 1” feedback format is based on the comprehension strategy suggested by Raymond Jones (www.readingquest.org). In this feedback format participants listed three things they learned in the workshop, two ways thought they could use what they learned in their role as teachers and one question that they still had about the content of the workshop. The post-workshop data was collected to validate that the participants had responded positively to the workshop, felt the content presented was valuable, and could hypothesize about how they might implement what they had learned. As noted previously, all participants rated the workshop, its presenter, and its content very highly and also identified ways they could implement what they had learned.
Teacher Interviews.

Two teacher interviews were conducted during data collection. The initial teacher interviews took place between the second and fourth weeks after the professional development workshop. The initial interviews were semi-structured interviews which were conducted in the classroom of the teacher. In these interviews I established a sense of what the teachers felt they gained from the professional development experience and asked whether or not they had implemented the strategies at that point of the study.

The second interview, also semi-structured, took place after all other research study activities had concluded. In the second interview I probed the teachers’ perceptions about their level of implementation, about the factors that facilitated and inhibited their implementation, and other details about the Implementation Context (i.e. school, classroom, teacher) in which their implementation took place. At the conclusion of this second interview, I asked the teachers to rate their overall implementation over the course of the study - high, medium, low - and to report the number of times they had implemented the cooperative learning strategies over the most recent two week period. Data from both interviews were analyzed for potential themes throughout the participants’ “lived experiences” implementing the strategies learned during the professional development workshop (Shram, 2006).

Observations.

I also conducted two classroom observations of the participating teachers. These classroom observations were scheduled at the teachers’ convenience and all observations were conducted after each teacher’s initial interview. During the observations I used the observation protocol which listed the four cooperative group strategies as well as
Johnson’s Five Basic Elements for Effective Group Work; all of these were taught during the professional development workshop (Johnson and Johnson, 1974). By including these items on the observation log, I was able to note the implementation of the four specific strategies and the teachers’ fidelity to effective implementation of the strategies. Data collected during both observations were compared across the participants with respect to levels of implementation. Observation data was also used to provide context for the classroom domain of each teacher and to validate teacher reporting with respect to strategy implementation.

Administrator Interviews.

I conducted two administrator interviews, one with the founding director of CHOICE Charter School and one with the Interim Director at CHOICE. There were two main purposes for conducting these interviews. First, I wanted to gain a better understanding about the school domain factors related to professional development. Second, I wanted to ask about the administrators’ leadership roles and how their roles aligned with their understanding of the purpose of their school, the school’s philosophy regarding professional development, and more broadly their leadership dispositions toward school change. These interviews ultimately helped inform me about the school’s climate and culture and how those elements impacted the Implementation Contexts of the participants.

Purpose of methods

My study was a mixed methods study, yet it relied heavily on the methods of a qualitative approach. Teacher interviews, administrator interviews, open-ended narrative survey questions, and classroom observations are all data collection methods consistent
with the qualitative methods of the phenomenological approach to research (Shram, 2006). These methods were employed so that I could provide a rich and textured, qualitative account of the “lived experience” of the participants context for implementation. However, in addition to this implementation story, I also wished to mine some quantitative data that might further sharpen the focus of the potential main factors inhibiting or promoting implementation for each teacher. In order to do this I collected quantitative survey data such as demographic information, tolerance-intolerance of ambiguity scores, and Likert-scale scores concerning the presentation and value of the workshop (Shram, 2006).

Data Analysis

The data analysis phase of this research employed the qualitative analysis approaches of preliminary data analysis, thematic data, and interpretation of data (Grbich, 2007). I began preliminary data analysis with the participant responses on the pre-workshop survey. I continued preliminary data analysis as each new phase of data collection began (e.g. post-workshop survey, interviews, and observations). Other data analysis in this study included observer comments/field notes, analytic memos and the development of preliminary themes based on the interview and observation data (Grbich, 2007). These methods were employed in the phenomenological tradition “to understand and convey the essence or central meaning of a particular…phenomenon” (Shram, 2006, p. 78). In this study the phenomenon examined was the teachers’ experience in implementing the strategies they learned at the professional development workshop.

The process of thematic data analysis began after all phases of data collection were complete. The data used in the thematic analysis were the teacher interviews and
classroom observations. Survey data from the personality, classroom, and school surveys were compiled and then analyzed in connection to data and themes identified from the interview and observation data. In Chapter Four the themes of both the quantitative and qualitative data are contextualized. After providing an analysis of these sets of data, I then provide an analysis of all of the data through my study’s conceptual framework of the Implementation Context.

Description of analysis.

Each phase of the data analysis included specific activities for each data collection method. A description of the analysis for each method across analysis phases is provided in the table below.

<table>
<thead>
<tr>
<th>Data Collection Method</th>
<th>Preliminary Data Analysis</th>
<th>Thematic Data Analysis</th>
<th>Interpretation of Data</th>
</tr>
</thead>
<tbody>
<tr>
<td>Pre-workshop survey</td>
<td>Aggregated data into demographic groups</td>
<td>Described patterns and relationships in survey data as they relate to interview themes</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Customized workshop presentation</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Post-workshop survey</td>
<td>Revised interview questions based on 3, 2, 1 responses and pre-survey responses</td>
<td>Examined workshop presentation ratings for patterns</td>
<td>Linked patterns and issues from observations to the themes from teacher interviews</td>
</tr>
</tbody>
</table>
| **Teacher Interview by Researcher – Initial** | Recorded interview and any post interview comments from researcher  
Developed analytic memos about interviews | Transcribed interview and field notes | Linked themes to patterns and issues found in the survey data and Tolerance-Intolerance of Ambiguity scale.  
Linked themes to implementation contexts of school/district, classroom, and individual |
| **Classroom Observation by Researcher** | Developed Field notes  
Examined observation notes for patterns  
Develop analytic memo and field notes for emerging issues and themes in classroom observation | Transcribed observation field notes and observation form | Linked patterns and issues from observations to the themes from teacher interviews |
| **Classroom Observation by Administrator** | Examined observation form for patterns  
Developed analytic memo and field notes for emerging issues and themes in classroom observation based on notes from site administrator | Transcribed observation field notes and observation form | Linked patterns and issues from observations to the themes from teacher interviews |
| **Administrator Interview by Researcher** | Recorded interview and any post interview comments from researcher  
Developed analytic memos about interviews | Transcribed interview and field notes | Linked patterns that emerge in administrator comments to the themes of the teacher interviews.  
Linked patterns to the issues of the school/district context of implementation. |
**Teacher Interview by Researcher – Final** | Recorded interview and any post interview comments from researcher | Transcribed interview and field notes | Linked themes to patterns and issues found in the survey data and Tolerance-Intolerance of Ambiguity scale. Linked themes to implementation contexts of school/district, classroom, and individual

---

**Analysis through quantitative data.**

The surveys provided before and after the professional development workshop required participants to answer questions which yielded a variety of quantitative data. The pre-workshop survey included demographic questions including age, gender, and college preparation. During the workshop the three personality trait scales were administered: The Tolerance-Intolerance of Ambiguity Scale (Budner, 1962), the Teacher Self-efficacy Scale (Gibson and Dembo, 1984), and an Internal Locus of Control Scale (Duttweiler, 1984). The post-workshop survey included a Likert-scale questionnaire requiring participants to rate their perceptions of the workshop content, its value to them and their students and their perception of the workshop presenters. All of the data collected using these survey measures represented the quantitative data of this study. This data was analyzed individually and compared across all of the participants in the study and weighed against the levels of implementation for each participant.

**Analysis through the Implementation Context.**

In this study the Implementation Context served as the conceptual framework through which to examine the school domain, classroom domain, and teacher domain factors and how they converged to impact the implementation experience of each teacher.
The data collected through all of the data collection methods used were analyzed for patterns and themes through the lens of the Implementation Context. In Figure 3.1 the data collection methods used in this study have been linked to the conceptual framework of the Implementation Context. Figure 3.1 is provided to highlight the links between the data collection methods used and the particular domains in the Implementation Context from which they will presumably obtain data. Beyond this however, it became clear during the data collection that there is significant complexity in the Implementation Context and each teachers’ understanding of their own context. I discuss this complexity in more detail in Chapter Five.
Implementation Context:
Measuring the Domains

- Teacher Interviews
- Classroom Observations
- Administrator Interview
- School Climate Survey

- Teacher Interviews
- Classroom Observations
- Administrator Interview
- Class Climate Survey

- Workshop Surveys
- Teacher Interviews
- Classroom Observations
- Personality Surveys

Fig. 3.1
Data Analysis Schedule.

All data was prepared and analyzed by the researcher. A schedule of the data analysis is provided below:

1. Pre-workshop survey and personality trait surveys aggregated. Preliminary analysis. (November. 2010)
4. Classroom observations transcribed. (March - May. 2011)
5. Preliminary analysis observations (March - May. 2011)
6. Site administrator interviews with researcher transcribed (April - May. 2011)
7. Thematic analysis of class observations and administrator interviews (June – September 2011)
8. Final teacher interviews transcribed (June - September. 2011)
9. Thematic analysis of teacher interviews (October - December. 2011)
10. Interpretation of data (January – March. 2012)

Purpose of Analysis.

All of the data was analyzed for themes and patterns in order to help tell the story of the participating teacher attempts to implement new practice. The data was also analyzed to present the combination of factors within the Implementation Context which impact rates of PD implementation. Further, through my analysis, I tried to more clearly describe the Implementation Context and the factors therein that influence the phenomenon of teacher implementation of teaching strategies learned during a professional development workshop. Finally, I intended the analysis to point toward
specific recommendations for PD providers and school administrators in order to support them in promoting higher levels of implementation among teachers.

**Researcher Role**

I played multiple roles in this research study. Several of these roles were in direct relation to the design and execution of the study. In addition, at the research site I played two other roles; one of the roles I played at CHOICE was pre-existing to the study and one of my roles at CHOICE changed during the time of the study.

In designing the study, I dictated the content of the professional development workshop that the participants attended, and I consulted and advised the facilitator who delivered the professional development workshop. During the data collection of the study I played the role of observer and interviewer by conducting classroom observations and multiple interviews with the teachers and administrators involved in the study. During data analysis, I played the role of interpreter while interpreting the data collected from the observations and interviews. I played this role in an attempt to understand the essence of the PD implementation experience of the teachers involved in the study. In sum, with regard to the study itself, I played the role of PD designer, consultant, data collector, and data interpreter.

At the research site, CHOICE Charter School, I also had roles that I needed to navigate as the researcher of this study. Prior to undertaking the study I had the role of professional development provider at CHOICE. As was discussed earlier in this chapter I had to be mindful of this role when selecting participants for the study as to mitigate any impact that existing role might have had on the study results. Then, after the data collection phase of this study was complete, my role with respect to the research site
changed. In the spring of 2012 I became a candidate for and accepted the position of Director of CHOICE Charter School. It was a role change which occurred after data was collected; therefore, I do not believe it had an impact on the results provided to me by the participants. That said, data analysis was still taking place at the time of and after this role change. I do not believe, however, that the data analysis was significantly impacted by this role change since the interview data, observation data, and participant reporting of implementation levels pre-dated my role change.

**Conclusion**

Research indicates that the three domains of school, classroom, and teacher, which are external to professional development workshops, have an impact on a teacher’s ability to implement strategies learned during PD (Marzano, 2003; Showers, Joyce, and Bennett, 1987). For the purposes of this study I organized these domains into the conceptual framework of the Implementation Context. Using a mixed methods approach grounded in the research tradition of phenomenology (Shram, 2006), I examined teacher perceptions of the factors of the Implementation Context. It is my contention that a clearer understanding of the effects of the Implementation Context on teachers could aid in improving the rates of implementation of the skills learned during professional development. In turn, higher rates of implementation could yield higher quality teaching and improved learning outcomes for students. Improving student achievement outcomes through a better understanding of the factors of the Implementation Context could be extremely valuable for schools struggling to improve their achievement results and to comply with No Child Left Behind.
In my study I provided six elementary school teachers (grades 3-5) from CHOICE Charter School with a professional development workshop on cooperative learning strategies. After the workshop I observed the teachers in their classrooms on two different occasions, and I conducted two follow-up interviews. Data was also collected using pre- and post- PD workshop surveys, an administrator interview, classroom climate and school climate surveys, and three different individual personality surveys. All of the data was then analyzed to better understand teacher perceptions of the Implementation Context, how those perceptions impacted implementation, and to understand the impact of the various factors within the three domains of the Implementation Context on the implementation of skills learned during professional development.

In the next chapter the findings of this study are presented. Qualitative and quantitative findings will be presented concerning the teacher, classroom, and school domains. Findings regarding the Implementation Context are also presented. In addition, cases studies of three of the study participants are also included. These case studies provide detailed examples of the “lived experiences” of teachers who implemented at high, medium, and low rates. In Chapter Five the findings are analyzed and recommendations for school based practice as well as recommendations for future research are presented.
CHAPTER IV: FINDINGS

Millions of dollars and thousands of hours are spent each year in American schools on professional development (PD). Despite the concerted effort and considerable resources afforded to professional development teachers report that these professional development activities have little real impact on their classroom practice. Considering these PD activities are meant to improve the quality of teacher instruction and thereby enhance student learning, it is vital that the education community have a better understanding of why teachers frequently do not implement what they learn during professional development.

This study was undertaken to help understand the PD implementation process, the various contexts for teacher implementation, and to provide a better understanding of the PD implementation stories from the perspective of classroom teachers. Specifically in this study I hope to provide a better understanding of the combination of factors which impact the context – the Implementation Context - in which teachers try to implement strategies they learn during professional development workshops. I designed this study in order to answer the following questions about the Implementation Context:

- What are the teacher perceptions of the Implementation Context factors that facilitate or inhibit implementation of skills learned during PD?
- What are teacher perceptions concerning the convergence of the Implementation Context factors and the impact of that convergence on their ability to implement skills learned during PD?
• What can be understood about the Implementation Context from the commonalities and differences of the teachers’ stories about their lived experience of PD implementation?

To help me answer these questions, I interviewed, surveyed, and observed six elementary teachers who participated in a PD workshop. The study participants were all from CHOICE charter school, all had fewer than nine years teaching experience, and all were teachers of grades three through five. The professional development workshop provided for this study was held during the first week of November. In that workshop the participants were trained on four types of cooperative learning strategies, cooperative group management strategies, and best practices for designing cooperative group work. At the time of the workshop participants also completed three surveys about specific personality characteristics (i.e. locus of control, tolerance for ambiguity, and self-efficacy).

Two to four weeks after the professional development workshop I conducted initial interviews with each teacher. Then over the next six months I observed each teacher twice, interviewed the current school director of CHOICE, interviewed the founding director of the school, surveyed the six workshop participants about their school and classroom climates, and interviewed the teacher participants a second time after their classroom observations had been completed.

In this chapter on findings I will describe the data collected and provide an analysis of that data in order to identify themes and trends which emerged in each of the three domains of the Implementation Context – Teacher, Classroom, and School. Each domain will be examined individually and then a fourth section entitled Implementation
Context will provide a description of how these three domains interacted with one another to create each teacher’s own unique context for implementation. Finally in order to provide a rich description of lived experiences by the classroom teachers, case studies of three of the participants will be provided. The three case studies were selected on the basis of the teachers’ level of implementation (low, medium, and high) and will illustrate the Implementation Context of each of these teachers as they attempted to implement what they had learned in professional development.

**Teacher Domain**

During this study the Teacher Domain of the Implementation Context emerged as very impactful within the Implementation Contexts of the participants. Five of the six teachers reported that the Teacher Domain was either the most important or co-most important domain affecting their levels of implementation. What stood out was that while the majority of the participants stated that they as the teacher had the most impact on implementation, yet the reasons they gave for this impact varied widely. Some participants stated that their impact as a teacher was a function of their personality or their ability to adapt to change. Others cited their years experience in teaching at CHOICE or teaching a certain grade level as impactful, and one participant stated that their role as a special educator had been the dominant factor in their Teacher Domain and their implementation story.

This multiplicity within the Teacher Domain points to the complexity of the domain itself and how individuals interpret their own role in the events of their classrooms. Some participants’ answers indicated that they were the driving force in their classrooms and that by the force of their personality they shaped the climate of their classroom and
made changes when they saw fit. Others seemed to indicate that they were victims of old habits or previously planned curriculum and that by their own resistance to change they impeded implementation. All of these answers seemed to connect to either elements of the teachers’ *personality*, their *experience* as teachers, or their *role* within the school. In this section on the Teacher Domain I will examine the components of the domain and identify the themes that emerged within the data.

*Teacher Personality.*

Participants completed three personality surveys on the day of the professional development workshop. These surveys targeted the personality traits of Self-efficacy, Locus of Control, and Tolerance of Ambiguity. These three traits were chosen because of their connection to tolerating change, affecting one’s environment, and feeling responsible for the events in one’s surroundings. I administered the surveys hoping that trends might emerge indicating certain personality traits were supportive of the implementation of new ideas or practices or that the reverse would emerge indicating a resistance to implementing new strategies in the classroom.

However, the results of the surveys made it difficult to draw conclusions. Given the small sample size, no statistical assertions could be made regardless of the results, yet among the six participants patterns did not emerge. The results did not seem to indicate that a certain score on any of the three personality surveys would correlate to a certain implementation outcome. Provided a larger sample size upon which a statistical analysis could be conducted perhaps correlations might emerge. In this study indications that such a correlation might occur did not exist.
For example, Ms. Fields had a high level of implementation and yet scored the lowest on the Tolerance of Ambiguity scale (see Fig. 4.1) relative to the other participants. It would be reasonable to assume her low score would mean intolerance for change and therefore that her level of implementation relative to her fellow participants would be low. However, her low score did not correlate to low implementation. Likewise, Ms. Cruz who had the highest score on the Tolerance of Ambiguity Scale had only modest implementation, and Ms. Marks who had a relatively high score on the scale had the lowest level of implementation in the study among those who attempted implementation.

The Internal Control Index scale (see Fig. 4.2.) also did not indicate a correlation between scores and implementation among the participants in this study. All of the participants scored relatively high with only one participant not scoring over 100 out of the maximum of 148. The highest score on this scale was recorded by Ms. Robins with 121 who implemented the strategies a self reported “3-4 times” over the course of the study. The lowest score, 98, was recorded by her grade level partner, Ms. Cruz, who also implemented the strategies a self reported “3-4 times” during the study.

Similarly, it would be difficult to draw any major conclusions about the correlation between the Teacher Self-efficacy scale and the implementation of strategies. Ms. Robins again recorded the highest score of 51 while only implementing 3-4 times while Mr. Simon with a score of 25 implemented a self reported 10-15 times. It is worth noting that Ms. Marks had the lowest score on this scale, a 7, and she also had the lowest level of implementation. Considering that this scale was a validated measure about teachers’ feelings of efficaciousness in the classroom it might be that this low score for
Ms. Marks does correlate to her low implementation. Again, given the small sample size and inconsistency of the other scores and implementation rates, it is impossible to draw conclusions. This theoretical correlation may be an area for future study.

One participant, Ms. Avery, did not implement any of the strategies and therefore it was difficult to make any inferences about the meaning of her personality survey scores. Ms. Avery, who had relatively strong scores on all three scales, reported that she did not implement because she felt her role as a special education teacher did not give her the opportunity to plan or implement any of the strategies. As a special education co-teacher with Ms. Marks, Avery technically had the opportunity to implement the strategies but did not do so during the time of the study.

In other research studies teacher personality has been shown to have an impact on the teacher implementation of PD strategies and on the educational outcomes for the students they serve. Yet in the limited sample size of this study no correlations could be drawn between the personality trait survey scores and frequency of implementation of strategies learned during professional development. Though it stands to reason that individuals less inclined to change - or those with lower senses of personal control or low efficaciousness - would be reticent to implement new strategies in their classroom, no such correlations could be found in the data collected for this study. Yet the Teacher Self-efficacy scale did show some correlation between implementation and low self-efficacy for one participant. A future study with a larger sample size could be conducted to test this potential correlation between teacher self-efficacy scores and rates of implementation.
Tolerance of Ambiguity (Budner, 1962)

<table>
<thead>
<tr>
<th>Fig. 4.1</th>
<th>Fields</th>
<th>Simon</th>
<th>Robins</th>
<th>Cruz</th>
<th>Marks</th>
<th>Avery</th>
</tr>
</thead>
<tbody>
<tr>
<td>Tolerance of Ambiguity</td>
<td>44</td>
<td>60</td>
<td>57</td>
<td>66</td>
<td>59</td>
<td>52</td>
</tr>
<tr>
<td>Implementation during study</td>
<td>10-15 times</td>
<td>10-15 times</td>
<td>3-4 times</td>
<td>3-4 times</td>
<td>2 times</td>
<td>0 times</td>
</tr>
</tbody>
</table>

Average score range in Budner’s (1962) original validation study was 44-48. Highest average subgroup score in his original study was 50.9.

Internal Control Index (Duttweiler, 1984)

<table>
<thead>
<tr>
<th>Fig. 4.2</th>
<th>Fields</th>
<th>Simon</th>
<th>Robins</th>
<th>Cruz</th>
<th>Marks</th>
<th>Avery</th>
</tr>
</thead>
<tbody>
<tr>
<td>Internal Control Index</td>
<td>121</td>
<td>110</td>
<td>124</td>
<td>98</td>
<td>108</td>
<td>106</td>
</tr>
<tr>
<td>Implementation during study</td>
<td>10-15 times</td>
<td>10-15 times</td>
<td>3-4 times</td>
<td>3-4 times</td>
<td>2 times</td>
<td>0 times</td>
</tr>
</tbody>
</table>

Duttweiler’s (1984) Internal Control Index is scored on a range of 28 to 140. Lower scores closer to the minimum score represent a low internal locus of control while a score closer to the maximum of 140 would represent a high internal locus of control.

Teacher Efficacy Scale (Gibson and Dembo, 1988)

<table>
<thead>
<tr>
<th>Fig. 4.3</th>
<th>Fields</th>
<th>Simon</th>
<th>Robins</th>
<th>Cruz</th>
<th>Marks</th>
<th>Avery</th>
</tr>
</thead>
<tbody>
<tr>
<td>Teacher Efficacy Scale</td>
<td>21</td>
<td>25</td>
<td>51</td>
<td>24</td>
<td>7</td>
<td>24</td>
</tr>
<tr>
<td>Implementation during study</td>
<td>10-15 times</td>
<td>10-15 times</td>
<td>3-4 times</td>
<td>3-4 times</td>
<td>2 times</td>
<td>0 times</td>
</tr>
</tbody>
</table>

Teacher Efficacy Scale (Gibson and Dembo, 1988) Questions in this survey were divided into two categories. One category asked questions concerning teachers influence on their students. A second set asked questions about outside influences on students. Participants with a high score on the first set and a low score on the second set reflected a high sense of teacher efficacy. The single Teacher Efficacy Score was derived by calculating the two sets of scores then subtracting the sums with the range of the first set of scores adjusted to match the possible range of the second because of difference in the number of items each set contained. (i.e. (Sum of set 1) – (Sum of Set 2 * 1.72)). The range of possible scores from this calculation was a minimum of -95 and a maximum of 95 and a median score of 0.
Experience, Years at CHOICE, and Years with colleagues.

One factor that did correlate strongly to levels of implementation was years of teaching experience and specifically years teaching at CHOICE (see Fig. 4.4). The teachers in this study all had fewer than 9 years of experience. This selection was intentional as I was trying to find participating teachers who had less than a decade of experience and who hypothetically had not yet developed “expert” behavior in teaching (Berry, Loughran, van Driel; 2008).

For the participants in this study even more telling than total years of teaching were years of teaching at CHOICE. The two teachers who implemented the strategies least (or not at all), Ms. Marks and Ms. Avery, were both in their first years teaching at CHOICE. Though Marks had taught for a total of six years prior, her status of being a new teacher at CHOICE seemed to impact her level of implementation. Ms. Avery who did not implement any of the strategies, was in her first year of teaching. Ms. Avery stated that her lack of implementation was a result of her role as a special educator; however, it would be reasonable to propose that her lack of teaching experience also impacted her implementation. Ms. Fields who had the longest tenure as a teacher at CHOICE had the highest rate of implementation. Her grade level partner, Mr. Simon, had similarly high implementation, a number of years teaching experience overall, and the additional school site experience of having student-taught at CHOICE during his credential program.

The correlation between experience and implementation is also supported by the interview data collected during this study. Several of the teachers referenced either their
newness to CHOICE or conversely their relative ease with school procedures and systems, their grade level curriculum, and their grade level teaching team when discussing their level of implementation. Mr. Simon noted that his familiarity with the curriculum made it easier for him to determine where and how he wanted to make modifications to his teaching strategies.

I think as a teacher when you are in multiple years in the same grade level, it is real easy to go back to last year’s plan book and say ‘Ok what did I do. This is what I did’. And then you can assess, was it successful or does it have to be changed or will this work with the students. (Simon Second Interview, 3/30/2011)

In contrast, Ms. Marks felt that her lack of experience as a teacher at CHOICE was a hindrance to her ability to implement new strategies in the classroom.

I am the new teacher here in this grade. I am trying to keep up. I couldn’t believe it, we met in the summer and [my colleagues] wanted to map out the entire year. I have never done that before. I mean to the week. Since I was the only one with this PD and the other expectations outside of our regular planning, it was hard to feel like I could say, ‘Hey you guys. I want do this’ when they didn’t really have to [use the strategy]. (Marks Second Interview, 3/2011)

Ms. Robins, as the teacher with the most overall teaching experience among the participants, seemed to be able to give voice to both ends of the experience spectrum. She commented on her first year teaching experience at CHOICE and how she was now able to approach implementing the strategies she learned during the PD workshop.
When I first started teaching I was like this is how I’m doing it, this is how I want to do it, this is how I’ve done it in the past. But working here, especially working in teams [of grade level teachers]…I am completely open to taking ideas and best practices from other people now. I wasn’t when I first came here and that has been the biggest gift that CHOICE has given me. (Robins First Interview, 11/30/10)

Ms. Robins’s description of her first year and the change she has undergone since supports her description of the approach she took in implementing strategies in collaboration with her grade level team during the study.

It’s nice. Because it’s our third year, the curriculum is planned. We know what to expect. So then when we have to make a change it is not a big deal because we are changing one small element...And I think it has been successful like that when you can change just one small piece at a time.

(Robins Second Interview, 4/1/11)

Clearly the role of experience had a strong correlation to the levels of implementation for participants. In this study the more years experience a teacher had working at CHOICE the more likely they were to try to implement the new strategies they had learned. However, some statements made by the participants during interviews indicated that there was a limit to the impact of experience on rates of implementation.

Three of the most frequent implementers expressed that sometimes their previous experience made them less inclined to implement new strategies. Ms. Robins indicated her reluctance to engage in too much change after having worked for the past three years with her grade level colleagues to build her curriculum.
Realistically, we are planned with pretty good results as far as testing goes, pretty good results as far as parent satisfaction, as far as student motivation. We doing something ok [and] we’re hesitant to jump in full throttle and throw everything out the window and try something new. So this low implementation, I don’t think is a bad thing but it’s just a slow moving process. It took us three years to get here, but it just has to be a slow moving process I think for us (Robins Second Interview, 4/1/11).

Mr. Simon similarly noted that the things that he had planned for his curriculum the year before often became the things he relied upon rather than trying to implement something new.

It’s easy to fall into what you are comfortable with or what you’ve done before… This is my second year at the grade level. I’ve seen how it’s done before. I have what I used last year. So I was comfortable with what I’ve known (Simon Second Interview, 3/30/2011).

These findings about the value of experience seem to set up a paradox. On the one hand, participants who were experienced in this study seemed more able or willing to implement the strategies they had learned during the PD workshop. However, experience also seemed to restrain some strategy implementation as teachers reported that they were often inclined to rely on strategies or lessons they had used previously and thus were more apt to implement change slowly. This *experience paradox* is an area that could be important for future study. Understanding what encourages or facilitates implementation
of professional development by more experienced teachers is potentially critical to maximizing the effectiveness of professional development.

**Participant Teaching Experience**

<table>
<thead>
<tr>
<th>Fig. 4.4</th>
<th>Fields</th>
<th>Simon</th>
<th>Robins</th>
<th>Cruz</th>
<th>Marks</th>
<th>Avery</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Years Teaching</strong></td>
<td>4</td>
<td>4</td>
<td>8</td>
<td>3</td>
<td>6</td>
<td>1</td>
</tr>
<tr>
<td><strong>Year of Teaching at CHOICE</strong></td>
<td>4&lt;sup&gt;th&lt;/sup&gt; Year (6 years as classroom aide prior)</td>
<td>2&lt;sup&gt;nd&lt;/sup&gt; Year (student taught at CHOICE)</td>
<td>3&lt;sup&gt;rd&lt;/sup&gt; Year</td>
<td>3&lt;sup&gt;rd&lt;/sup&gt; Year</td>
<td>1&lt;sup&gt;st&lt;/sup&gt; Year</td>
<td>1&lt;sup&gt;st&lt;/sup&gt; Year</td>
</tr>
<tr>
<td><strong>Implementation during study</strong></td>
<td>10 – 15 times</td>
<td>10 – 15 times</td>
<td>3 –4 times</td>
<td>3 –4 times</td>
<td>2 times</td>
<td>0 times</td>
</tr>
</tbody>
</table>

**Teacher Role.**

Another aspect of the teacher domain that was an implementation factor for at least one teacher in the study was teacher role. Ms. Avery was a first year teacher but was also a special education teacher. She reported that her role impacted her ability to implement the strategies because she did not see herself as the individual responsible for the planning of the instruction. Even though co-teaching and co-planning are significant components of the CHOICE Charter school program, Ms. Avery felt that suggesting to her co-teachers that they use strategies which she had learned at PD would have been stepping outside of her role as a special education teacher.

I have this internal struggle with myself. Yes [the strategy is] wonderful in my mind, but is it something that the whole team is going to like and accept? So that’s the other piece to my job as a special educator. I can’t necessarily go in ready to change everything or even to change just one area. I have to pass it through my team members. (Avery First Interview, 12/7/2010)
Ms. Avery’s conceptualization of her role impacted her willingness to implement and impacted her beliefs about her legitimate role to implement the strategies as a special education teacher. While this is a specific example of how role impacts implementation of learned strategies, teachers’ perceptions of their role and their authority to plan and affect curriculum planning could be a significant factor in rates of implementation in nearly any school setting.

Classroom Domain

The Classroom Domain encompasses a variety of potentially impactful factors including physical environment, access to adequate educational resources, and the makeup of the student population. CHOICE as a charter school enrolls students from throughout a large urban area. It has an ethnically and socio-economically diverse student body. In addition, the school is also a fully inclusive school that by its charter petition always has a special needs population of 15-20% of its students. This 15-20% ratio is generally reflected at both the school-wide and classroom level.

The physical condition of the classrooms at CHOICE was quite good. Based on my observations (12 visits over six months) the classrooms were neat and clean, well decorated and well supplied. Each classroom had adequate seating for the students and teachers and still had space available to move about the room, rearrange desks into different grouping or learning centers, and each classroom also had computer centers of 3 to 5 computers. The third grade classrooms at CHOICE had a maximum class size of 22 students and the fourth and fifth grade classrooms had a maximum class size of 28 students. It did not appear from my classroom observations that the physical environment of the classrooms posed any impediment to teaching or to implementing the
PD strategies, nor did any of the teachers comment negatively on the physical conditions of their classrooms.

A Classroom Domain theme which did emerge across several teacher interviews was the diverse range of learners present in the classroom. Given the full inclusion philosophy of the school, students in any given class could range from students with significant physical and cognitive disabilities such as Down’s Syndrome or Cerebral Palsy to students who had been identified as highly gifted. While the teachers at CHOICE deeply valued the school’s inclusive philosophy, some participants remarked on how the range of learners presented a potential challenge when planning the implementation of the cooperative group strategies they had learned in the PD workshop.

I think something that hinders some of [the strategies] is the fact that some students are not capable of specifically doing a pencil and paper activity. So for example, there are always ways to modify whatever it is, but let’s say that we were doing that Three Step Interview and one of my students who has cerebral palsy and is in a chair and doesn’t have motor function, so ok he’s the recorder, but he’s not really the recorder because the paraprofessional that is standing next to him writes it down for him. So yes, there is a still a way to involve him and make him feel invested in the group. But he’s not really doing the stuff that is supposed to make that student feel involved…That’s his way of being involved; it’s just not going to be the way that the “instruction manual” says to do the activity.

(Ms. Cruz, First Interview 12/7/2010)
Despite this challenge of differentiating for a wide range of learners, many of the participants stated that they felt that strategies were important for their students and that there was value in students working together in groups. This value was one reason participants stated they felt compelled to try to implement the strategies and to differentiate various aspects of the strategies so that all learners could participate.

Classroom Survey.

At the conclusion of their first interview all teachers completed the Teacher My Classroom Inventory – Short Form (Sink and Spencer, 2005). This survey focused on teacher perceptions of their classrooms’ student dynamics. The survey responses rated student dynamics through the elements of cooperation, competitiveness, and student relationships. By using these elements the survey gauged the teacher’s perception of class satisfaction and cohesion in relation to classroom friction, competiveness, and difficulty.

None of the participants in my study scored their classrooms in significantly negative terms. The minimum score of the scale was -60 and none of the teacher’s results were in the negative range and all participants ratings were above the scale’s median score (see. Fig. 4.5). Interestingly the lowest relative scores among the participants on the scale were those of 5th grade teachers Ms. Fields and Mr. Simon who also had the highest reported levels of implementation. In contrast, Ms. Robins had the highest score on the classroom inventory and had a self reported “medium-low” implementation level. These survey results indicate that for the participants in this study there was not a correlation trend between rates of implementation and the scores on the Teacher- My Classroom Inventory.
However, Ms. Fields did express in her teacher interviews that her particular group of students during the study were a challenging group and that she had modified her instructional plans based on what she thought they would be able to do effectively. Mr. Simon, Fields’s grade level teaching partner, also had a low classroom inventory survey rating which might support Ms. Fields’s assertion that this class did have difficulty cohering and working effectively together as a class. It may be that the Classroom Domain factor of student dynamics did impact the implementation of Ms. Fields and Ms. Simon. For example, the classroom factors could have impeded their rates of implementation, and had those factors not been present Ms. Fields and Mr. Simon would have implemented even more robustly. Or perhaps because of other individual teacher or school factors these two participants were able to overcome any classroom impediments to their implementation, and they were able to maintain a relatively high level of implementation despite the classroom factors that were present in their Implementation Context.

**Teacher My Classroom Inventory – Short Form (Sink and Spencer, 2005)**

<table>
<thead>
<tr>
<th></th>
<th>Fields</th>
<th>Simon</th>
<th>Robins</th>
<th>Cruz</th>
<th>Marks</th>
<th>Avery</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Class Climate Rating</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Class Climate Rating</td>
<td>6</td>
<td>17</td>
<td>42</td>
<td>43</td>
<td>37</td>
<td>21</td>
</tr>
<tr>
<td><strong>Implementation during study</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Implementation during study</td>
<td>10-15 times</td>
<td>10-15 times</td>
<td>3-4 times</td>
<td>3-4 times</td>
<td>2 times</td>
<td>0 times</td>
</tr>
</tbody>
</table>

**Teacher My Classroom Inventory – Short Form (Sink and Spencer, 2005).** Questions concerning the school counselor were omitted as CHOICE Charter School does not have a counselor at their school. The Class Climate Rating was derived by calculating two sets of scores then subtracting the sums with the range of the first set of scores adjusted to match the possible range of the second because of difference in the number of items each set contained (i.e. (Satisfaction + Cohesiveness * 1.5) – (Friction + Competitiveness + Difficulty)) The range of possible scores from this calculation was a minimum of -60 and a maximum of 60 and median score of 0.
School Domain

The School Domain contains a variety of factors that could impede or support the implementation of PD strategies by teachers. School safety, physical condition of the school campus, or the effectiveness of school leadership all could have a potential impact on a teacher’s ability to implement new strategies effectively or at a high rate. CHOICE charter school utilized a large and modestly appointed facility. The school site had once housed a local elementary school operated by the large local school district. CHOICE leased the property from the school district shortly after the campus was placed into non-operation by the school district. Over a ten year span CHOICE grew from roughly 70 students to nearly 700.

The teachers in this study did not state during interviews that there were any physical limitations imposed by the condition of the school campus that would have limited their ability to implement the PD strategies. Nor in a broader sense were there physical conditions on the campus that might have dampened their morale as teachers and thereby reduce the likelihood of implementation. Campus safety also did not present as a concern among the teachers either in interviews or on the school survey items about safety and bullying. For the most part it seemed that the teachers felt they worked at a safe school whose facilities adequately met their needs and the needs of their students. Neither of these School Domain factors presented as impediments to implementation.

The issue of school leadership did emerge as a theme in the teacher interviews in both positive and negative ways. Several teachers noted that the culture of the school that was shaped by the founding director was a positive one that encouraged best pedagogical practice and placed a high priority on the value of professional development.
We value PD tremendously here. The philosophy of the school is best practices. That’s it. Period. So we are always being invited to participate in studies like yours and in PD workshops that are trying to teach us these kinds of best practices. (Robins First Interview, 11/30/10)

However, at the beginning of the school year in which this study was conducted the founding director of the school had left her position to go to work with a national non-profit institute. The Director of Curriculum and Instruction stepped in to take the role of Interim Director while a search for a new director was conducted. This transition was described as difficult by several of the participants. It also seemed to impact the way in which the teachers went about implementing things which they had learned during PD.

The school needs a little bit of help with doing things more systematically. Because as a grade level we can really be on this one page but it doesn’t matter if it’s not systematically being implemented through all the grades…When something is introduced, if it is something that is so integral to the philosophy of the school and its something that the administration strongly feels it needs to be seen school-wide, then they need to have the audacity to say that to the staff. (Cruz, First Interview 12/10/2010 and Cruz Second Interview, 5/4/2011)

This frustration with the lack of systematic implementation of educational practices and procedures seemed to connect with the element of accountability that teachers stated was needed in order for robust implementation to occur. Several teachers noted that being accountable to me as the researcher was one of their main motivators in attempting to implement. They stated that had I not emailed to remind them that I was
coming to observe their classrooms that they might not have been as focused or motivated to implement the strategies which they had learned. Specifically with the PD in this study and in general with other PD, the lack of administrative follow up and teacher accountability for implementing PD strategies was noted as a major contributing factor to lack of or low implementation.

Some kind of accountability, and it doesn’t have to be a research student, it can be administrative…some kind of accountability, I think it makes you more likely to do something. If you get to close your door and you can do whatever you want in here, [you’re] not necessarily going to be trying new things and pushing yourself for best practices. (Robins Second Interview, 4/1/2011)

In addition to providing accountability, it was also noted that school administrators need to provide time and be persistent when it comes to setting the stage for successful implementation of PD strategies. Several teachers stated that the pressure of not having enough time to work out the issues related to implementing something new was an impediment to implementation.

Time is the biggest thing. I don’t have time. I filed everything into a cooperative work file that I have been collecting because I have really been trying to improve my skills on that, but I don’t have time to sit and review everything and refresh my memory, ‘Oh wait, what was that technique?’ (Cruz First Interview, 12/7/2010)
Competing contingencies in the life of the school year were also noted as factors that impinged on teacher time and diverted attention from developing and implementing new pedagogical techniques.

This is a crazy time of year, so trying to go out of the routine sometimes is more of a challenge when there is so much to get through to try to introduce a new structure to the class….End of the semester, holidays coming up, we just got back from Thanksgiving break, trying to finish a major writing assignment before we get to the holiday break. (Simon Interview, 12/3/2010)

Trying to help teachers limit these competing contingencies and providing time in the school year for reflecting on implementation of strategies learned during PD could help raise the rates of implementation. Another factor noted during the administrative interview with the Interim Director was the issue of persistence with professional development. The interim director, Ms. Davis, noted that the most successful professional development activities that CHOICE had implemented over the past several years were the ones to which they had repeatedly returned. She stated that any change in teaching that was to be brought about by professional development was something that would likely take a long time and had to be revisited again and again over a number of years.

Slowly. The first word that comes to my mind concerning how PD gets implemented is slowly…People, in order to implement change effectively, need to incorporate the ideals that go along with whatever the specific practice is into their [teaching] and get it ingrained into their deeper
practice…Make it part of your bag of tricks but also part of your teaching philosophy. After that you get…exposure, opportunity, and practice and support…and then it gets [implemented]. (Davis Interview, 2/2/2011)

The issues of external accountability and time for implementation seemed to be largest factors in the School Domain for all of the participants in this study. While many of the participants still stated that the teacher domain was more impactful on their implementation of the strategies, most also noted that either time or external accountability also impacted their implementation.

_School Survey._

At the conclusion of the second interview each participant was asked to complete the CUBE (Council of Urban Board of Educators) School Climate Survey. This survey examined a number of school factors including safety, bullying, trust, respect, caring, and racial self-concept. Participants scored the school climate in a very positive way with all participants’ scores well above the median score of 39 (See Fig. 4.6). Given this, it is difficult to draw any correlations between high or low scores on this scale and rates of implementation among the participants. The relative lowest score, Ms. Fields, had a high rate of implementation while the relative highest score, Ms. Cruz, the highest scorer, had a medium rate of implementation.
The CUBE School Climate survey did not have specific scoring metric by which a value could be assigned to the participants’ answers. However given that the responses to the statements were based on a Likert scale a total score value was able to be derived. Five items on the survey (4, 6, 8, 9, 10) were reverse scored based on their negative orientation to the Likert responses. The resulting range of the instrument was a minimum score of 13 and a maximum score of 65 with a higher score indicating a more positive view of the school climate.

**Implementation Context**

In this study I proposed that the Implementation Context could be understood to be the combination of three external domains (Teacher, Classroom, and School) and their respective factors. The combination of domains for any one teacher creates a unique context which exists for each teacher as they attempt to implement new things which they have learned from professional development. In collecting the data from the six participants in this study it does appear that a different context for implementation was present for each teacher and this affected how and to what extent they implemented. However, the individual teacher domain was cited by five of the six teachers as the most impactful domain in regard to their implementation. Within the teacher domain it seemed years of teaching experience, specifically at CHOICE, and familiarity and comfort with one’s colleagues were significant factors in supporting implementation. No clear themes of correlation emerged with respect to any one of the personality traits surveyed and higher rates of implementation. However, the individual characteristic of Teacher Self-efficacy may be a potential characteristic which could bear further study regarding its correlation to rates of implementation.
The Classroom Domain was cited by only one teacher as contributing with any real significance to their Implementation Context. For all participants it seemed that the physical conditions and resources of their classrooms were sufficient for their needs as teachers. As for the students, whatever challenges arose in student learning or class dynamic, the participants seemed to feel they were merely par for the course of teaching elementary school. The notable difference of teaching at CHOICE (i.e. teaching a wide range of learners in a fully inclusive classroom) was noted by some of the participants but was not regarded as a major impediment to implementation but rather a classroom factor to be considered and managed. In short the participants considered themselves and their role as the teacher to be much more significant factors in determining rates of implementation than their physical surroundings or their students.

One additional factor considered when examining the potential impact of the Classroom Domain on the Implementation Context was the overall positive classroom environments at CHOICE. The physical condition and resources available to the teachers at CHOICE were noted to be good. It is possible that a less conducive physical environment with fewer classroom resources and a larger number of students might have had a larger impact on the context of implementing new strategies learned during professional development.

The school domain was cited by only one teacher as the major determining factor in their implementation of the PD strategies. Participants reported both in interviews and by survey a great deal of satisfaction with the school, its physical condition, safety, and its school culture. Ms. Marks, the one participant who did report that the school domain played a significant factor in her implementation, was in her first year of teaching at
CHOICE. This factor could have impacted her view of the school domain. Either way, the two domains of teacher and school interacted in such way to create a context for Ms. Marks in which she felt it was difficult to implement the strategies she had learned during the PD workshop.

However, unlike the classroom domain, the teachers noted specific school domain factors which played some role in their level of PD implementation. Teachers reported a lack of time dedicated to planning for implementation and a lack of external accountability by administration as factors which impacted their rates of implementation both in general and specifically with the PD offered during this study. These observations speak to the role that the school domain played in either promoting or inhibiting the implementation of new teaching strategies and practices by teachers. Administrators providing time for reflective implementation and creating systems of external accountability could have a positive impact on rates of teacher implementation of PD strategies.

In Fig. 4.7 the interview responses of the teachers to a variety of questions are tabulated. Roadblocks to implementation, factors which facilitated implementation and the most impactful domain for each teacher within the Implementation Context are highlighted in this table. Even among the five teachers who cited the Teacher Domain as the most impactful to their implementation differences exist in what specific factors they felt impeded or facilitated their implementation. Some of those factors indicated an influence of the classroom and school domain. This suggests that even if one domain is the most dominant factor in implementation other factors are also mitigating and thereby create for each teacher their own unique Implementation Context.
Interview Responses by Topic

<table>
<thead>
<tr>
<th>Fig. 4.7</th>
<th>Fields</th>
<th>Simon</th>
<th>Robins</th>
<th>Cruz</th>
<th>Marks</th>
<th>Avery</th>
</tr>
</thead>
<tbody>
<tr>
<td>Grade Level</td>
<td>5th</td>
<td>5th</td>
<td>3rd</td>
<td>3rd</td>
<td>4th</td>
<td>4th – Special Ed.</td>
</tr>
<tr>
<td>Rate of</td>
<td>10-15</td>
<td>10-15</td>
<td>3-4</td>
<td>3-4</td>
<td>2</td>
<td>0 times</td>
</tr>
<tr>
<td>Implementation</td>
<td>times</td>
<td>times</td>
<td>times</td>
<td>times</td>
<td>times</td>
<td></td>
</tr>
<tr>
<td>Roadblocks to</td>
<td>Class</td>
<td>Familiarity with existing curriculum and lessons</td>
<td>Time</td>
<td>Time and Administrative follow-up</td>
<td>Co-planning of curriculum</td>
<td>Role as a special educator</td>
</tr>
<tr>
<td>Implementation</td>
<td>dynamics</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Facilitating of</td>
<td>Co-planning of curriculum</td>
<td>Co-planning of curriculum &amp; External Accountability to researcher</td>
<td>Experience of grade level team</td>
<td>Value and importance of the strategies</td>
<td>External Accountability to researcher</td>
<td>N/A – did not implement</td>
</tr>
<tr>
<td>Implementation</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Major</td>
<td>Teacher/ Classroom Domain</td>
<td>Teacher Domain</td>
<td>Teacher Domain</td>
<td>Teacher Domain</td>
<td>School Domain</td>
<td>Teacher Domain (role)</td>
</tr>
<tr>
<td>Implementation</td>
<td>Context Domain impacting implementation</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

In examining the data the participants provided via survey, observation, and interview it became clear that each teacher’s Implementation Context was more nuanced and complex than the teachers themselves reported. Five out six of the teachers reported the teacher domain was most impactful on their implementation and yet they spent most of their interviews speaking about their classrooms or the school site support. This complexity involved of understanding each teacher’s Implementation Context is discussed in more detail in Chapter Five.

**Case Studies of Implementation**

One of the goals of this study was to understand the interplay between the domains of the Implementation Context. An additional goal was to understand the lived experience of teachers as they attempt to implement strategies that they have learned during implementation. To provide a better understanding of the lived experience of teachers in this study, three case studies were developed for three of the participants.
These participants were selected based on their relative levels of implementation (i.e. low, medium, and high).

Through these case studies I hope to paint with rich description the implementation story of each of the three teachers presented. This clearer picture of the teacher story in implementation is important because it helps to provide school leaders with an inside look at the particular reasons why individual teachers do or do not implement what they learn in professional development. Through these individual teacher stories I hope to illuminate some of the broader themes highlighted in the prior analysis of this chapter.

Ms. Marks, 4th Grade – Low Implementation

Ms. Marks was a fourth grade teacher at CHOICE. She had been a teacher for a total of six years, but during the study it was her first full year of teaching at CHOICE. She had completed a long term substitute teaching position the previous year at CHOICE and at the time of the study was also a parent of a student at CHOICE so had a certain level of familiarity with CHOICE prior to beginning as a full time teacher. Her previous teaching experience occurred several years prior as she had taken an eight year leave from the classroom to start a family. Ms. Marks attended the University of Southern California where she received a bachelors degree in general studies and then went on to obtain her teaching credential from the same local state university which maintained a partnership with CHOICE Charter School.

*Implementation of Strategies.*

During the six months that the study was conducted Ms. Marks implemented the professional development workshop strategies only twice – once during her second
observation and another time between her second observation and her second interview. She stated during interviews that she had enjoyed the professional development workshop and felt that it was well delivered. She reported feeling enthusiastic about the cooperative learning strategies and said that a few days after the workshop she purchased the book (referenced during the workshop) in which strategies were described in detail. Yet, at the time of the first interview and first observation Ms. Marks had not implemented any of the strategies. In her first interview she cited her status as a new teacher at CHOICE and the way in which CHOICE’s curriculum planning system works as reasons why she had failed to implement at that point in the research project.

This is my first year at CHOICE. The way CHOICE runs, I honestly have to say it is for that reason that I haven’t been able to implement anything yet. We are on such a tight schedule…we also plan pretty far in advance. It has proven to be a big challenge for me having taught somewhere else to be kind of stuck in this. Which I do feel stuck sometimes. I have to be honest. I feel a little suffocated sometimes because I want to try, I want to do this, but there are too many people, too many actors involved. (Marks Interview, 12/2010)

During her second observation Ms. Marks implemented Johnson and Johnson’s best practices for group work that were described in the PD workshop. The day prior to my second observation she had used the placemat strategy that was introduced to the participants in the workshop. She used the placemat strategy to have the students create “Rules for Cooperative Work” posters.
During the observed lesson Ms. Marks began by reviewing the cooperative work poster on the board. “I hope you can use your great ideas from yesterday to help you work cooperatively. I know you can do it. I believe in you guys.” Ms. Marks also previewed with the students ways they could resolve conflict in their groups if it arose. She then outlined the basic elements of the cooperative activity they were going to do in the lesson. Each group was instructed to “partner read” an article on a specific element of the historical period the class was studying. The groups were then going to become “expert groups” in that particular facet of the historic unit. After reading, they would work together as an expert group to create and present a poster for their classmates on their assigned topic. Ms. Marks then assigned the groups and dismissed the students back to their desks to begin reading the article. Ms. Marks also assigned a letter to each member of the group (A, B, C, or D) and then utilized these letters in the “numbered heads” cooperative group management technique which had been taught during the workshop.

Ms. Marks's second observation displayed a high level of implementation of two strategies incorporated into one lesson. However, it was only one instance of implementation and it took place five months after the professional development workshop. In her second interview Ms. Marks spoke about the role that outside accountability played in her implementation during the second observation.

When I got your second email about the second observation, I was like, ‘No, I need to look at this, and I really want to. I going to make the effort and I have to.’ So I went home. I went through the book and found some
great ideas and it happened to work out…I wanted to do it for you, and I wanted to do it period. (Marks Second Interview, 3/29/2011)

Overall, Ms. Marks was an enthusiastic participant in the professional development workshop that was offered to her in this research project. She stated in interviews that she was excited about using the strategies and even bought the book from which the PD strategies had been taken. Ms. Marks stated that she thought the strategies were valuable and as evidenced by her implementation she was capable of utilizing the strategies. However, she ultimately implemented the strategies five months after the workshop and then only in response to a reminder email about the second classroom observation. Ms. Marks cited time, team planning obligations, school commitments, a lack of administrative imperative, and her status as a new teacher as reasons why she did not implement strategies sooner or more frequently.

*Implementation Context – Teacher Domain.*

Ms. Marks was an experienced teacher having taught for five years at a public school operated by the large local school district. During the study she was in her sixth year of teaching as a professional but her first full year of teaching at CHOICE. When describing her philosophy of teaching she stated that she liked to conduct a lot of “hands-on” learning in her class and that she wanted her students to be active. She also noted that she often has students working in groups and working with manipulatives across all subject areas.

When asked about her reflections concerning the professional development workshop, she said that she had gained from it as a teacher and was appreciative of the fact that the workshop had provided her with specific techniques to use in the classroom.
She said she was so interested in using the techniques that she bought the book from which the strategies taught in the workshop were selected. “I came walking away so gung ho; I want to do this tomorrow. I went online and ordered the book” (Marks Interview, 12/2010). However, despite her enthusiasm for the material, she found it difficult to quickly incorporate the strategies into her classroom practice.

Ms. Marks co-taught with Ms. Avery a special education teacher who was in her first year of teaching in her professional career and at CHOICE. Ms. Marks’ status of being a new teacher (and perhaps having a new teacher as her special education co-teacher) seemed to impact her ability to implement the strategies she learned during the PD. She stated she was unfamiliar with all of the school processes and structures and was overwhelmed by the number of obligations of a full time teacher at CHOICE.

I am the new teacher here in this grade. I am trying to keep up. I couldn’t believe it, we met in the summer and [my colleagues] wanted to map out the entire year. I have never done that before. I mean to the week. Since I was the only one with this PD and the other expectations outside of our regular planning, it was hard to feel like I could [say], ‘Hey you guys. I want do this’. When they didn’t really have to. (Marks Interview, 3/2011)

Ms. Marks completed the teacher domain personality surveys on the day of the professional development workshop. She scored a 108 out of a maximum of 140 on the Internal Control Index. This score was the fourth highest among the participants in the study. This may indicate that Ms. Fields perceived an average to above average degree of control over the events that occur in her classroom. However, Ms. Marks had a Teacher Self-efficacy score of 7. While not necessarily a low score as it was above the
median score of 0 on the scale, it was the lowest score by far among the participants in the study. Given the small sample size of the study it is impossible to make a correlation between her score and her rate of implementation, yet it is worth noting that she had the lowest score on this scale and the lowest rate of implementation among those participants who implemented.

Her score on the Tolerance for Ambiguity scale score was a 59 and was the second highest score among the participants and higher than the average score range on the scale in its original validation study. Her score would seem to indicate that she would have a high degree of tolerance for things which are novel or uncertain, yet she stated that some of her biggest struggles came with the difficulties of being a new teacher.

During the second interview I asked Ms. Marks which domains of the implementation context most impacted her implementation of the strategies she had learned. Ms. Marks stated quickly and unequivocally that the domain which had been most impactful on her implementation was the School Domain.

“School domain. I feel like I’m just complaining. I’m not complaining. It’s more of, this is just reality at this school. I feel like I am just under such pressure and so overwhelmed and consumed with school-wide things. I would rather be spending the time on my classroom and my students and this whole grade and my team. But I have meetings all the time. We have outside surveys, PD…conferences which all schools have. But I feel like I have never had more meetings in my life. And at this school you are required to be at every single thing from start to finish.
And we have to plan together. So I feel like its lock step. (Marks Second Interview, 3/29/2011)

In evaluating Ms. Marks’s teacher domain of the Implementation Context it can be seen that Ms. Marks is a competent teacher with several years of teaching experience but only one year at CHOICE Charter School. She self-reported on a personality survey as having a strong Tolerance for Ambiguity, and average Locus of Control and low Teacher self-efficacy. When asked what domain had the greatest impact on her implementation of PD strategies she stated that she felt the School Domain was most impactful. She was the only participant in the study to choose a domain other than the teacher domain as most impactful.

*Implementation Context – Classroom Domain.*

Ms. Marks’s classroom had a total of 18 students, 10 boys and eight girls. Approximately half of the students were students of color (e.g. Latino, Asian, and African-American heritage). One of the boys in the classroom appeared to have a significant cognitive disability and required frequent sensory-motor breaks both in and out of the classroom. He was supported by a paraprofessional aide during both of my classroom visits. The classroom was in a temporary bungalow on the far side of the campus. The room itself was spacious and was well decorated with a number of maps, timelines, and student posters depicting the state and historical events. The classroom had a large shelf filled with reading books for the class and several shelves filled with student work binders and supplies. Overall, the physical space was more than adequate for classroom use.
Ms. Marks did not report in interviews or reveal in surveys or during observations that student issues posed impediments for her ability to implement the learned PD strategies. When she was observed implementing strategies from the workshop, she had an ease with her students and they readily accepted her direction and worked well with one another during the activity. Throughout the observations of her class Ms. Marks had a calm demeanor and obviously had command of her students and her class. At all times she remained positive providing her students with encouragement while identifying students in the classroom who were displaying the behavior she was expecting “OK superstars, when you look like Jenny I’ll know you are ready. When you look like Bobby…good. When you look like Sarah” (Marks Observation 2/2011). These kinds of statements peppered her instruction. She was positive in both her instruction and her redirection with the students.

Ms. Marks’s My Classroom Inventory score was the third highest among the participants in the study with a 37. With a maximum score of 60, Ms. Marks’s score on this inventory places her in the average to above average range regarding her perception of her class’s cohesion and ability to work effectively together. Given the observations of Ms. Marks’s positive interaction with her students and her relatively high score on the My Classroom Inventory, it is reasonable to assume that the classroom domain had no negative effect on Ms. Marks’s ability to implement the new strategies. It could be possible that the positive classroom environment contributed to the successful implementation of the strategies when Ms. Marks eventually did attempt implementation.
Ms. Marks identified the school domain as the most impactful domain of her implementation context. Her score on the CUBE survey which explored attitudes toward the school environment seem to corroborate her concerns about the school domain. Her score of 48 on the scale was an above average score for the survey instrument but relative to her fellow participants was the second lowest score recorded in the study. Specifically Ms. Marks noted several factors in the school domain which impacted her ability to implement the strategies as frequently as she may have liked. Three major factors were the team planning component at CHOICE, the lack of administrative imperative for implementing these specific strategies, and the myriad time demands that came with being a teacher at CHOICE.

At CHOICE, teachers planned their curriculum with their fellow grade level teachers. Grade level colleagues were expected to teach at generally the same pace and to conduct the same lessons. This team planning was meant to keep a level of curricular consistency among the different classes of the grade levels. Ms. Marks found this planning to be stifling for her incorporation of the strategies she had learned during the professional development workshop.

So that was two, three weeks ago that we had the [workshop]? Oh yeah…I mean I feel like if I wanted to do the [strategies] it would have to be a whole big discussion, and we’d have plan for it and put it on the calendar and all that. So I haven’t truly found a place to stick it in. (Marks First Interview, 12/2010)
Ms. Marks perceived the group planning aspect of CHOICE Charter School’s functioning as a major reason why she had not implemented a strategy from the workshop by the time of the first interview. She described the group planning sessions as determining the activities for nearly every day and every period and though there was some flexibility, it felt confining to her as a teacher.

To just do it and not have to run it by four or five other people first.

Which, in some instances, is great to have all these people working together. In this kind of thing sometimes, I feel like if I get a great idea the night before I just can’t do it. In this model, it just doesn’t lend itself to do that as easily. (Marks First Interview, 12/2010)

In addition to the planning procedures at CHOICE, Ms. Marks also stated that she felt that had there been more external accountability for implementation she would have been more likely to implement. Though she did implement eventually out of a feeling of accountability to me the researcher, she stated that she would have been more likely to implement the new strategies had they been a school-wide initiative that the administration of the school was requiring.

If it were [an administrator] thing or a school-wide thing, it would have been implemented sooner. It just would have been a given…They are the administrators. I did this not out of obligation by any means. I volunteered to do it. I made a commitment, so I wanted to follow through with it. With [the administrators], they pay my pay check. They are going to come in and observe and evaluate me. It’s going to go on my record and stuff. Of course I would have done it. Maybe I just took a little
longer for you. But I still did it to the best of my ability. I didn’t just throw something together for you. (Marks Second Interview, 3/29/2011)

Ms. Marks also stated that she felt there were many demands on a teacher’s time at CHOICE. She reported that she felt she had never been to so many meetings as a teacher and had so many obligations beyond her duties in the classroom. She also noted that the transition in leadership from the founding director, Ms. Thomas, to the interim director may have also added to the number of things teachers were required to take on during the school year.

I am a first year teacher here. It has been kind of a crazy year without Ms. Thomas here. I have to do these things, and it’s almost like me as a teacher is second to all of my school-wide responsibilities. (Marks Second Interview, 3/29/2011)

These issues in the school domain were perceived by Ms. Marks to have been the major reasons why she did not implement the new strategies more often in her classroom. However, despite these perceived roadblocks to implementation, Ms. Marks remained positive about the workshop and about the strategies that were taught. She stated that she thought the workshop was well conducted and that she liked how the trainer had the participants model the strategies and not just lecture about them. She also indicated that she thought the strategies were valuable for her students because her students would be encouraged to cooperate, listen to one another, take turns, and be responsible. She also stated that she intended to continue using several of the new strategies going forward in her teaching and planning (Ms. Marks First Interview 12/1/2010; Ms. Marks Second Interview, 3/29/2011).
Ms. Marks – Conclusion.

Ms. Marks stated that she implemented the strategies she learned during the professional development workshop in a very limited way. She used the placemat strategy once and stated she used the number heads accountability strategy for group work. While Ms. Marks was enthusiastic about the professional development and the implementation of the strategies, she stated that school obligations and the school structure of grade level team planning prevented her from more robustly implementing the strategies.

Ms. Marks stated that she felt the School Domain had the biggest impact on her implementation of strategies. She reported feeling confined in her ability to try something new by the planning structure at CHOICE. She also indicated that had the implementation been an imperative imposed by the school she would have been more likely to implement the strategies more frequently. However, Ms. Marks also was in her first year as a teacher at CHOICE. Despite having several years teaching experience in other school settings, her status as a new teacher at CHOICE may have also impacted her ability or willingness to implement the strategies she had learned. Additionally, Ms. Marks had the lowest score among the study participants on the Teacher Self-efficacy scale. Having low teacher self-efficacy or belief in her ability to affect change in the classroom may have also impacted her level of implementation of the strategies. The self-reported area of School Domain seems to be the most dominant area impacting her implementation context; however, her status as a new teacher and her low self-efficacy score may have also caused the teacher domain to have a significant impact on her implementation as well (See Figure 4.8).
This complexity in the Implementation Context of Ms. Marks is an important consideration. Though she clearly felt that the impact of the school domain was what dictated her level of implementation, it was also clear from other data provided about her as a teacher and her status as a new teacher that other factors combined to add nuance to her context for implementation. The complexity of Ms. Marks’s Implementation Context will be further analyzed in Chapter Five.

**Ms. Robins, 3rd Grade – Medium Implementation**

Ms. Robins was a third grade teacher at CHOICE in her eighth year teaching overall and her third year teaching at CHOICE. She had always taught at the third grade level with her first five years of teaching taking place at a local Jewish Day school. Ms. Robins graduated with a bachelor’s degree in musical theater from a selective local state university and then obtained her elementary teaching credential from the state university with which CHOICE had a partnership. Ms. Robins’s grade level teaching team had been working together for three years at CHOICE. They were all hired during the same year, and it was evident from observations and interviews that they had bonded as a teaching team as they worked and planned together effectively.

Early on in her professional career Ms. Robins spent time as a paraprofessional aide at a school operated by a large local school district. She stated that during that experience she saw how “frontal teaching”, where the teacher primarily lectured the students, was not effective. Based on this experience she stated that she tried to approach teaching in a manner which engaged children in learning activities and interactions with one another. She felt that this was the best way for children to learn and because of that
felt CHOICE was a good fit for her as a teacher. She also stated that the content of the PD workshop had been valuable for her as a teacher.

Implementation of Strategies.

Ms. Robins stated that she implemented the strategies she learned during the workshop approximately “3 to 4 times” during the course of the study. She was observed using the placemat strategy during the second observation in the context of a math review lesson. Ms. Robins stated that the most compelling part of the strategies for her as a teacher was the social components of the learning activity. She believed that the third grade was a time that was rife with opportunities for social learning and that this made using the cooperative strategies very important to her as a teacher.

Yeah, we’ve done [cooperative group work]. We have. Especially in third grade when developmentally they are starting to own their own roles in the social scheme of things. Where you have students who are emerging as leaders and kids who are emerging as back seat drivers. Kids who are having all these social responsibilities…we need to kind of challenge those roles in the classroom and these strategies have given us tools to do that. (Robins First Interview, 11/30/10)

Ms. Robins stated that the strategies and best practices that were presented during the workshop were helpful for her as a teacher who wanted to use cooperative learning because they gave her methods and teaching tips to make cooperative learning even more effective. Though she had implemented different types of cooperative learning in her class prior to the workshop, she stated that she had struggled with having the students work well together and get the most out of the cooperative experience. Ms. Robins stated
that the strategies for accountability and roles presented during the workshop were very helpful for her in her classroom practice.

With the PD that we had with you, the idea of having a responsibility for each person in the group was a fantastic light bulb for us. If we can give each person a responsibility and have them actually stick to it…we keep all the students engaged. And we’ve had some really good success with that. (Robins First Interview, 11/30/10)

Despite these positive factors however Ms. Robins admitted she was not implementing the strategies she learned at a high rate. She cited two reasons for why she did not implement the strategies at a higher frequency. One was the time involved in planning for and conducting cooperative group activities in class. She saw the longer time element to these instructional strategies as potential barriers to implementation.

The sheer time crunch of using them. This kind of more cooperative group learning strategies are more of a time commitment. We have, on a good day, 45 minutes for social studies maybe and hour and those strategies of discussion and really getting into the core of things takes a lot more time…We know it is a better way to learn but as far as the logistics of everything sometimes it’s not always feasible (Robins First Interview, 11/30/10).

A second reason Ms. Robins cited for lower levels of implementation was her previously established curriculum and teaching strategies. Ms. Robins noted that because she was a 3rd year teacher and part of a long standing third grade team, many effective instructional practices and lessons were already in place in her classroom. The previous planning,
experience, and success she had already experienced made her hesitant to throw out established lessons just to try out new strategies. This hesitancy is consistent with literature on change theory; Ms. Robins would be less likely to change her practice if she did not perceive a need to change (Kotter, 1998).

Realistically, we are planned with pretty good results as far as testing goes, pretty good results as far as parent satisfaction, as far as student motivation. We doing something ok that we’re hesitant to jump in full throttle and throw everything out the window and try something new. So this low implementation I don’t think is a bad thing but it’s just a slow moving process. It took us three years to get here, but it just has to be a slow moving process I think for us. (Robins Second Interview, 4/1/11)

Ms. Robins was a willing and engaged participant in the professional development workshop and was able to identify many positive reasons why she would want to implement the strategies she had learned during the PD. She self-reported that she implemented the strategies 3 to 4 times during the duration of the study and the strategy that she used most frequently was the placemat strategy. She also began to employ the best practices technique of assigning roles to group participants when using cooperative strategies in her classroom. She found that assigning roles increased accountability and the effectiveness of the group strategies. When asked during the second interview which Implementation Context domain she felt most strongly impacted her implementation, she discussed both the classroom and teacher domain but ultimately selected the teacher domain as most impactful on her implementation.
My first initial thought was the classroom because our students have such varying disabilities but then I thought we’ve been able to get around most of those…While [classroom] would affect it significantly, I still think it comes down to whether or not I want to do it. (Robins Second Interview, 4/1/2011)

*Implementation Context – Teacher Domain.*

Ms. Robins was the most experienced teacher in the study and had spent all of her eight years of teaching at the third grade level. She presented as a confident teacher with a strong command of her grade level curriculum and the social/emotional needs of the age level she taught. During observation she displayed the ability to lead her students in effective whole group instruction and class routines as well as attend to the needs of individual students in her class. Being guided by the content of her grade level curriculum while attending to the needs of the students present in her class was a hallmark of her approach to teaching.

You have to find out what works for individual kids rather than kind of lumping. So while those strategies are a good place to start it is sort of left up to each educator and the team to pick and choose what is going to really work for each individual kid (Robins First Interview, 11/30/10).

Ms. Robins completed the personality surveys of this study on the day of the professional development workshop. All of her scores on the survey scales were above average to high. Her Tolerance of Ambiguity score was a 57 which was more than ten points higher than the mean score of the original validation study and higher than the average score of any of the subgroups within the original validation study. Ms. Robins’s
Locus of Control score (124) and Teacher Self-efficacy score (51) were both the highest score of any of the participants in the study. The score on her personality surveys indicated that she was a confident teacher who believed in her ability to effect change in her classroom, believed that she was in control of the classroom circumstances, and that she was able to tolerate changes and novel circumstances in her environment.

These high personality scores would seem to indicate a strong ability to implement the strategies she learned during the PD workshop. Her years of experience, her multiple years of experience at CHOICE, and her strong collaborative relationship with her grade level team would also seem to indicate a strong ability to implement new strategies at a high rate. Yet her rate of implementation was not the highest among the participants in the study. Considering her interview statements about her concerns regarding classroom time constraints and her hesitancy to change too drastically, these factors may have been contributed to her moderate rate of implementation.

These factors were further corroborated in her second interview. Ms. Robins indicated her inclination, as an experienced teacher, to make small changes and adjustments to meet the needs of students and to add new skills to her teaching.

It’s nice. Because it’s our third year, the curriculum is planned. We know what to expect. So then when we have to make a change it is not a big deal because we are changing one small element...And I think it has been successful like that when you can change just one small piece at a time.

(Robins Second Interview, 4/1/11)

Ultimately, Ms. Robins’s teacher domain would seem to indicate she is a highly effective and competent teacher who would be able to implement the PD strategies at
whatever level she chose. Her statement that the teacher domain was the most impactful on her rate of implementation seems to support this assessment. She stated that she felt ultimately she was responsible for deciding whether or not she implemented the strategies. Paradoxically, her level of experience also seemed to suppress a higher level of implementation as she chose to keep more of her previous practice rather than implement new practice. Yet, even for Ms. Robins some underlying complexity in her Implementation Context existed. For example, though she did not specifically note the school domain as having a major impact on her ability to implement strategies, several of her statements during the second interview indicated that the school domain may have also been a factor in her rate of implementation.

*Implementation Context – Classroom Domain.*

Ms. Robins’s third grade classroom was in one of the large permanent buildings on the CHOICE school campus. She had twenty students in her class. Two students were African American and one of the students was Latino. Of the twenty students 12 were boys and eight were girls. Two of the students appeared to have significant cognitive delays, and they received support from paraprofessionals in the classroom. An additional paraprofessional assisted other students during my classroom observations.

Her classroom had ample instructional space. Several shelves were filled with classroom supplies for art activities. The room was decorated with letter-sound posters, U.S. and state maps, and large displays of student work. The classroom also had a computer center, a student reading area, and was outfitted with audio/visual equipment for teacher led instruction. The classroom was more than adequately equipped for the instructional needs of the students.
Ms. Robins’ score on her My Classroom Inventory scale was the second highest among the participants in this study and well above the median score of the survey instrument. The only participant that scored higher than Ms. Robins was her grade level partner Ms. Cruz. This scale reflected Ms. Robins’s positive attitude about her students, their ability to work effectively together, and to be cohesive as a class.

In sum, Ms. Robins’s Classroom Domain was very positive and perhaps had a positive impact on her ability to implement the PD strategies. However, Ms. Robins did consider it as the potential major domain of impact on her implementation of strategies. This consideration was linked to her perception about the challenges inherent in operating a fully inclusive classroom with a wide variety of learners for which to account as a teacher. Yet, ultimately she stated that she felt confident in her and her grade level team’s ability to plan for these needs. Therefore in her final analysis of the most impactful domain in regard to her implementation she chose teacher domain stating that she as a teacher was ultimately responsible for her rate of implementation.

Implementation Context – School Domain.

Ms. Robins was incredibly positive about her role at CHOICE as well as CHOICE as a school. She valued the professional growth that the school had fostered in her as a teacher and displayed a belief in the fully inclusive model of education provided by CHOICE. She also valued the partnership and planning with her grade level teachers, the co-teaching with her special education teacher, and the professional development opportunities provided by CHOICE’s university partnership. Her CUBE school survey seemed to reflect her appreciation of CHOICE’s school environment as she scored a 51 out of a maximum of 65. However, her score was fourth relative to the six participants in
the study. Additionally, some of the concerns she raised during interviews about the school environment directly related to the issue of professional development and the implementation of professional development at CHOICE.

In several respects Ms. Robins felt that CHOICE placed a high value on professional development and on best practices. She stated that she felt that CHOICE’s commitment to implementing best practices helped teachers stay focused on always improving instruction.

We value PD tremendously here. The philosophy of the school is best practices. That’s it. Period. So we are always being invited to participate in studies like yours and in PD workshops that are trying to teach us these kinds of best practices. As teachers we may write off something right away in our classroom – ‘Oh that’s not going to work in my classroom’. And that’s OK, but here at CHOICE where we are committed to best practices. We kind of challenge ourselves to see how we can fit almost anything into the classroom. And often times some of our best lessons plans have come out of that. (Robins First Interview, 11/30/10)

Despite this professed commitment to best practices and professional development, Ms. Robins raised concerns about how much “follow through” and accountability were in place at CHOICE. She stated that while the opportunities were offered for professional development, the steps to ensure that those best practices were implemented were not always in place.

Some kind of accountability, and it doesn’t have to be a research student, it can be administrative…some kind of accountability, I think it makes you
more likely to do something. If you get to close your door and you can do whatever you want in here, [you’re] not necessarily going to be trying new things and pushing yourself for best practices, I think. But I think that was helpful, that sense of accountability. If you’re going to want to implement professional development, it’s necessary. (Robins Second Interview, 4/1/2011)

Ms. Robins stated that too often at CHOICE that accountability which she felt was necessary for full implementation of PD was not present and that only things that were legal mandates for the school became mandates for the teachers.

Unless there is a legal component to it, something like CPR, something like, um… the ones with legal stuff to it, there’s no check up, there’s no follow through with professional development at all. And I think we struggle with that. (Robins Second Interview, 4/1/2011)

Though Ms. Robins’s stated that the teacher domain was most impactful on her level of implementation, given her comments about the role of accountability and administrative oversight in the implementation of professional development it is reasonable to hypothesize that within the school domain the lack of the accountability may have also impacted her level of implementation.

*Ms. Robins – Conclusion.*

Ms. Robins reported that she implemented the strategies three to four times during the course of the study. She was observed using the strategies during the second observation and stated that strategy she used most often was the placemat strategy. She also stated that one of the aspects of the training that she was interested in and which she
used to great effect was assigning roles to students when they were conducting cooperative learning activities. Ms. Robins stated that she enjoyed the format of the workshop, that she enjoyed the interactive nature of the presentation, and liked the best practice management strategies that help teachers make cooperative work more effective.

Ms. Robins was an experienced teacher who was comfortable and competent in her grade level and in the systems and educational philosophy of CHOICE. These factors seemed to support her ability to implement the new strategies in her classroom. Ms. Robins stated that she felt the teacher domain of the Implementation Context had the greatest impact on her implementation of the strategies. She scored exceptionally high on all of the personality surveys and had the disposition of a teacher who had confidence in her role and in her ability to affect her environment and deal with change. She stated that she felt her rate of implementation was ultimately linked to her decision as a teacher to implement. Despite any classroom domain or school domain challenges that might be present because of CHOICE’s fully inclusive classes, Ms. Robins felt that teacher was the most significant factor in the strategy implementation. Yet, despite her focus on the role of the teacher and the teacher domain, Ms. Robins also noted the importance of the school domain in successful professional development implementation particularly the role of administration in holding teachers accountable for implementation.

Ms. Robins’s said the teacher domain was most impactful on her implementation, but also stated that she thought about reporting that the classroom domain was most impactful. In addition, a large number of her comments about the implementation of professional development at CHOICE centered on the role of administrators and accountability at the school level. Therefore, her Implementation Context (See Figure
while largely impacted by the teacher domain is also quite influenced by the school and classroom domains as well. In some ways it seemed that Ms. Robins was not entirely able to clearly perceive her own context for implementation. This complexity concerning the Implementation Context will be further examined in Chapter Five.

**Ms. Fields, 5th Grade – High Implementation**

Ms. Fields was in her fourth year of teaching at CHOICE Charter School during this study. She had taught fifth grade for each of those years. Prior to becoming a teacher Ms. Fields had been a paraprofessional at CHOICE for six years during which time she obtained her Bachelor of Arts degree in Cinema and Television Arts and Media at the local state university. Ms. Fields started working for CHOICE just a month after it had opened. Additionally, her mother was a pre-school teacher at the CHOICE pre-school program that had been in existence for many years prior to the opening of the charter school. Ms. Fields expressed a deep connection to CHOICE and its mission of inclusive education. She remarked during the initial interview that she was excited she was starting to teach students in fifth grade who had been taught by her mother in pre-school.

*Implementation of Strategies.*

Ms. Fields stated in her interviews that she enjoyed the professional development workshop that was provided during this study and that she gained several new tools to use as a classroom teacher. She said that she often used cooperative activities in her classroom and that it was nice to learn new strategies to try. However, at the time of her first interview, four weeks after the workshop, she reported that she had not incorporated any of the strategies that had been presented in the workshop. She said she felt that she
had used elements of the strategies but that she was yet to specifically include one the of
the strategies in her lessons.

During the first observation of her class Ms. Fields conducted a science
experiment in which her students built an electrical conductor out of household items
(e.g. pencil, tape, wire, a battery) and used the device to separate the hydrogen and
oxygen in water molecules. The students worked cooperatively and elements of the best
practices for group work were present. The students had individual accountability and
also had to rely on one another to complete the task. However, Ms. Fields did not discuss
best approaches for working in groups, did not debrief the group work process at the end
of the experiment, and did not incorporate any of the strategies from the professional
development workshop in to the lab process. Therefore there was limited evidence of
implementation observed during the first classroom observation (Fields First
Observation, 1/26/2011).

In the second class observation, three and a half months after the PD workshop,
Ms. Fields conducted a math lesson using the placemat strategy as well as the inductive
thinking format that was used in the workshop when teaching the placemat strategy.
When I entered the room for the observation Ms. Fields stated, “I stole the idea from the
workshop. I hope that is ok.” During the lesson she divided students into groups of four.
She presented an inductive lesson where students had to describe the qualities of
geometric shapes and in doing so create “rules” about what elements qualified certain
shapes to fit into certain categories. The students recorded their ideas about those rules
on their placemat space. Ms. Fields then had the students rewrite the rules using
mathematical terms (radius, diameter, angle, etc.). Students discussed the creation of
these newly phrased rules with their table groups using their placemats as a reference. In this lesson Ms. Fields utilized one of the strategies from the workshop and students had to cooperatively discuss the content to provide the teacher with answers. However, while Ms. Fields discussed and debriefed the content of the lesson with the class, she did not include a debrief of the cooperative work with the class during the observation. Evidence of implementation of strategies was present in the second observation, but evidence of all the elements of best practice for group work strategies were not present (Fields Second Observation, 3/30/2011).

In her second interview I asked Ms. Fields to estimate how often she had used the strategies since the professional development workshop. She stated that from the time of the workshop to the time her second interview she had implemented the Think, Pair, Share strategy approximately once per week. She also stated that she had used the Four Corners strategy two to three times, the Placemat Strategy with various modifications five to six times, and had not used the Three Step Interview at all. Ms. Fields noted that she almost always made some kind of modification to the strategies when she implemented them and that she had not used them “as formally as they had been presented during the workshop” (Fields Second Interview, 4/8/2011).

These statements are consistent with her view that one of the (but not the) major factors that impacted her implementation was the Classroom Domain. She stated that the makeup of a class “definitely has a lot to do with what strategies can be implemented and how they can be implemented” (Fields Second Interview, 4/8/11). When asked to rate her level of implementation throughout the course of the study, Ms. Fields said that she considered her implementation to be “medium to low” and that she gave herself that
rating because she could “have done more to implement the strategies more true to how they were implemented at the professional development.” However, relative to the other participants in the study her implementation rate was the highest.

*Implementation Context – Teacher Domain.*

Ms. Fields is a relatively experienced teacher with respect to the other teachers in the study. She had taught at CHOICE for three years prior to the year of the study and had worked as a paraprofessional for six years prior to that. In addition, all of her years of teaching were in the same grade level, so she was familiar with the content of the grade level. Also, she had worked with her grade level co-teacher, Mr. Simon, for last six months of the previous school year. During the observation of her classroom, though she was at times seemingly frustrated with the distractibility and behavior of her students, she was in charge of the classroom and presented herself as a competent educator. As a teacher Ms. Fields described herself as a “facilitator” in the classroom. She believed that her efforts were best utilized in helping her students be independent learners.

My big goal every year for every group of students is to make them as independent as possible and help them know how to access information that they need. I feel I am doing my best job when I am not needed…I feel the best job I can do is to allow them to be as independent as possible, to allow them to do things on their own. (Fields First Interview, 12/8/10)

Ms. Fields completed the teacher domain personality surveys on the day of the professional development workshop. She scored a 121 out of a maximum of 140 on the Internal Control Index which was the second highest among the participants in the study. This may indicate that Ms. Fields perceived high degree of control over the events that
occur in her classroom. Ms. Fields also had a Teacher Self-efficacy score of 21. While not necessarily a high score it was above the median score of 0 on the scale. This may indicate she felt that she could be effective in her classroom and that she believes that her actions would most often yield the desired results. Her score on the Tolerance for Ambiguity scale was a 44 which fell within the average range (44-48) for the original validation study on the scale. However, her score was the lowest among her peers in the study and may indicate intolerance for ambiguity relative to her colleagues.

In the second interview I asked Ms. Fields which domain of the implementation context most impacted her implementation of the strategies she had learned. Ms. Fields stated that while she felt like she wanted to say that the classroom domain was the most impactful domain, she also felt that herself as a teacher was a major contributing factor to the level of her strategy implementation. She said that it was “ultimately [her] responsibility to implement the strategies” (Fields Second Interview, 4/8/11).

In the teacher domain of the Implementation Context, Ms. Fields is a competent teacher, with several years of experience at CHOICE Charter School, and three years experience at her grade level. She self reported having a strong locus of control and teacher self-efficacy and a low average tolerance for ambiguity. While she felt that her implementation of the strategies was impacted by her classroom, she declined to place all of the impact on that one factor and stated that instead, in the end, she was the one responsible for implementation.

*Implementation Context – Classroom Domain*

Ms. Fields’s classroom had a total of 28 students, 15 girls and 13 boys. Several of the students were students of color (e.g. Latino, Asian, and African-American). One of
the boys in the classroom appeared to have a significant cognitive disability and was supported by a paraprofessional aide during both of my classroom visits. Another boy in the classroom appeared to have a mild social learning disability based on his interactions with peers and students. He required occasional social redirection by the teacher, paraprofessional, and classmates.

The classroom was well decorated with science posters and student writing. Along one shelf were a variety of costumes that could be employed in simulation lessons though I did not observe a simulation during my visits. The classroom also had a large classroom library, a full sized human skeleton for science, and several shelves filled with supplies. Overall, the physical space was quite inviting and functional for classroom use.

However, besides the physical comforts of Ms. Fields’s classroom, the student element of the Classroom Domain played a major factor in Ms. Fields’s implementation of the PD strategies. Ms. Fields stated during our second interview that one of the major implementation context domains impacting her implementation during the course of the study was the Classroom Domain. She made several statements about the general impact that student considerations can have as well as the specific demands that this years’ class had placed on her with respect to trying the workshop strategies.

I have to take into consideration the group that I have and what will work for them, and I may have to adapt some of the things. The way that I implement the strategies may have to change depending on the group (Fields First Interview, 12/8/2010).
Ms. Fields also stated that this idea of modifying things she learns at professional development to fit the needs of her students is often the first thing she thinks of when she is learning new strategies.

I have been through a lot of professional development, and I’ve sat there, and I hear all of the theories and strategies that sound really, really great. And the entire time I’m sitting there, and as soon I hear one of those strategies I automatically jump to one of those students in my class, and I think ‘That for sure wouldn’t work for that student’ or how would that work for this student’ (Fields Second Interview, 4/8/2011).

Beyond just generally matching pedagogical approach to the hypothetical needs of a class, Ms. Fields also stated that her current group of fifth grade students posed particular barriers to implementing the strategies.

It feels like there is a lot of complaining, I guess for lack of a better word, and a lot of negativity. And a lot of problems around the issue of fairness that go on a lot in here…Following directions is another big challenge that we are working on. You know especially with the three step interview, I feel like the majority of students would absolutely get it but there would be a few students who for one reason or another wouldn’t hear the directions and it wouldn’t be a successful activity, and it would probably cause more frustration than it would be a success (Fields First Interview, 12/8/2010).

During my initial interview and my initial observations I was able to observe Ms. Fields’ concerns and frustrations about her class. During the first interview Ms. Fields
was visibly distressed, and I asked if it was still ok to proceed with the interview. She stated that it had been a difficult day but that she was fine to do the interview. During the first observation she stated sarcastically that “it [had] been a fun morning” when I initially entered the room. During that first observation I noted that there were several times during the lesson when Ms. Fields had to stop the activity to remind the students about safe use of the materials, how to complete the experiment, and how to record their observations. A significant portion of her instruction during that lesson was directed toward classroom management.

Ms. Fields’ Classroom Climate Survey supported her perception of having a difficult class. The survey contrasts the elements of Satisfaction and Cohesion in a classroom versus elements of Friction, Competitiveness, and Difficulty. She completed the survey at the conclusion of her first interview. Ms. Fields scored a six out of maximum of 60 with a median score of 0. Notably, Ms. Fields Classroom Climate score was lower than all of the other participants in the study and lower than her co-teacher with whom she shared fifth grade students.

In summary, Ms. Fields’ physical classroom environment fit all of the needs of the learning environment. It was spacious, had ample supplies and materials, and was decorated in an inviting way to promote learning. However, Ms. Fields stated that the students she taught presented challenges to her as a teacher. She described issues of following directions and disagreements about fairness. Her Classroom Climate survey reporting highlighted issues of Friction, Competitiveness, and Difficulty. In her final interview, Ms. Fields stated that the Classroom Domain was one of the major factors in
her implementation. She viewed the classroom dynamics present in her fifth grade class as roadblocks to more robust implementation of the strategies that she had learned.

Implementation Context – School Domain.

Ms. Fields had worked at CHOICE charter school for a total of nine years prior to the beginning of the study. Six of those years were as a paraprofessional aide and three of them were as a general education fifth grade teacher. Her belief in and satisfaction with the climate and culture of the school were evident in the two interviews we conducted. She was particularly positive about the co-teaching and co-planning components of the school program. She felt comfortable working with her co-teachers and felt that they all benefitted from working and planning together and debriefing at the end of each day.

Fortunately I have co-teachers…. We meet and we talk every single day. And if something needs to be changed we just change it. The one thing that I really do like about CHOICE is that we have that kind of flexibility where if we need to re-teach a concept but change it up a little bit, we have that flexibility (Fields First Interview, 12/8/2010).

Ms. Fields stated, however, that she still felt she could independently make decisions as a teacher. She did not feel confined by the collaborative process and felt that she had an appropriate amount of autonomy within the school structure to incorporate changes in her curriculum and teaching.

I think that what’s nice too is the environment that we set up here. We feel comfortable enough where, you know, ‘I set up this system for my class. Do you want to set up that system for your class?’ Sure’. Where we don’t need to do the exact same thing. As long as we’re able to get the
point and the big idea across to the students (Fields Second Interview, 4/8/2011).

Ms. Fields said that she felt she received an appropriate amount of support from her administrators at CHOICE when implementing new things in her class. Additionally, she stated that her implementation of the strategies she learned in the PD workshop would not have been different had the PD come from the school administration as opposed to a research project. However, her School Climate Survey score, a 47, was the lowest among the participants in the study. This survey rated elements of school safety, bullying, physical campus conditions, and administrative support. Ms. Fields completed this survey at the conclusion of her second interview. Her ratings may have been negatively impacted by her perception of her classroom concerns; however, the scale of the survey scores was 13 (low) to 65 (high) which would still place her score of 47 as a positive view of her school climate.

When asked about which domains had the biggest impact on her implementation of the strategies, she stated that there was one she could “eliminate right away” – the school domain. She stated that she was comfortable with the amount of support she received at CHOICE and did not feel that there had been any negative impact on her implementation by the school. In fact, she said she felt positive about the co-teaching and co-planning systems at CHOICE, and when she had implemented strategies, she had benefitted from brainstorming the implementation with her co-teachers. Ms. Fields’s School Climate Survey, while low relative to her fellow study participants, still reflected a positive view of CHOICE’s school climate.
Ms. Fields – Conclusion.

Ms. Fields stated that she implemented three of the four strategies presented at the professional development workshop. She reported that she used the Think, Pair, Share strategy on a weekly basis, had conducted the Four Corners strategy two to three times, and had used a modified version of the Placemat strategy five to six times. She self-rated her implementation of the strategies over the course of the study to be “medium to low”; however, relative to the other participants in the study she had one of the highest rates of implementation. During one of the observations I observed her using the placemat strategy. However, I did not observe Ms. Fields employing any of Johnson’s Five Basic Elements of collaborative group work during either of the lessons I observed.

Ms. Fields stated that she felt the Classroom and Teacher domains of the Implementation Context had the largest impact on her implementation of the strategies. Her self-reporting of the challenges she experienced with the students in her classroom and her relatively low score on her classroom climate survey supported her statement. In addition, Ms. Fields stated that when she considers the implementation of new ideas learned at professional development she is always thinking first of how the ideas will or will not work for the students in her classroom.

As a teacher Ms. Fields was competent in both her grade level pedagogy and in the content that she taught. In addition, she had been a member of the school community for nine years and a teacher for three. This level of experience and comfort with her self as a teacher seemed to be supported by her relatively high scores on her Teacher Self-efficacy survey and her Internal Control Index survey. However, she stated that change to her curriculum “can be…a little bit scary and intimidating and is a little bit more work”
(Fields First Interview, 12/8/2010). This hesitancy to change and implement new strategies quickly was supported by her relatively low score on the Tolerance for Ambiguity survey.

Ms. Fields successfully implemented strategies from the workshop, reported she did so a number of times, and was observed using one of the strategies during an observation. She stated that she enjoyed the format of the workshop and felt that there were several elements and strategies of the workshop that she would continue to use beyond the duration of the study. Both her self-reporting in interviews and her survey results seem to indicate that both the classroom and teacher domain had an impact on her level of implementation. Therefore her Implementation Context would be most heavily impacted by the Classroom and Teacher Domains (See Figure 4.10).

Conclusion

This study sought to examine the lived experiences of six teachers and their contexts for implementing teaching strategies they had learned during a professional development workshop. The study participants were all teachers at an elementary charter school in a large urban area in the western United States. Participants were observed twice conducting classroom lessons, interviewed twice at the beginning and at the end of the study, and were asked to complete surveys about their personality traits, their classroom environments, and their school environment.

The data collected in the study was analyzed within each of the three Implementation Context domains and examined in an effort to reveal trends about how these domains interacted to comprise each teacher’s context for implementation. The results of this study shed light on why teachers do or do not implement classroom
strategies they learn at professional development. The results also indicate what factors contribute to higher rates of implementation. In Chapter Five, based on the findings of this study, I will suggest what school leaders might do to help increase rates of teacher implementation of the things they learn during professional development workshops.

The analysis provided in this chapter revealed several key findings with respect to the context domains for the teachers in this study. The teacher domain was reported by the participants to be an incredibly influential component in the implementation context. Five out of the six teachers in the study cited the teacher domain as the most important domain with respect to their Implementation Context. While this is not surprising given the teacher is the one implementing the strategies, what was noteworthy was that no correlation trend could be made between scores on the personality surveys and rates of implementation. Given the small sample size of this qualitative study no statistically significant correlations between the personality surveys and rates of implementation could have been drawn, yet I would have anticipated that some trends could have been observed. This lack of correlation could be a result of insufficient sample size or perhaps insufficiently sensitive survey instruments. It could also be that individuals with all kinds of personality traits (e.g. high self efficacy, low self-efficacy, external locus of control, etc.) are able to implement new strategies in their classrooms.

A trend that did emerge in the teacher domain was that years of experience, particularly years of experience at the school, did seem to have a positive impact on the rate of implementation. A greater number of years experience working with grade level colleagues also seemed to have positive impact on the rates of implementation. This familiarity with colleagues, curriculum, and school procedures was on the whole positive.
Yet some “experienced” participants did report a hesitancy to make excessive change or to implement new strategies too broadly. So, while experience allowed teachers to implement more than their inexperienced colleagues, it also restrained them from changing “too” much and therefore having extremely high rates of implementation. This may not necessarily be a negative thing. In this study a minimum level of implementation was not prescribed or mandated rather each participant was asked to implement according to their own professional judgment. Judicious implementation may be a desired outcome for experienced teachers. When considering the implementation of new teaching strategies it may be beneficial that during an individual’s skill acquisition phase of implementation that they not implement with such frequency that it is detrimental to classroom order or student learning.

The Classroom Domain in this study did not prove to be an exceptionally influential domain in the participants’ Implementation Contexts with the exception of Ms. Fields. All of the teachers surveyed rated their classes above the mean score of the My Classroom Inventory scale. Only Ms. Fields stated that the classroom environment, specifically her students’ interactions, was a major impact on her ability to implement the strategies she had learned. Yet she was the participant who also had the highest rate of implementation. The classrooms themselves were well appointed and well supplied. While the school buildings themselves were approximately forty years old, the learning environments were warm and inviting and more than suited the needs of the teachers and the students who used them. In addition, the school community benefitted from a supportive parent community who raised funds for classroom supplies and new audio-visual equipment. Also, while CHOICE was by design a diverse community in a diverse
urban area, it could not be described as a school impacted by a large number of socio-
economically disadvantaged students or English Learners.

It cannot be understated when considering the classroom domain (and the school
domain) that as a charter school CHOICE had complete control over hiring decisions for
its teachers. Additionally as a mission driven school designed to be a fully inclusive
educational environment, CHOICE sought and was sought out by teacher’s who wanted
to teach in fully inclusive classroom environments. In this respect, creating teacher
satisfaction with their classroom (and school) environment was initiated during the hiring
process before the teacher even began their first lesson.

The school domain played a slightly larger role in the implementation context for
the participants in this study. It was named by one participant as the dominant domain in
their implementation context though this response seemed highly mediated by the fact
that the participant was in their first full year of teaching at CHOICE. While all
participants rated the CHOICE school environment quite highly on the CUBE survey,
several participants expressed concerns about administrative follow through in regard to
professional development initiatives. Participants stated that being held accountable for
implementation by administrators and having the whole school undertaking the same
professional development effort were motivating factors in implementation of new
teaching methods or curriculum. This finding seemed to indicate that while every
individual teacher would seek their own level of implementation based on the factors of
their own teacher domain, the school factor of administrative follow through, teacher
accountability, and school-wide implementation could, for each teacher, raise their own
personal levels of implementation.
When taken together the three domains comprise the Implementation Context, and it was clear that the six participants in this study were most influenced by the teacher domain of the Context. Classroom environments were sited by the participants as either promoting or inhibiting individual implementation. Likewise, factors in the school domain were described as holding great potential for promoting higher rates of implementation of strategies learned during professional development. However, with each participant there was an underlying level of nuance and complexity that was only revealed during their interview sessions. While five of the six participants cited the teacher domain as most impactful, issues within the other two domains were clearly impactful. This complexity with the Implementation Context will be discussed further Chapter Five.

The findings of this study could have incredibly important implications for professional development initiatives in K-12 schools. If administrators and professional development providers understand the individual teacher factors that contribute or detract from implementation they can make PD design and support plans that take these factors into consideration and maximize use of their PD resources. Additionally, planning for systematic implementation and systems of accountability could also have a positive effect on rates of implementation. Finally, a greater understanding of the how the unique nature of the Implementation Context could lead to greater differentiation in approaches to delivering and monitoring professional development efforts. In Chapter Five, I will discuss the policy implications of these findings as well as areas for further research that could refine and clarify the implication of this study.
Hypothetical Model of Implementation Context for Ms. Marks’s strategy implementation. The major impacts on her implementation were from School and Teacher Domains.
Hypothetical Model of Implementation Context for Ms. Robins’s strategy implementation. The major impact on her implementation were from Teacher Domain and some from School Domain.
Hypothetical Model of Implementation Context for Ms. Fields’ strategy implementation. The major impacts on her implementation were from Classroom and Teacher Domains.
CHAPTER V: DISCUSSION AND CONCLUSIONS

Implementation of pedagogical skills learned during professional development is a dynamic and complex process. An interplay between teacher, classroom, and school factors, a teacher’s Implementation Contexts can be quite varied and dependent on a myriad of issues which may impact levels of implementation for each teacher. As stated in the previous chapter, factors from all three domains potentially and often do have an impact on each teacher’s level of implementation. Though teachers may assert that one domain is more impactful than the other two, these assertions belie the simplicity of their contentions and reveal the true complexity found in the interplay of the domain factors. In fact, this complexity is often not entirely perceptible to the teachers themselves; a fact that makes the job of ensuring high levels of teacher implementation that much more difficult.

This chapter provides a brief summary of my study and its results. The summary is followed by a discussion of the results and how those results relate to the larger body of literature on professional development implementation. An examination of the implications for educational practice based on these finding is also included as well as an examination of the limitations of the study. Finally, this chapter will provide recommendations on potential future research in the area of professional development implementation.

Summary of the study

This study was conducted to examine the lived experience of six elementary teachers in grades 3-5 and their attempts to implement teaching strategies they learned during professional development. By following these teachers and their implementation
process for six months I attempted to gain a deeper understanding of the context in which teachers implemented what they learned during professional development and how their unique Implementation Contexts facilitated or inhibited them from implementing what they had learned. In this study I utilized a mixed methods approach to understand the teacher, classroom, and school factors which impacted the teachers’ implementation experiences and how those factors ultimately combined to comprise each teacher’s Implementation Context.

**Problem**

Tens of millions of dollars and thousands of hours are spent each year in American schools on professional development programs for teachers. These professional development programs are designed to improve the quality of teacher instruction and by extension improve student achievement in K-12 schools. However, over the past three decades it has been consistently reported by teachers and school administrators that teachers do not implement what they learn in professional development in their classroom practice (Guskey and Yoon, 2009; Hill, 2009; Showers, Joyce, and Bennett, 1987; Tate, 2009). The loss of financial resources and the waste of time in this kind of scenario are obvious. Yet even more disheartening in this cycle of low PD implementation is that the corresponding gains in student achievement which were hoped for at the outset of the professional development are left unrealized.

Despite long standing efforts to improve the quality of professional development workshops, their content, their format, and their follow up support, levels of implementation have remained consistently low (Guskey and Yoon, 2009). This condition represents a major challenge to America’s education system. If, as a
profession, education cannot make changes which result in higher implementation rates and lead to corresponding high rates of student success, then it may be that time and money is better spent on activities other than professional development. Yet this decision would seem to leave us all poorer indeed. A great deal of current research points to the need for educators to engage in continuous learning and professional growth, so that they can meet the ever changing learning needs of the students they teach (Guskey and Yoon, 2009). So it would seem the need for solutions to the problem of low PD implementation are needed and needed urgently.

**Purpose Statement**

This study looked at the problem of low implementation not in the confines of the PD workshop but rather within the context of the classroom teacher’s implementation. The purpose of this study was to examine the teacher, classroom, and school factors which impacted levels of implementation and ultimately how these domains interacted with one another to create a context (the Implementation Context) for each individual teacher. The hope of this study was that a better understanding of these factors would indicate reasons why teachers do or do not implement strategies they learn during professional development. Further, that this understanding would lead to specific recommendations concerning what teachers, professional development providers, and school administrators might do to raise rates of PD implementation.

**Research Questions**

The following research questions guided this study:

- What are the teacher perceptions of the Implementation Context factors that facilitate or inhibit implementation of skills learned during PD?
What are the teacher perceptions concerning the convergence of the Implementation Context factors and the impact of that convergence on their ability to implement skills learned during PD?

What can be understood about the Implementation Context from the commonalities and differences of the teachers’ stories about their lived experience of PD implementation?

Methodology

This study was a mixed methods study which utilized survey, observation, and interview data collection methods. This study was conducted at a single public charter school site in a large urban area in the Southwestern United States. Six teachers, each with fewer than nine years of teaching experience, participated in the study. The teachers taught in elementary grades three, four, and five and participated in the study voluntarily after the professional development workshop and research study were advertised on campus by the school administration.

The study took place between the months of November and May during the 2010-2011 school year. The teachers in this study participated in a professional development workshop during the first week of November. During this workshop they were provided training on four cooperative group learning strategies to use with their students as well as best practices for running effective student collaborative groups. At the workshop participants also completed three personality surveys (Locus of Control, Tolerance for Ambiguity, and Teacher Self-efficacy). During the study each teacher participated in an initial interview, were observed by the researcher in their classrooms twice, and participated in a final interview. Participants also completed a survey on their classroom
climate (after first interview) and their school climate (after second interview). In addition, interviews with the founding director of the CHOICE charter school and the interim director were also conducted in order to more clearly understand the school climate, culture, and the school’s standard practices concerning professional development.

**Major Findings**

This study used surveys, observations, and interviews to collect data about the contexts for implementation of all of the participants. Some of the data provided was quantitative in nature (See Fig. 5.1 for Quantitative Data Summary table) while other data derived from observations and interviews which told the “story” of each participant were qualitative. There were five major findings in this study. One of the major findings was derived from the survey data concerning personality traits, two of the major findings came from interviews but involved quantitative data, and the final two major findings arose from the qualitative data from participant interviews and observations.

**Survey Findings – Quantitative.**

The survey data about personality traits yielded no strong correlation data between personality traits studied and rates of implementation. This study had a very small sample size; however, I had hoped that some patterns might emerge from even such a small data set that might indicate that one personality trait or another correlated to certain rates of implementation. This did not prove to be the case. It is possible that a larger sample size might provide more evidence of correlations between personality traits and implementation. That said, a larger sample size would present other issues with respect to identifying and tracking faithful implementation of skills learned during PD.
Interview Findings – Quantitative.

Each participant was interviewed about their experience in the teaching profession and specifically about teaching at CHOICE. Years of teaching experience at CHOICE proved to be the most indicative factor for higher rates of PD implementation. The participants who had the most experience at the school site were the teacher that implemented the most. The teachers with the least experience implemented the least. While implementation rates among the participants with medium levels of experience varied slightly, it seemed quite consistent that the teachers who reported in their interview sessions as having taught at CHOICE for the longest number of years were the teachers who implemented at the highest rates.

The second major quantitative finding from the interview data also involved levels of teacher experience. The data supported the idea that a higher number of years of teaching experience with grade level colleagues had a positive impact on promoting rates of implementation. In several interviews participants cited this as a contributing factor to their levels of implementation. The implementation rate data also supported the idea that experience with colleagues had a positive impact on increased rates of implementation.

Interview Findings – Qualitative.

The qualitative findings emerged from the interviews as themes which repeated from several of the participants. These themes also emerged from the analysis of participants’ overall interview responses regarding their Implementation Contexts.

The first qualitative finding was that external accountability from school administration was perceived by the participants to promote higher levels of PD
implementation and the participants desired this kind of accountability. Prior research supports the idea that external accountability by an administrator, mentor, or coach can have a positive impact on rates of implementation (Knight, 2009). What was made clear in this study is that the study participants wanted that kind of accountability in place. This seems to run contrary of the conventional notion that teachers do not want to be told how to run their classrooms or have someone “looking over their shoulders”. However, the participants in this study desired some external accountability – presumably supportive and professional accountability and not authoritarian dictates – which would support them in achieving higher rates of implementation.

The second qualitative finding was based on analysis of the participants’ reports about the most impactful factors of their Implementation Context. Teachers were often able to cite, sometimes quite confidently, what the most impactful domain was for them in their Implementation Context. However, comments were also made by many participants throughout their interviews which hinted at a much more nuanced picture of their contexts for implementation. This subtle subtext which was present in many of the comments made by the participants reveal that the Implementation Context is complex and not always completely understood or perceived by the teachers themselves. This idea will be dealt with further in the Discussion section on Implementation Context Complexity.
**Fig. 5.1 Quantitative Data Summary**

<table>
<thead>
<tr>
<th></th>
<th>Fields</th>
<th>Simon</th>
<th>Robins</th>
<th>Cruz</th>
<th>Marks</th>
<th>Avery</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Tolerance of Ambiguity</strong></td>
<td>44</td>
<td>60</td>
<td>57</td>
<td>66</td>
<td>59</td>
<td>52</td>
</tr>
<tr>
<td><strong>Internal Control Index</strong></td>
<td>121</td>
<td>110</td>
<td>124</td>
<td>98</td>
<td>108</td>
<td>124</td>
</tr>
<tr>
<td><strong>Teacher Efficacy Scale</strong></td>
<td>21</td>
<td>25</td>
<td>51</td>
<td>24</td>
<td>7</td>
<td>51</td>
</tr>
<tr>
<td><strong>Class Climate Rating</strong></td>
<td>6</td>
<td>17</td>
<td>42</td>
<td>43</td>
<td>37</td>
<td>42</td>
</tr>
<tr>
<td><strong>CUBE School Climate Survey</strong></td>
<td>47</td>
<td>57</td>
<td>51</td>
<td>59</td>
<td>48</td>
<td>54</td>
</tr>
<tr>
<td><strong>Years Teaching</strong></td>
<td>4</td>
<td>4</td>
<td>8</td>
<td>3</td>
<td>6</td>
<td>1</td>
</tr>
<tr>
<td><strong>Years Teaching at CHOICE</strong></td>
<td>2 (also student taught at CHOICE)</td>
<td>4 (6 prior as a classroom aide)</td>
<td>3</td>
<td>3</td>
<td>1</td>
<td>1</td>
</tr>
<tr>
<td><strong>Years working w/ colleague</strong></td>
<td>2 + student teaching</td>
<td>2 + student teaching</td>
<td>3</td>
<td>3</td>
<td>1</td>
<td>1</td>
</tr>
<tr>
<td><strong>Implementation during study</strong></td>
<td>10-15 times</td>
<td>10-15 times</td>
<td>3-4 times</td>
<td>3-4 times</td>
<td>2 times</td>
<td>0 times</td>
</tr>
</tbody>
</table>

**Research Question Analysis**

The research questions of my study focused on the perceptions of the participants regarding the factors and the combination of factors which impacted their implementation of the strategies they learned during the professional development workshop provided. These perceptions were largely explored during the interviews conducted with the teachers. Other data collection methods such as personality surveys and classroom observations helped to contextualize the lived experiences and perceptions which the teachers shared with me during their interviews. In this section I have provided an analysis of the data as it relates to each of the three research questions.
What are the teacher perceptions of the Implementation Context factors that facilitate or inhibit implementation of skills learned during PD?

Five out of six of the teachers cited the teacher domain as the most impactful domain with respect to their Implementation Context. Within the teacher domain years taught at CHOICE and the number of years teaching with grade level colleagues were both factors which promoted higher rates of implementation. Conversely, limited teaching experience at CHOICE as in the case of Ms. Marks inhibited rates of implementation. Teachers all cited experience as a factor that contributed to their implementation stories.

The factors of the Classroom Domain only seemed to have a pronounced impact on one participant. Interestingly that participant, Ms. Fields, was the one who implemented at the highest rate in the study. That said, even she reported that the most impactful domain on her implementation. This response may indicate the complexity of the Implementation Context and/or teachers’ hesitance to place blame on their students for a low rate of implementation. In general, the classroom domain seemed to contain many positive and supportive factors for implementation for the participants in this study.

The School Domain also seemed to play a role in the implementation rates of several of the participants. This was particularly in regard to how administration at a school can provide external accountability for teachers who are trying to implement strategies they have learned during professional development. Participants noted that when administration requires implementation, follows up on implementations, and provided support for the teachers to implement rates of implementation rise. Beyond this
desire for external accountability, the school domain seemed to be a positive one for the participants.

What are the teacher perceptions concerning the convergence of the Implementation Context factors and the impact of that convergence on their ability to implement skills learned during PD?

Participants in this study struggled to describe the interplay between domains of teacher, classroom, and school. The teachers were able to recognize factors within the domains when reporting their implementation experience during interviews, but they didn’t recognize an interaction between the factors within the idea of a unified Implementation Context. This lack of understanding about the complexity of their contexts for implementation is important. If teachers are not able to recognize the myriad of factors and their interaction which are impacting their rates of implementation, it may be difficult for them to make necessary changes to raise their rates of implementation.

What can be understood about the Implementation Context from the commonalities and differences of the teachers’ stories about their lived experience of PD implementation?

The common element of the Implementation Context that seemed to resonate most clearly was the impact of teacher experience at a school site and teacher experience with their grade level colleagues. Higher levels of experience provided a positive influence on higher rates of implementation in this study. There may be many reasons for this result, yet one likely possibility is that with experience at a school site a teacher’s Implementation Context is more readily understood by the teacher. They understand
themselves more clearly as a professional in that specific work setting, they understand the many of the factors of their classroom domain, and they have become familiar with the climate and culture of their school.

Yet, schools are not entirely made up of teachers who all are experienced. And even among experience teachers, other Context factors such as teacher role, the current makeup of students, and school resources can all have an impact on the teachers and their PD implementation. This requires school administrators and professional development providers to be cognizant of the potential factors which inhibit and promote implementation. It also requires them to act on this knowledge and structure professional development experiences and PD support and follow up which take into account the diversity of their teachers and their teachers’ varied implementation needs.

Discussion

Improving teacher quality and the quality of their instruction is the ultimate goal of professional development. This improvement in quality is expected to result in improved student learning and success. The lack of teacher implementation of the strategies they learn during professional development not only represents a major loss of financial resources, it also represents a lost opportunity to improve the quality of education in classrooms and schools across the country. By harnessing what we know about why teachers do or do not implement what they learn during professional development, PD providers and school administrators can better plan PD delivery, PD follow up, and the accountability systems to support teachers. Understanding the implementation process and creating action plans for the effective support high rates of
PD implementation by teachers will in turn raise the quality of instruction and thereby improve children’s ability to be successful in school.

This study followed six teachers and their implementation of skills learned during professional development workshop. In studying these teachers’ implementation, I hoped to shed light on the factors of implementation that facilitated or inhibited implementation of skills learned during PD. This information could then be used by PD providers and school leaders to increase rates of implementation which would help promote student achievement. Using a mixed methods approach provided me with a wide range of qualitative and quantitative data. An analysis of this study provided important considerations about teacher personality traits, teacher experience, and the complex nature of the Implementation Context.

As noted previously no correlations could be drawn between implementation rates and the scores on the personality trait surveys. It may be that a large enough sample size was not present in this study to reveal these potential correlations. Or it could be that no consistent correlations actually exist. Given the wide diversity of personality of teachers and the wide variety of individuals who have been successful in the profession of teaching, it may well be that no specific set of personality traits is predictive of high rates of implementation or even effective teaching. However, it seems that an administrator or professional development provider would do well to consider the wide variety of personality traits among the teachers who are present for a professional development workshop. While no one trait or set of traits among teachers may directly predict implementation rates, an understanding of different personality traits and working styles
may be important and guiding to a school administrator who wants to help their teachers implement skills learned in PD at the highest rates possible.

The number of years of teaching at a school and number of years working with colleagues proved to be the most indicative quantitative data in this study. Implementation rates were higher among participants who had taught at CHOICE the longest and who had experience working with their grade level colleagues. Both of these factors should be taken into account by school administrators when planning the follow up and support required by new and established teachers who are attempting to implement new skills. The data clearly indicated that being new to a school because of the demands of being new, even as an experienced teacher, made it harder to implement new skills in a robust manner.

Experienced teachers were more likely to implement and implement more frequently. This was perhaps due to their level of comfort with the school, their colleagues, and/or their ability as teachers in their current setting. Paradoxically, however, based on interview data with participants, there also seemed to be a dampening effect with experience as well. At a certain point more experienced teachers were not willing to throw out established lessons or practices just for the sake of trying something new. This “experience paradox” occurred when longer tenured teachers were willing to implement but only up to a certain point. This may not necessarily be a bad thing. Experienced teachers may be very good judges of just how much a new practice or teaching strategy should be implemented. This balance between high levels of implementation of new skills and retention of established lessons and practices is important for PD providers and administrators to consider.
Finally, in synthesizing the interview data, it became clear that the Implementation Context was complex, and that teachers were not always able to grasp or describe the complexity of their own situation. The participants espoused beliefs about what impacted their implementation. Throughout the data presented in Chapter Four participants discussed many impactful factors from the classroom and teacher domains but when asked to identify the most impactful factor turned immediately to the teacher domain. The subtext of their interview comments revealed there was more to their implementation stories. Several of the participants spent large portions of their interviews talking not about themselves as teachers but rather about the school and its systems or talking about the support of their colleagues or the challenges of the students in their classroom. The contrasts between participants’ espoused beliefs about their implementation and the implied subtext beliefs about their Implementation Context revealed in their interview responses is explored more thoroughly below in Implementation Context Complexity.

Implementation Context Complexity.

Though the participants in the study were able to identify their beliefs about what factors loomed largest in their Implementation Context, there seemed to be substantial subtext within the comments made by each participant. This subtext belied the complexity of the context for implementation, and perhaps the teachers’ misunderstanding or insufficient understanding of their Implementation Context.

Ms. Fields’s case study was examined as one of a teacher with high implementation relative to her peers. She identified the teacher domain as the most influential for her Implementation Context. Yet, she also said that she was tempted to
say the classroom domain was the most influential. Classroom factors came up several times in her interview sessions and during her first interview session she was initially upset about what a difficult day she had just gone through with her students. Ms. Fields may have said that the teacher domain was the most significant for her; however, her reasoning that “ultimately [her] responsibility to implement the strategies” seemed a rationalization tied to her beliefs about her authority and role in the classroom rather than a statement about what the real factors were in her current teaching context and how those factors were impacting her implementation.

Similarly, Ms. Robins stated that implementation was ultimately her decision and that she was in control of whether or not she implemented. However several times throughout both interviews she spoke about the role of the school administration in holding teachers accountable for implementation of PD. Like Ms. Fields she felt she was the authority in the classroom that could make the decision whether or not to implement, but also made other comments that indicated the important role of another domain.

Ms. Marks selected the School Domain as her most impactful domain. Her reporting about her implementation story did contain many references to her struggles with the structures of the school, the way in which grade levels at CHOICE planned, and the time demands of a teacher at CHOICE. However, her personality survey scores, particularly Teacher Self-efficacy, were significantly lower than other participants. She was also a new teacher at CHOICE and was paired with a new special education co-teacher as well. These facts indicate that significant factors were present in Ms. Marks’s teacher domain, yet she chose to identify the School Domain as most significant.
Other participants in the study also identified the teacher domain as the most significant factor but still expressed (either in interview or survey) the impacts of other domain factors. Ms. Avery did not attempt implementation at all and cited her role as a special education teacher as the reason she did not implement though she acknowledged that she could have taken the opportunity to do so given her role as a co-planner with her general education teaching team. What she did not identify was her role as a new teacher. Additionally, Ms. Avery’s Tolerance of Ambiguity score was the second lowest of all participants. This relative aversion to change or ambiguity may also have played a factor in her lack of implementation. All of these issues would be factors of the Teacher Domain which Ms. Avery selected as most impactful, but not for these other reasons. Based on her comments it seems she was not able to describe the complexity that existed for her Implementation Context within even that one domain area.

Mr. Simons and Ms. Cruz were grade level co-teachers with Ms. Fields and Ms. Robins respectively. They implemented at the same rate as their co-teachers. They even had similar subtext concerns about the same domain issues as their co-teachers – classroom and school respectively. They both identified the teacher domain as most impactful for their implementation. Yet neither Mr. Simons nor Ms. Cruz (or for that matter Fields or Robins) identified the reciprocal influence of their grade level teachers or the impact of the school mandated grade level planning procedures.

Perhaps more thorough questioning on my part could have revealed that the teachers had a more nuanced understanding of the all the factors that were impacting their Implementation Context. That said, most of the participants were very quick to answer what domain they felt had the most impact on their implementation. Even those who
noted the impact of another domain after a moment of hesitation settled easily on one domain. What was missing from each teacher’s discussion about their context for implementation was a layered picture of a complex and interconnected mosaic of factors combined to create an Implementation Context. And yet, it existed whether they were able to describe it or recognize it in full.

Ms. Field’s context is incomplete without her personality and skills as a teacher, matched with the challenges of a particularly difficult class, ensconced in her nine year history with the school, its methods and philosophies, and her beliefs and familiarity with them. Likewise, Ms. Marks’s context is only fully understood with an understanding of her status as a new teacher to CHOICE, her particular personality traits, and CHOICE’s school policies and systems along with her responses to them. In short, the Implementation Context for any teacher is complex, and if professional development providers and administrators ignore that complexity, they put the implementation of professional development in peril.

Teachers too must realize the complexity and nuance of their Implementation Context to most effectively implement within that context. However, it is the job of the PD providers and administrators to help teachers develop the self reflection necessary to understand their contexts for implementation. It is also necessary for PD providers and administrators to differentiate the PD experience and PD follow up in a way that allows teachers with a variety of needs (and strengths and challenges) within their Implementation Contexts to implement at higher rates. A description of these proposed practices of Differentiated Professional Development are proposed in the Implications section of this chapter.
Limitations

This study used a small sample size; therefore, the impact of the personality traits studied may not have been captured by the instruments used across the small number of participants. The small sample size may also make it difficult to assert the validity of the findings and implications of this study. While the study is informed by the literature base concerning professional development and the recommendations made in this chapter are in concert with other findings, it is important to note the limitations present with the small sample size of the study.

Another limitation of this study is that only one kind of professional development workshop was studied. Because of this, factors concerning the types of professional development content (i.e. teaching strategies, curriculum materials, classroom management strategies, etc.) were not addressed or examined in this study. For example, it may be that some kinds of professional development are more attractive to teachers of varying levels of teaching experience. There may be certain kinds of professional development content which is more easily implemented than others. While this would be important information for a PD provider or administrator to know, it was not information examined in this study.

Also, this study took place over the course of six months. A study conducted across a longer time frame might reveal changes or patterns of implementation across time. For example, early adopters might discontinue use or those who have lagged in adoption of the practices may find new ways to incorporate the teaching strategies. This arc of implementation practice was not something that was considered in this study. An understanding of the ebb and flow of implementation rates would be an important factor
to consider for a school administrator. This is especially important when trying to
determine successful program implementation which takes place over a series of school
years.

Another limitation to this study was that it was a single site study and therefore the
full impact of the school domain factors of the Implementation Context may not have
been fully explored. While this study did examine multiple teachers in multiple
classrooms, only one school site was represented in the findings. This may mean that the
school domain and its impact could have been misrepresented. It is difficult to say
whether the school site factors ultimately were overrepresented or underrepresented in
this study without the benefit of comparison data from another site. To truly understand
this domain and to have a fuller understanding of the Implementation Context additional
studies should be conducted at other sites or using a multisite research design.

A final limitation to this study is the limited ability to predict the generalizability of
the findings or implications. Given the small sample size, limited time frame, and single
site design, it is difficult to predict whether or not the findings of this study would hold
true across various schools. School culture played a significant role in the findings of this
study as did the specific grade levels and experience levels of the participants.

However despite these acknowledged limitations there remains sufficient data to
support the recommendations for practices in the delivery and follow up for professional
development. There is a strong likelihood that following these recommendations would
lead to improved rates of professional development implementation. These
recommendations are discussed in the next section on Implications for policy and
practice.
Implications for policy and practice

This study focused on the implementation of professional development by teachers. Certainly implications for teachers can be found among the data collected. However, the implications that I wish to focus on pertain to professional development providers and the school administrators who are responsible for the provision and follow up of professional development. These implications provide important considerations for those in schools whose role it is to provide PD to teachers and to help ensure that the teachers are implementing what they have learned.

The first implication is recognition by both professional development providers and school administrators of the unique context for implementation for each teacher. Too often professional development is provided to teachers as if all of the teachers were the same, all going back to the same school and same classroom to teach the same homogenous students. This of course is not the case and yet teachers are provided with the same workshop, asked the same kinds of questions, and often provided with the same follow up support. PD providers should recognize the multiple contexts and perspectives that are brought into their workshops by the various teachers in attendance. Drawing on the data from Chapter Four, it is clear that Ms. Fields and Ms. Marks needed vastly different levels of support in order to achieve similar rates of high implementation.

Further administrators and PD providers should encourage teachers to reflect on their contexts for implementation during the PD workshop. Professional development providers should always include in their training time in which teachers reflect on and plan for implementation factors present in their classrooms, their schools, and within themselves as teachers which may support or inhibit implementation. Reflection about
their contexts and projections about the kinds of roadblocks and challenges they will encounter will help teachers prepare for implementation and help them become more aware of their own Implementation Context. Additionally it may be beneficial for them to identify what kind of supports they will need to be effective implementers based on their reflections. These supports can be taken into consideration by administrators when planning for PD follow up. School administrators should also recognize that teachers will require varying levels of support, feedback, and guidance when they attempt to implement what they learn during professional development.

Professional development delivery and its follow up and monitoring should not be “one size fits all” but rather all components of the professional development process should be thoughtfully differentiated to meet the needs of the teachers and their specific Implementation Contexts. For example, beginning teachers may need more support and encouragement to try out their new skills. Given all the demands on a new teacher they may even need release time from the classroom to plan out lessons which incorporate the new skills learned during PD. Meanwhile, early adopters may need a booster session to keep them on a positive road to implementation so as to not to let their early fervor fade over time. All of these things can be considered when the school administrator is able to recognize the various needs of their staff with respect to PD implementation.

In a similar vein, professional development providers and school administrators must carefully consider and plan for the significant factor of teacher experience and the experience of teaching teams when supporting teacher implementation of strategies learned during professional development. Experienced teachers and teaching teams who have worked together for several years may have the ability to implement more quickly
and easily than their less experienced counterparts. However these more experienced educators may also self-limit wholesale adoption of innovations and instead rely more readily on methods or curriculum they have used in the past. They may become victims of the “experience paradox”, and because of this, experienced educators may need more support in becoming willing to change portions of their curriculum or practice which they have relied upon for many years. Conversely, newer teachers or teaching teams who have not worked together for very long may need support in making the initial attempts to implement. Both groups of teachers’ rates of PD implementation may at various times in a given year look very similar and yet the approach to helping these two groups of educators take the next steps in raising their rates of implementation may look quite different. PD providers and administrators should plan accordingly.

Professional development providers and school administrators also need to plan for follow up procedures and school policies which create external accountability for teachers to implement. Teachers in this study cited external accountability as an important factor in raising the rates of implementation. This accountability can fall into two categories: collective and individual. Collective accountability are measures put in place in which whole groups of teachers (a grade level, a division, a school) need to respond. These accountability measures could look like bi-monthly observations, peer planning and demo lessons, and group-wide expectations regarding levels of implementation. These collective accountability measures are set and maintained by school administration or appropriate personnel. Individual accountability can also important in promoting rates of implementation. These accountability measures include personal goal setting, attaining incremental objectives toward that goal, and finding ways
to deepen understanding about the PD skills or one’s facility with implementing those skills in the classroom. These kinds of individual accountability measures can be recorded and monitored by coaches, mentors, PD providers, or administrators.

All of the above implications can be combined in a central concept that I would call *Differentiation of Professional Development*. Differentiation is an educational concept and practice that has gained great deal of traction in American classrooms over the past thirty years (Marzano, 2007). Differentiation is the idea that lessons that teachers present can be designed so that a wide variety of learning needs are accommodated in a single classroom. It is an idea that has a great deal of currency in today’s educational system. It stands to reason then that adult learning, while perhaps different, is at root not incredibly apart from that of K-12 students. Therefore good teaching and learning practices for K-12 students may well be good teaching and learning practices for adults. I contend that one implication of my study is that a differentiated approach to professional development is required given the complex and myriad contexts each teacher. Just as a teacher would differentiate their lesson plans for the seven year old Language Learner who struggles in English but is gifted in math calculation, so must the school administrator differentiate for the teacher who is new to the school as well as the teacher who has 39 students in their class, and the teacher who is a 40 year veteran, and the teacher who has just changed grade levels. Below are the components of the *Differentiated Professional Development* approach that I would recommend based on the findings of my study (See Fig. 5.2).
**Fig. 5.2 Differentiated Professional Development**

| Know your audience | *PD providers should survey their participants (in advance if possible) about the domain areas (school, classroom, teacher) in which they will implement and use that information to plan targeted examples in their PD. They can also use this information to support participant learning during the workshop.* |
| Reflection on Domains | *Teachers should have an opportunity during the professional development to reflect on their context and component context domains, challenges they might encounter, things that will support their implementation, and supports they may need to help them implement robustly.* |
| Targeted Follow Up | *School and district administrators should plan PD follow strategically to provide the appropriate amount and kind of support to teachers. They should especially consider teacher experience at a school site and experience with colleagues as well as any classroom or school issues that may be potential implementation impediments.* |
| Accountability | *Collective and individual systems of accountability should be put in place by school administrators to help promote high levels of implementation by all teachers.* |

**Recommendations for future research**

This study raised many more questions for me than it did provide answers. While many of the findings lead to substantive recommendations and implications, further study is required to further refine an understanding of the Implementation Context and to realize what a deep understanding of the Implementation Context can contribute to solving the problem of low rates of PD implementation. To that end I have proposed several recommendations for future research.

One potential study could be a quantitative study examining the correlation between rates of PD implementation and personality traits, especially the trait of Teacher Self-efficacy. No personality trait in this study presented a correlation to rates of
implementation. However, the Teacher Efficacy trait seemed to hold the most potential for revealing a correlation. A correlation between high rates of implementation and self-efficacy may lead to changes in any number of practices from approaches to follow up and support, to helping teachers develop self-efficacy, to practices of hiring individuals for teaching positions.

Another potential study would examine the impact of the content of the professional development workshop on the rates of implementation for teachers. The study that I conducted did not factor in the impact of the PD content. The content provided may have been difficult, or boring, or highly motivating. Without a comparison PD it is hard to determine what effect the PD content of this study had on rates of implementation. Future studies could examine questions of what kinds of PD are most likely to be implemented and why certain kinds of implementation supports are necessary to get teachers to implement professional development content that is often implemented less frequently. This study could also be a meta-analysis of other studies conducted on various types of professional development.

Finally, repetitions of this study could also be conducted in different settings and with different grade levels and different ranges of teacher experience. Data collected in repetitions of this study could also serve to illuminate the differences in PD implementation among grade levels, content areas, and various teacher experiences and preparations. In addition, these repetition studies could yield additional information on the impact of the school domain factors of the Implementation Context. Given that this was a single site study this area of the Implementation Context may not be as fully represented in the findings of this study.
Conclusion

I hope that this study served to illuminate the “other side” of professional development: Implementation. Ultimately, implementation of professional development is change, and all change is personal. Thousands of teachers every year attend professional development programs and workshops with groups of their colleagues. Yet in the end, they implement that professional development personally - in their own schools, in their own classrooms, with their own sets of personal and professional skills.

All three of these domains of impact (school, classroom, and teacher) act at once to create a unique context for implementation for that teacher. Largely, the research has shown us that more often than not, regardless of the quality of the PD, teachers are not implementing (Guskey and Yoon, 2009). In this study I tried to shed some light on what in the context of each teacher’s implementation might be driving this lack of implementation.

I found that the factors involved are indeed complex and made more so by the unique interplay of these factors for each individual teacher. This complexity however should not be mistaken for bad news or even reason not to attack the problem of low PD implementation. In fact acknowledgement of the complexity and subsequent modifications of approaches to professional development by providers and administrators could yield increased rates of PD implementation. Further, utilizing the other data identified in this study regarding teacher tenure at a school and number of years teaching with colleagues could be quite powerful. Recognizing the impact that just those two factors had on rates of implementation could be an important consideration in planning
for different levels of support for PD implementation required by different teachers. Finally, reorienting PD delivery, follow up, and accountability procedures to align with my suggested Differentiated Professional Development approach could hold great promise in moving each teacher toward their optimum level of PD implementation.

In the end, what cannot be understated is the need to make a change on the implementation side of professional development. Stating that a PD workshop was good but none of the teachers implemented what they learned is akin to claiming that a car salesman sold the car but no one bought it. And yet this is the current state of professional development in the field of education. Countless hours are logged in PD workshops and vast sums of money are spent by schools and districts, yet implementation rates remain low. Our time, our resources, and our children’s education are all too important to allow low rates of implementation to persist without taking action to remedy this issue. It is my hope that this study provides necessary information and recommendations for PD providers and school administrators wishing to take action on this critical education issue.
REFERENCES


Fraser, B. (1982). *Assessment of Learning Environments: Manuel for Learning Environments Inventory (LEI) and My Classroom Inventory (MCI), Third Edition.* Tests/Evaluation Instruments (ERIC).


*Educational Leadership*, 59(6), 45-51.


Please read each statement. Where there is a blank ________________, decide what your normal or usual attitude, feeling, or behavior would be:

Rarely = less than 10% of the time.
Occasionally = about 30% of the time.
Sometimes = about 50% of the time
Frequently = about 70% of the time.
Usually = More than 90% of the time

1. When face with a problem I ________________ try to forget it.

2. I ________________ need frequent encouragement from others for me to keep working at a difficult task.

3. I ________________ like jobs where I can make decisions and be responsible for my own work.

4. I ________________ change my opinion when someone I admire disagrees with me.

5. If I want something I ________________ work hard to get it.

6. I ________________ prefer to learn the facts about something from someone else rather than have to dig them out for myself.

7. I will ________________ accept jobs that require me to supervise others.

8. I ________________ have a hard time saying “no” when someone tries to sell me something I don’t want.
9. I _____________ like to have a say in any decisions made by any group I’m in.

10. I _____________ consider the different sides of an issue before making any decisions.

11. What other people think _____________ has a great influence on my behavior.

12. Whenever something good happens to me I _____________ feel it is because I’ve earned it.

13. I _____________ enjoy being in a position of leadership.

14. I _____________ need someone else to praise my work before I am satisfied with what I’ve done.

15. I am _____________ sure enough of my opinions to try and influence others.

16. When something is going to affect me I _____________ learn as much about it as I can.

17. I _____________ decide to do things on the spur of the moment.

18. For me, knowing I’ve done something well is _____________ more important than being praised by someone else.

19. I _____________ let other peoples’ demands keep me from doing things I want to do.

20. I _____________ stick to my opinions when someone disagrees with me.

21. I _____________ do what I feel like doing not what other people think I ought to do.

22. I _____________ get discouraged when doing something that takes a long time to achieve results.
Appendix B

Teacher Efficacy Scale (Gibson & Dembo, 1988)

Response choices: 1=disagree very much, 2=disagree moderately, 3=disagree more than agree, 4= agree more than disagree, 5=agree moderately, 6=agree strongly.

1. When a student does better than usual, many times it is because I exerted a little extra effort. _______

2. The hours in my class have little influence on students compared to the influence of their home environment. _______

3. If parents comment to me that their child behaves much better at school than he/she does at home, it would probably be because I have some specific techniques of managing his/her behavior which they may lack. _______

4. The amount that a student can learn is primarily related to family background. _______

5. If a teacher has adequate skills and motivation, she/he can get through to the most difficult students. _______

6. If students aren’t disciplined at home, they aren’t likely to accept any discipline. _______

7. I have enough training to deal with almost any learning problem. _______

8. My teacher training program and or experience has given me the necessary skills to be an effective teacher. _______
9. Many teachers are stymied in their attempts to help students by lack of support from the community. ________

10. Some students need to be placed in slower groups so they are not subjected to unrealistic expectations. ________

11. Individual differences among teachers account for the wide variations in student achievement. ________

12. When a student is having difficulty with an assignment, I am usually able to adjust it to his/her level. ________

13. If one of my new students cannot remain on task for a particular assignment, there is little that I could do to increase hi/her attention until he/she is ready. ________

14. When a student gets a better grade than he usually gets, it is usually because I found better ways of teaching that student. ________

15. When I really try, I can get through to most difficult students. ________

16. A teacher is very limited in what he/she can achieve because a student’s home environment is a large influence on his/her achievement. ________

17. Teachers are not a very powerful influence on student achievement when all factors are considered. ________

18. If students are particularly disruptive one day, I ask myself what I have been doing differently. ________

19. When the grades of my students improve it is usually because I found more effective teaching approaches. ________
20. If my principal suggested that I change some of my class curriculum, I would feel confident that I have the necessary skills to implement the unfamiliar curriculum. 

21. If a student masters a new math concept quickly, this might be because I knew the necessary steps in teaching that concept. 

22. Parent conferences can help a teacher judge how much to expect from a student by giving the teacher an idea of the parents’ values toward education, discipline, etc. 

23. If parents would do more with their children, I could do more. 

24. If a student did not remember information I gave in a previous lesson, I would know how to increase his/her retention in the next lesson. 

25. If a student in my class becomes disruptive and noisy, I feel assured that I know some techniques to redirect him quickly. 

26. School rules and policies hinder my doing the job I was hired to do. 

27. The influences of a student’s home experiences can be overcome by good teaching/teachers. 

28. When a child progresses after being placed in a slower group, it is usually because the teacher has had a chance to give him/her extra attention. 

29. If one of my students couldn’t do a class assignment, I would be able to accurately assess whether the assignment was at the correct level of difficulty. 

30. Even a teacher with good teaching abilities may not reach many students.
Appendix C

**TOLERANCE OF AMBIGUITY SCALE (BUDNER, 1962)**

Please respond to the following statements by indicating the extent to which you agree or disagree with them. Circle the number at the right that best represents your evaluation of the item.

<p>| | | | | | | |</p>
<table>
<thead>
<tr>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>SA</strong></td>
<td><strong>MA</strong></td>
<td><strong>A</strong></td>
<td><strong>N</strong></td>
<td><strong>D</strong></td>
<td><strong>MD</strong></td>
<td><strong>SD</strong></td>
</tr>
<tr>
<td>1</td>
<td>An expert who doesn’t come up with a definite answer probably doesn’t know too much</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
</tr>
<tr>
<td>2</td>
<td>I would like to live in a foreign country for awhile</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
</tr>
<tr>
<td>3</td>
<td>There is really no such things as a problem that can’t be solved</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
</tr>
<tr>
<td>4</td>
<td>People who fit their lives to a schedule probably miss most of the joy of living</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
</tr>
<tr>
<td>5</td>
<td>A good job is one where what is to be done and how it is to be done are always clear</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
</tr>
<tr>
<td>6</td>
<td>It is more fun to tackle a complicated problem than to solve a simple one</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
</tr>
<tr>
<td>7</td>
<td>In the long run, it is possible to get more done by tackling small, simple problems rather than large and complicated ones</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
</tr>
<tr>
<td>8</td>
<td>Often the most interesting and stimulating people are those who don’t mind being different and original</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
</tr>
<tr>
<td>9</td>
<td>What we are used to is always preferable to what is unfamiliar</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
</tr>
<tr>
<td>10</td>
<td>People who insist upon a yes or no answer just don’t know how complicated things really are</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
</tr>
<tr>
<td>11</td>
<td>A person who leads an even, regular life in which few surprises or unexpected happenings arise really has a lot to be grateful for</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
</tr>
<tr>
<td>12</td>
<td>Many of our most important decisions are based on insufficient information</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
</tr>
<tr>
<td>13</td>
<td>I like parties where I know most of the people more than</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
</tr>
<tr>
<td></td>
<td>ones where all or most of the people are complete strangers</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>---</td>
<td>----------------------------------------------------------</td>
<td>---</td>
<td>---</td>
<td>---</td>
<td>---</td>
<td>---</td>
</tr>
<tr>
<td>14</td>
<td>Teachers who hand out vague assignments given one a chance to show initiative and originality</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
</tr>
<tr>
<td>15</td>
<td>The sooner we all acquire similar values and ideals the better</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
</tr>
<tr>
<td>16</td>
<td>A good teacher is one who makes you wonder about your way of looking at things</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
</tr>
</tbody>
</table>
Appendix D

My Class Inventory—Short Form for Teachers (Sink and Spencer, 2005)

Response choices: 1= strongly disagree, 2=disagree, 3=neutral, 4= agree, 5= strongly agree

1. The students enjoy their schoolwork in the class. ________

2. Students do not fight with each other. ________

3. Students often race to see who can finish their work first. ________

4. In the class the work is hard to complete. ________

5. In the class everyone is friends. ________

6. The school counselor helps students feel good about learning in this classroom. ________

7. Students are happy with the class. ________

8. Some students in the class are mean. ________

9. Most students want their work to be better than their friend’s work. ________

10. Most students cannot complete their assignments without a lot of help. ________

11. The school counselor aids with building and classroom cohesion. ________

12. Students in the class have good buddies. ________

13. Students seem to like the class. ________

14. Many students in the class provoke tension. ________

15. Some students feel bad when they do not do as well as others. ________

16. Only the brightest students can do all the work. ________

17. Because of the school counselor’s visits to the classroom, the students tend to work more cooperatively. ________

18. All students in my class get along well with each other. ________
19. Most students appreciate their learning experiences in the class. ________
20. Certain students always want to have their own way. ________
21. Some students always try to outperform their peers. ________
22. The schoolwork is too complicated for the students. ________
23. The school counselor helps make the learning less difficult. ________
24. All students in the class are fond of one another. ________
25. The students see the class as fun. ________
26. Students in the class do not argue with each other. ________
27. Only a few students in the class want to be the top scorers. ________
28. Most students in the class do not know how to do their work very well. ________
29. The school counselor helps create unity in the classroom. ________
30. Students in the class care for each other as friends. ________
Appendix E

CUBE School Climate Survey

Response choices:
1= strongly disagree, 2=disagree, 3=neutral, 4= agree, 5= strongly agree

1. I have been able to deter bullying behavior among students. ________

2. Teachers at this school are able to stop someone from being a bully. ________

3. I address bullying behavior in my classroom or at the school at least once per month. ________

4. Most students at this school would not be successful at a community college or university. ________

5. Students at this school are capable of high achievement on standardized exams. ________

6. Students at this school are not motivated to learn. ________

7. We are preparing students to become productive citizens. ________

8. Students in this school will have difficulty with core academic subjects regardless of strength of instruction. ________

9. There are students who will be successful in this school because of their race. ________

10. Racial barriers to educational and economic opportunity no longer exist in the United States. ________

11. Administrators at this school trust my professional judgment. ________

12. Teachers at this school exercise good professional judgment. ________

13. I look forward to coming to work most days. ________