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Chair

University of California, San Diego
San Diego State University
California State University, San Marcos
2009

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DEDICATION

This dissertation is dedicated to the deserving students of Mission Middle School. You are my heroes and my inspiration! Every day you confirm my belief that ALL students can learn and achieve success. Thank you for believing in me, too!
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ABSTRACT OF THE DISSERTATION

Understanding Teacher Beliefs with Reflective Tools

by

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Teachers are central to student learning. Without improving teacher practice, meeting the goals of No Child Left Behind is unlikely to occur. Often school reforms focus on school structures and programs and give little attention to helping teachers reflect on their beliefs and subsequent practices. Recent efforts to increase teacher collaboration time and develop professional learning communities represent promising reform efforts. Yet little is known about reflective tools that could assist teachers in reflecting on their beliefs and practices and how such tools could assist school leaders to engage in much more substantive evaluation conversations that could lead to real change.

This study focuses on exploring teacher beliefs and their link to the classroom using a phenomenological perspective. Using interviews, a self-reflective tool called Kelly’s Repertory Grid, and video elicitation of a classroom lesson selected by the teacher participants, an understanding of teacher beliefs and where these beliefs come from arose or came to the surface. Results from this study show that reflective tools
produce varying types of reflection. In addition, the study shows that teachers who use tools that allow them to remain in control of the reflective processes are able to reflect upon making changes in classroom practices. This study provides insights into how reflective tools can support administrators and teachers in examining their beliefs and practices in ways that could lead to greater ownership of the reform process, as teachers and administrators learn more about themselves.
CHAPTER 1:

INTRODUCTION

A review of the literature on school reform suggests that most national reform efforts begin by focusing on personnel, programs, and structures. The major thrust of reform movements is to change instructional practices in the interest of improving student learning. To change practice, the focus is often on adoption of a particular program (e.g. *Reading First* or *Success for All*). These programs require teachers to adopt a particular curriculum, follow scripted lessons, and participate in professional development to learn how to implement the program. Coaches may be hired to assist and monitor adherence to these new instructional practices. Even with considerable efforts to help teachers learn new approaches, as Cohen and Ball (1989) found in their studies of new mathematics programs, teachers often failed to follow the new practices. A missing dimension in these reform efforts may be lack of opportunity for teachers to individually or collectively understand and reflect on their educational beliefs and subsequent instructional practices. Thus, although the emphasis of present reform efforts is on changing teacher practice, an under-explored area is teachers’ beliefs about teaching and learning and what role these beliefs may play in improving instruction. This phenomenological study explores the relationships between teachers’ beliefs and the decisions they make about instruction.

In the existing literature, teacher belief systems are examined through multiple lenses. Teacher belief systems are explained through studies focusing on early childhood experiences, life experiences, teacher preparation programs, professional
development, and experiences with students within the classroom. In addition to these studies, there is a body of literature that focuses on pivotal life experiences and how beliefs are formed from these. As important as the source of teacher beliefs may be, it may be more critical to find tools that will help teachers reflect on those beliefs, whatever their origin, and to understand how these beliefs may be supporting or constraining their success with students. Furthermore, considerable administrative time in schools is devoted to teacher evaluation; yet little attention has been given to the evaluation tools that could be used by administrators to support teacher reflective practices that might lead to real change. This study strove to fill this gap as it explored three reflective tools and processes, teachers’ responses to these tools, and the beliefs and practices that these tools allowed teachers to surface. In particular, this study focused on tools such as Kelly’s Repertory Grid Technique (Munby, 1982) and Video Reflection.

Since the beginning of the current movement toward accountability and the No Child Left Behind (NCLB) Act (2001), children of culturally and linguistically diverse backgrounds have been given a voice as their lack of achievement on standardized testing was revealed. For decades the achievement gap between white students and low-income students and students of color was painfully ignored—at considerable cost to these children—because of the failure to disaggregate achievement data by racial and ethnic group, disability, or English language fluency. Nationally, districts and schools have been impacted greatly by “high stakes” standardized testing systems that now put great pressure on educators to restructure schools and reform outdated
systems that do not meet requirements. For failing schools, government sanctions expect school staff to embrace any one of several reform models or may require complete restructuring depending on the number of years the school has been designated as a “Program Improvement (PI) school.” Many reform efforts lead to major changes in curriculum, length and structure of school day, and various types of interventions provided to students. However, rarely do these reforms foster dialogue among teachers about the beliefs and assumptions that may guide their instruction. The purpose of this study was to test reflective processes and tools that may provide teachers with more insights into their own beliefs and to explore how these beliefs may shape their instructional practice.

The Examination of Teacher Beliefs

Attention to teacher beliefs seems to be missing from much of the reform literature. For example, Coburn (2003) argues that to scale up reform—“increasing the number of teachers, schools, or districts involved” (p. 3)--requires systems to address spread, depth, sustainability, and ownership by teachers. It was anticipated that teachers would gain deeper knowledge of and engagement with the reform process. Yet gaining depth, spread, and ownership often requires teachers to change their practices, sometimes extensively. Such changes are unlikely without teachers having an opportunity to reflect on their current practices or to understand the beliefs underlying those practices and beliefs that might be required to support new practices.

When applying Coburn’s framework to analyze data from a multi-year systemic reform initiative in one district, Chrispeels and Gonzalez (2006) found that as
teachers worked together at their grade levels, they gained new insights into their instructional practice and explicit actions were taken to align practices throughout the system. In addition, they argued that more attention needed to be given to “identifying the district’s core values and enduring purposes and working with all shareholders to co-construct and co-own the vision, not just share it” (p. 267). These findings support the idea that reform initiatives may need to start with examining and exploring beliefs and values. Thus, uncovering teacher beliefs may be the first step to transforming the organization.

Definition of Beliefs

Beliefs, in this study, are defined as anything that a person regards as true (Azjen & Fishbein, 1980). According to Pajares (1992), since beliefs must be inferred, a belief is more certain when it can be evidenced in both the words and actions of an individual. Beliefs, at times, may not be recognized simply because individuals may not be consciously aware of their beliefs (Buzeika, 1996). According to Godwin (1991), the unconscious mind is the function of beliefs; it is the part of the mind that controls things, including memory and feelings. The literature also provides insight into the development of beliefs in general. According to Godwin, “beliefs develop around our values.” Both have a very powerful effect on one’s life because information is filtered through these (Godwin, 1991).

The literature on the formation of values and beliefs is comprised of three stages of development: the Imprint Period, the Modeling Period, and the Socialization Period (Massey, 1979). The literature review in Chapter Two discusses the notion of
programming the behaviors of individuals that result from a series of processes. Some of these are considered either “formal” or “informal” influences on teacher practices. Those informal factors include family, friends, media, where an individual grew up, socioeconomic status, and religion. Formal influences include educational experiences, in-service experiences, and teacher preparation experiences.

Specifically, the literature reveals that studies of teacher beliefs and mental models have focused on three key stages of belief development: (a) beliefs developed early during teachers’ own schooling and childhood experiences (Achinstein, Ogawa, & Speiglman, 2004; Barlow and Reddish, 2006; Lortie, 1975; Weick, 1995), (b) beliefs formed while in teacher preparation programs (Achinstein, 2002; Avraamidou & Zembal-Saul, 2003; Hall, 2004; Timmerman, 2004), and (c) beliefs formulated after entering the profession (Beswick, 2004; Munby, 1982; Patterson, 2002). Individuals who find their way into teaching are shaped by all of these informal and formal processes. It was not the purpose of this study to explore these forces in depth, but rather to see which examples or factors teachers themselves may surface in the process of reflecting on current classroom practices. It is recognized that rarely will teachers, once they are in the field and profession, have an opportunity to reflect through a solicited and organized process on the life experiences that have shaped their practice. What is needed are tools that will allow teachers to gain insights into their current practice and reflect on how well those practices may be serving their goals and aims for students.
In addition to the stages when beliefs tend to develop, the literature also documents that teacher beliefs were influenced via one or a combination of the following: reflective practices (Avraamidou & Zembal-Saul, 2000; Timmerman, 2004; Rimm-Kaufman, et al., 2006), collaboration (Achinstein, 2002; Frykholm, 2004;), and professional development (Bloom et al., 1998; Cheng & Cheng, 2005; Johnson, 2006; Spillane, Diamond, & Jita, 2003). If the goal of school reform or transformation is to be achieved, it is also important to understand how beliefs may be shifted and new insights gained. Scholars have offered frameworks that may support a shift in teacher beliefs. These include reculturing and deep change for school improvement (Fullan, 1993, 2001; Stigler & Hiebert, 1999; Hall & Hord, 1984), best practices (Marzano, Pickering, & Pollock, 2001), reflective practices (Coburn, 2001; Rimm-Kaufman, et al., 2006), and reflective tools (Brown, 2002; Milman, 2002; Munby, 1982; Norton-Meier, 2003). This study focuses on reflective tools and what may be learned about teacher beliefs when they are used to help teachers reflect on their practices.

Overview of the Methodology

Reflective thinking as it relates to teaching resurfaced as a topic of discussion in the early 1980s from Lortie’s proposal in the mid-1970s (Richardson, 1990). However, how reflective thinking is transferred to planning and instructional practices continues to be an area of research needing more investigation. In addition, ways for teachers to reflect and tools that assist teachers in reflection have not been thoroughly explored in the literature. Throughout this study, reflective teaching will be defined as
“teaching with careful thought and judgment” (Valli, 1997, p. 68). Through the lens of reflection as a foundation of teaching, the researcher conducted a qualitative phenomenological study that used various reflective tools and discussed how these tools can help teachers and administrators examine personal teacher beliefs as they transfer from internal, personal beliefs to planning and educational practices.

This study explored teacher reflective tools through a phenomenological lens. It sought to discover how teachers responded to three different reflective tools and helped teachers learn about their beliefs and practices. Additionally, it discussed factors and experiences that may be influencing teacher beliefs and classroom practices. The study explored how three unique reflective tools help both the teacher and instructional leader use new learning from these tools in classrooms and schools. All of the teachers who participated in this study were teaching at a restructured middle school.

This study explored “how” and “why” questions, which Yin (2003) and Merriam (1998) argue can only be answered through a qualitative approach. The study involved two sets of teachers. Three teachers experienced the reflective process using Kelly’s Repertory Grid Technique (Munby, 1982) along with Video Reflection. Kelly (1955) developed the Grid Technique from his Personal Construct Theory that says that one’s experiences are related to a person’s construction of his/her environment. This grid technique was designed to record the associations provided by the participants. The grid begins with identifying elements and explores relationships (constructs) of the elements. The researcher adapted this grid technique, replicating
the abstract exploration of teacher beliefs in Munby’s study (1982), to explore the signification of teacher beliefs and how they are transferred to classroom instruction and planning. During the grid process, the researcher observed and assisted if the participant asked for help. The second set of four teachers completed semi-structured interviews about their belief systems as transferred to instruction and also conducted a Video Reflection. The video elicitation reflections were conducted without the researcher present. Participating teachers self-selected and taped a classroom lesson that exemplified best teaching practices. In debrief conversations with the researcher, teachers reflected on a chosen segment of their instructional practices recorded on the videotapes. The researcher hypothesized that these reflections would not only further the research centered on transforming teacher beliefs and reflective tools, but would also help teachers self-assess their practices in a case study school’s reform movement.

Research Questions

The formulation of the research questions that guided this study were based on reviews of the literature regarding teacher beliefs and mental models, shifting teacher beliefs, deep change, reflective practices, best practices, and reflective tools. Based upon the discussions, critiques, and analyses of extant literature, the overarching purpose of this study was to explore three tools or ways of promoting teacher reflection and to understand how these tools might contribute to helping teachers surface their beliefs and instructional practices. The specific three questions that guided this study were:
1. How did the teachers engage with the three different reflective tools (Kelly’s Repertory Grid, semi-structured interviews, and video-elicited reflection)?

2. What teacher beliefs about teaching are revealed through reflective tools?

3. What did these tools reveal about past experiences that may be influencing teacher beliefs and practice?

The groundwork for this study began with first researching studies under the topic of transforming teacher beliefs. Then the researcher narrowed the search further into more distinct categories as they emerged beneath the guiding question. The researcher defined how teacher beliefs are developed. According to the literature, they are developed by life experiences including childhood experiences and significant emotional events, in teacher preparation programs, and with students in the classroom. Then, the researcher categorized the studies on transforming teacher beliefs. Three major categories surfaced: reflective activities, collaboration with colleagues, and professional development. Next, the researcher examined in-depth studies on reflective teaching and teacher practices and highlighted those that utilized reflective tools, specifically focusing on more technology-based tools such as video reflection. In addition, the researcher searched for tools that could assist teachers in examining their beliefs without the researcher being embedded in the reflective processes. Finally, the researcher looked at best practices resulting from reflective teaching.

Definition of Terms

Most key terms are clarified as each component of the literature is reviewed. The term “school reform” used throughout this paper is used in the context of
reformed schools, meaning schools and districts that are in a transformation process and schools that are restructured while simultaneously on the path towards reculturing. Reculturing, according to Fullan (2001), is defined as how teachers reflect on their beliefs and habits.

Significance of the Study

This study provides insight and new learning about how teachers actually engage with reflective tools. Perhaps through these reflections, teachers’ practices, classroom environments, and instructional strategies will be altered. In addition, this study provides new insights into teacher beliefs and helps teachers identify past experiences that may shape their current beliefs about classroom instruction and practice. Furthermore, this study may help both teachers and instructional leaders attempt new reflective processes using various reflective tools. These reflective tools could become a stimulus for change of teacher practice and instructional strategies.

Organization of the Study

The study is organized into five chapters. Chapter One gives an overview and outlines the study and its implications in the area of reflective tools for teachers and teacher beliefs. Chapter Two discusses why understanding teacher beliefs is pertinent to school reform; historical perspectives of beliefs; how beliefs are developed; and how teacher beliefs are transformed through reflective practices, professional development, and collaboration. Chapter Two also discusses a variety of reflective practices. Chapter three explains the methodology of the study as seen through a phenomenological perspective. The data findings from three reflective tools are
displayed and presented in Chapter Four. Finally, Chapter Five is a discussion of the findings and how these might contribute to the current literature on reflective tools for teachers and teacher beliefs.
CHAPTER 2:
REVIEW OF THE LITERATURE

This chapter reviews current research in the field of teacher beliefs and how these beliefs are formed, changing teacher beliefs, and reflective practices. Relating to deep change and reculturing schools, conceptual frameworks of school reform movements are explained and developed. Reflective practices inside of reform are discussed. How beliefs are formed and the informal and formal influences are explained. Moreover, how teacher beliefs are formed is uncovered. The literature that shows how teacher beliefs are impacted is defined. In addition, the literature surrounding reflective practices to transform teacher beliefs is dissected. Reflective tools that explore teacher belief systems as they transfer to classroom instruction and planning is investigated. Also, this chapter explores best practices as related to classroom instruction and learning.

Conceptual Frameworks Budding from School Reform

In the midst of school reform, effective instructional leaders recognize that changes in policy and infrastructure alone may not enhance student learning. Cultivating a change in behaviors inside reforming schools that lead to new or refined instructional practices is key to changes in student learning and achievement (Coburn, 2003; Fisher, 2001; Jenkins, Queen, & Algozzine, 2002). Coburn (2003) asked if teachers’ interactions with reforms cause them to rethink and reconstruct their beliefs or if teachers actually alter the reforms to fit their prior assumptions of how students learn or what constitutes effective instruction. Reforms such as Success for All, the
Bay Area School Reform Collaborative, and the Comer School Development Model emphasize collaborative structures to increase teacher-student and student-teacher relationships as well as talk among teachers about matters of teaching and learning (Coburn, 2003).

Although present reforms promote discussion of teachers’ mental models in relation to instruction, close investigation of these yields mixed results as related to student achievement (Borman, Hewes, & Overman, 2003; Viadero, 2006). School reforms that are clearly formulated and fully implemented tend to have stronger implications for teaching and learning than do reforms that are less defined (Bodilly, 1998; Borman et al., 2003; Elmore, 1996; Supovitz, 2002; Tyack & Cuban, 1995). “Quick fixes” tend to exhaust teachers and administrators and render unsustainable results (Hargreaves, 2005). Fullan (1993) argued that reforms where teachers collaboratively work towards reculturing are more likely to link to instruction and student learning and to be sustained (Fullan, 2001, p. 34; Stigler & Hiebert, 1999).

A deliberate and sustained focus on classroom practice or “deep change” constitutes change that “goes beyond surface structures or procedures” (Coburn, 2003, p. 4). Further, “measuring deep and consequential change in classroom practice requires explicit attention to beliefs, norms, and pedagogical principles” (p. 4). Historically, reforms were most often limited to increasing the number of teachers involved in schools across districts (Hargreaves & Fink, 2000; Hubbard and Mehan, 1999; Fashola & Slavin, 1997) rather than attending to the depth of changes. The reforms that Coburn reviewed such as Accelerated Schools, Coalition of Essential
Schools, Comer Schools, Success for All and the New American School project represent whole school reforms centered on deepening change within schools, especially beliefs about children’s learning and approaches to teaching. However, these reforms have not become the national norm and their success in bringing about improved student learning varied greatly, often depending on the level and depth of the implementation. The results of these reform efforts have certainly not translated into significant changes in the results of the National Assessment of Educational Progress and suggest the need for further research to understand how teachers may be assisted in deepening their understanding of the reform process that will translate into stronger classroom practices.

This need to better understand how reforms can more quickly enter the classroom door is especially critical to the researcher’s practice. As a site administrator in a Program Improvement district of 23 schools with approximately 19,000 students, the researcher has come to recognize that teacher thinking and reflection is directly related to a school’s culture and how teachers guide students’ learning in the classroom. For three years now, the K-8 district where the researcher works, with a majority of Latino students who are learning English as their second language, has failed to make adequate gains as measured by Adequate Yearly Progress (AYP). School A, one of the district’s five middle schools where the researcher is currently an Assistant Principal, has failed to make required AYP gains for seven consecutive years. Even after the restructuring of the school in the 2006-2007 school year, the school is continuing to fail students: only 260 of the 1024 students,
approximately 25 percent, are proficient in Language Arts. Perhaps exploring reflective processes with various tools can assist teachers in analyzing their beliefs and help them think about how their beliefs are transferred to their planning and classroom instruction.

Coburn’s Model and Chrispeels’ and Gonzalez's Model

To date, there are many studies on reform movements that analyze “depth of implementation” and “shift in ownership” as a one-dimensional construct (Elmore, 1996; McLaughlin & Mitra, 2001; Mitra, 2005). From grounded theory emerging from school reforms, Coburn conceptualized reform into four dimensions of scale: depth, sustainability, spread, and shift in ownership (2003). Depth is defined as change that will ultimately alter teachers’ beliefs, norms of social interaction, and pedagogical principles. The author posited that sustainability is a challenge inside of reform as initial resources and energy dissipate and teacher turnover transpires. Teachers with a deep understanding of the pedagogical principles of a reform can sustain and deepen reform efforts when new demands are presented. Coburn suggested that spread is more than the spread of the reform to greater numbers of classrooms and schools inside of a district, but also “spread within” the classroom level, implying a need for researchers to draw on pedagogical principles and norms targeted by reform. The shift in ownership becomes self-generative, moving from external--controlled by the reformer--to internal reform with authority for the reform held by districts, schools, and teachers (Coburn, 2003; McLaughlin & Mitra, 2001).
Chrispeels and Gonzalez (2006) applied to a three year Effective Schools (ES) reform project study Coburn’s four dimensions of scaling up to show a “partial link” between program activities and their probable relationship to student achievement gains. Qualitative and quantitative survey data were collected through this case study of a central California coast school district with 19 schools serving approximately 16,000 students. The data examined through the four dimensions of Coburn’s model sheds light on lessons about implementing systemic reform and suggests some new insights about scale. Six areas stand out. Transfer of ownership, named last in Coburn’s model, these authors argue, needs to be examined first as the foundation for reform is “co-created and co-owned” from the beginning (p. 266). Chrispeels and Gonzalez call for the scrutiny of strengths-based assessments and processes of a district so sustainability can be built upon system strengths. To enhance depth and spread, a focus on identifying and strengthening the organizational core by reflecting on core values and purpose will enhance the district’s vision. Professional development and systemic structures to support scale require more attention for the reform to be shared, go deep, spread, and be sustained. Time for school and district development is proposed as a missing dimension in the concept of scale. Teachers and administrators acknowledged the lack of time for leadership training seminars, collaborative structures, and professional development. Leadership—external and internal—is yet another dimension related to achievement. The need for an ongoing dialogue, “with external-lead facilitators helping to bring new information and ideas to
grade-level teams, and internal-lead facilitators moving theory to practice” is key to increasing student achievement (p. 269).

Extending Coburn’s (2003) model of four dimensions and Chrispeels’ and Gonzalez’s (2006) model of six dimensions of school reform, the researcher suggests an additional foundational layer to the models. It is important to note Coburn’s (2003) dimension of depth does speak to improving teaching and learning by going beyond surface structures and changes to a deep change of teachers’ beliefs, teachers’ assumptions about students, and how these transfer to instruction. However, missing is the dimension of first examining individual beliefs and shared beliefs, including the transformation of these teacher beliefs in reforming schools that may underlie all other dimensions. The researcher proposes that the initial step of any reform effort must start with first facilitating teacher reflection on and analysis of beliefs. From this reflection and analysis, a number of positive changes may transpire that will enable teachers to connect their current beliefs and values to the proposed reforms and if they make these connections, they will be in a stronger position to take ownership of the proposed reforms. If this were the initial step, then the Coburn (2003) and Chrispeels and Gonzalez (2006) models might unfold in the following ways: transfer of ownership and supporting and advocating for the reform would occur simultaneously across leaders in the district because of the involvement of teachers from the beginning of the process. Through systems and structures, the reform would spread to internal leaders at the site, including teacher leaders. Via leadership, by examining the strengths and core beliefs of the organization, a professional development program
and systems-approach centered on these strengths could optimally be channeled to classroom practice and instructional strategies as teachers are given extended opportunities for reflection on practice and in practice. This focus on beliefs (Coburn’s concept of depth) and professional development incorporating reflective practices could perhaps transform teacher beliefs about instruction. It is hypothesized that this transformation of belief systems may create the sustainability needed in reform efforts, in the organization, in the community of teacher learners, and in the individual. Given the potentially powerful effect of teacher beliefs on the reform process, it is important that this study explore the literature on teacher beliefs.

Teacher Beliefs

Beliefs, in this study, are defined as anything that a person regards as true (Azjen & Fishbein, 1980). According to Pajares (1992), since beliefs must be inferred, a belief is more certain when it can be evidenced in both the words and actions of an individual. Beliefs, at times, may not be recognized, simply because individuals may not be consciously aware of them (Buzeika, 1996). A review of the literature reveals studies on teacher beliefs and mental models that are formulated around three central themes: beliefs developed early during teachers’ own schooling and childhood experiences, beliefs formed while in teacher preparation programs, and beliefs formulated after entering the profession. In addition, the formation of life beliefs, life experiences, and influences are discussed in the literature.
Historical Perspectives of Teacher Beliefs

Before examining these three areas in depth, it is important to highlight the research that served as the foundation for reflecting on teacher mental models and beliefs. Lortie’s (1975) sociological study of 94 elementary and secondary school teachers showed that teachers do not develop a strong common technical culture. When asked about their good days, one of the three themes prevalent was that teachers attach great meaning to the boundaries that separate their classrooms from the rest of the school and the community. This study found that teachers work in isolation, with little time or expectation for collaboration or learning from colleagues. Also, some teachers pessimistically stated that the occupation of teaching could never change. This study showed that significant change would demand from teachers the capacity to make effective adaptations. Lortie proposed that teacher preparation programs could assist teachers by preparing them with shared learning experiences. Interestingly, this study found that teachers have usually internalized the practices of their own teachers. Thirty years ago, Lortie argued that teachers’ mental models would need to be freed.

How Teacher Beliefs Are Formed

A significant body of literature relates teachers’ beliefs to formal programming experiences, such as formal educational experiences and formal influences. Perhaps teachers discuss or relate their beliefs to formal school experiences, because these episodic memories are organized around childhood memories, modeling, and socialization. In this next section, studies of teacher beliefs are discussed. Studies of teachers’ beliefs indicate that they develop over time and are influenced by three
major forces: early school experiences as a student, participation in teacher preparation programs, and classroom experiences as a teacher.

*Early teacher beliefs and childhood experiences.* Teachers’ personal backgrounds mold their cognitive frameworks (Achinstein, Ogawa, & Speiglman, 2004; Lortie, 1975; Massey, 1979; Weick, 1995). Research, according to Chappell and Thompson (1994), has shown that the experiences teachers have as learners can have a tremendous impact on the beliefs and attitudes they bring into their classrooms. For example, Barlow and Reddish’s (2006) study replicated Frank’s (1990) study using quantitative survey methods and determined that mathematical myths have remained constant despite 15 years of reform in mathematics education. These findings suggest that teachers can carry into their practice misconceptions in subject areas from their own educations. These findings relate to Massey’s work (1979) which discusses the Imprint Period (ages zero to seven years old) and the Modeling Period (ages eight to thirteen years olds) as two of the major periods where beliefs and values are formed, as these stages consist of copying behaviors modeled by others and attempting new behaviors for discovery. This imprinting stage, otherwise known as the “plastic” years, is used to explain how the mind begins to form patterns. (Berne, 1981, p. 11; Massey, 1979)

According to Norman (1983), “internal mental models depend heavily on an individual’s own conceptualization of self and influence the self-perception of a teacher’s capability and ability” (p. 320). These mental models are organized around frames or expectations developed from vivid images of teaching (Norman, 1983;
Calderhead & Robson, 1991; Massey, 1979; Thomas & Pedersen, 2003). Nespor (1987) contended that episodic memories serve as a foundation for one’s own teaching practices. Thomas and Pedersen’s (2003) simultaneous triangulation study found that reflections of pre-service teachers indicated that their ideas about teaching were highly correlated with specific, intense memories of their own science learning experiences. Such aforementioned empirical research reveals that teachers’ prior educational experiences shape their beliefs, which then transfer to an instructional philosophy and practice that they bring into their own classrooms as teachers.

Achinstein, Ogawa, and Speiglman’s (2004) study showed that two participants’ backgrounds as students in classrooms foreshadowed their professional beliefs and practices. Liz attended a private Catholic high school in the same conservative community where she teaches and now lives. Her conservative upbringing reflects her conservative styles of teaching, as she employs a highly scripted program, monopolizing the class time with whole-class, direct instruction. Sam’s public and private Montessori educational experiences as a child were pivotal in regards to his own teaching. In one interview, Sam remembers an experience in 5th grade in which, in his literature circle, he was able to engage in peer discussions about a text. This study is an example of how Sam’s 5th grade teacher became his “external hero” as modeling expanded from parents to teachers and school experiences (Achinstein et al., 2004; Massey, 1979). This experience with literacy transfers into his own classroom as he provides much student talk time during literacy activities.
Beliefs formed in teacher preparation programs. Even though prior experiences as a student influence what counts as teaching, teacher preparation programs also play a role. Avraamidou and Zembal-Saul (2003) employed a qualitative case study, which examined prospective teachers’ knowledge and beliefs about science instruction and student learning using web-based portfolio development as a vehicle. The web-based portfolios linked direct experiences in the classroom to university coursework. Findings strongly suggest that teachers’ learning can be enhanced through a reflective process which engages teachers in metacognitive activities focusing on their understanding of teaching and learning (2003). One case, Sarah, reflected in her web-based portfolio her belief about a student-centered classroom as opposed to a teacher-centered classroom. “I believe that a strong focus on children and how children learn naturally leads to child-centered practice” (p. 430). Jane explained that students “need to be able to think about the hows and whys of the science” in addition to seeing first-hand how science works (p. 431). Both participants began to make connections between the physical, hands-on engagement in activities to more conceptual aspects of learning. Both teachers also became sensitive to their students’ thinking about science, taking the time to listen to students and press students for their reflections during Science Talk time. The development of reflection statements shows how prospective teachers think about their knowledge, understanding, ideas, and beliefs about teaching and learning.

Other empirical studies enable prospective teachers to take part in a change process. Timmerman’s (2004) mixed-methods study shows that implementing
interventions, such as problem-solving journals, structured interviews, and peer teaching in a math course, can positively influence prospective teachers’ beliefs and knowledge about mathematics teaching and learning. During the course, teachers were assigned to three-person teaching teams. Collaboration across communities of teachers confirms a transformation of teachers’ belief systems of how students learn (Timmerman, 2004; Achinstein, 2002). The problem-solving journals and the structured interviews provided the teachers with evidence of their own ability and students’ ability (Timmerman, 2004). In their groups, prospective teachers could listen to a peer’s explanation of how to solve a problem or learn new strategies and solutions. These tools assisted the student teachers in reflection and also tested their beliefs and values against reality. This study shows how formal educational experiences can influence an individual’s personality by defining and integrating values, beliefs, and standards. This study exemplifies Lortie’s (1975) proposal for shared reflection in teacher preparation programs and shows how the Socialization period works (Massey, 1979).

Liz and Sam, two participants in the Achinstein et al. (2004) study, later showed that their backgrounds in teacher preparation programs foreshadow the beliefs that transfer to their practices. Liz’s experiences at a state school only briefly introduced her to ideas about teaching letter sounds, multicultural education, and grouping students. Her subsequent work in a charter school as a substitute teacher while she was earning her credential may have contributed to the highly structured environment in her classroom. She quickly adopted her district’s highly scripted Open
Court curriculum, and she followed the script closely, providing whole class direct instruction. Sam, on the other hand, attended a research university, which reinforced his progressive educational views. Sam’s experiences are reflected in his variety of instructional strategies, attention to all levels of students, and incorporation of student discussions in pairs and groups.

Hall’s (2004) review of the research surrounding content area teachers’ attitudes and beliefs about teaching reading in their content area is promising. The research seems to suggest that the attitudes of content area teachers can be changed. Also, teachers can be taught how to integrate reading instruction into other content areas. The studies discussed in this review illuminated a wide range of differing beliefs of pre- and in-service teachers. Pre-service teachers’ beliefs seem to be grounded in their prior experiences as students. Pre-service teachers expressed beliefs that they would be unable to teach reading in their content area because the school they would one day work in would not accept this. In-service teachers’ beliefs reflected a positive attitude towards teaching reading in ways specific to the content areas in which they taught. This study suggests the value and importance of ongoing teacher education as teachers begin to take up their practice.

Beliefs derived from experiences with students inside the classroom. Munby’s (1982) single case study on teacher beliefs and principles as applied to teacher thinking and classroom decision making yielded important information about a teacher’s beliefs and principles. Employing a variation of Kelly’s Repertory Grid Technique for interviewing, Munby detected several beliefs that drive Fran’s
professional thinking in her typical instructional day. The characteristics mentioned below were evident throughout the data. First, caring for the student is, if not more so, as important as the Language Arts program. Second, the conduct of teaching and learning is focused. Third, learning requires much activity and interaction. Fourth, teaching and learning involve developing open and honest relationships. Last, seventh graders are not mature enough to make valid conclusions. These findings imply that a teacher’s beliefs about how students learn are directly transferred to his/her classroom instruction.

A recent case study by Beswick (2004) showed that although Andrew, a 7th and 10th grade math teacher, held beliefs congruent with the aims of the math reform movement, his personal beliefs regarding older students, his 10th grade students, transferred to his practice. His beliefs, that older students of average ability are not interested in math and math that is suitable for older students is not very interesting, was prevalent in the little production of work the students did and the lack of discussion in his classroom. This study illustrates that despite a teacher’s support and belief in reform efforts focused on content and instruction, teachers’ beliefs about older students cannot be ignored. This study also raises two pertinent questions: (1) Can teachers be encouraged to explore beliefs in ways that might lead to instructional changes? (2) What approaches to explore beliefs are most effective in bringing about changes?

Achinstein et al.’s (2004) two-year mixed methods study examined how the organization of schools and districts, as evidenced in their literacy programs, shaped
the socialization of new teachers. This study followed two new teachers as they applied varying instructional strategies from varying frameworks. Teacher A (Liz) employed more explicit and directive teaching methods. Teacher B (Sam) experimented with a more student-centered approach including flexible grouping and individualized and varied teacher responses to students’ comments and questions. The constructivist approach that Sam demonstrated may be directly linked to the professional culture of his district. District B, where Sam taught, had a “higher total mean classroom discourse score than District A,” where Liz taught (p. 574). Aspects of Liz and Sam’s teaching backgrounds seemed to foreshadow their teaching beliefs as evidenced by their methodologies. District A’s scripted reading program was easy for Liz as it provided resources and directives. Liz did not have a teaching credential, but she was pursuing one. In contrast, District B emphasized literacy and reflective practice. Sam’s prior experience in an adjacent district “may have shaped his student-centered, higher order focused teaching beliefs” (p. 573). These beliefs transferred to his teaching practice.

In Patterson’s (2002) longitudinal case study of the A+ Schools Program, findings showed that even though teachers adopted the constructivist arts-based philosophy of the program, actual instructional practice in classrooms did not change. A large number of teachers in the upper grades espoused that the A+ program philosophy legitimized their personal beliefs about teaching. Although respondents indicated the reform efforts were consistent with their personal beliefs, their practice did not support this. Upon observation, teachers were not integrating arts into their
lessons. While they claim to have recultured their instruction, by adopting an arts-based approach, clearly they did not, and it is questionable that they even restructured their practice. This study seems to suggest that teachers’ espoused theories were not supported by their theories in use and raises question about whether it is possible to bring teachers’ beliefs in alignment with a school reform agenda. Given the mixed data on the changeability of teacher beliefs, the next section looks at what the research literature indicates regarding the challenge of change.

Change Theory

In the past 30 years schools reform has been a constant and much has been written on change. Since the process of reform implies that schools and teachers must change, it is important to gain deeper insights into why change is so difficult and what supports teachers to change.

The Difficulty in Changing

Lortie (1975) found that teachers “are reluctant to try new approaches unless they feel sure they can make them work and avoid damaging their reputations” (p. 234). Teachers are also reluctant to ask for help to implement new strategies. Little’s (1990) work shows that beginning teachers are more receptive to asking others for help. In contrast, senior teachers rarely volunteered their expertise; yet they did help when asked. Lortie’s (1975) study, however, tends to confirm that for more than 30 years, teachers have been reluctant to change from working in isolation to working collaboratively. When teachers were asked to describe their best days in the classroom, some responses included “it’s a day when you have the children to
yourself’ or “a day when you can close the door and do nothing but teach” (p. 169).

To produce deep and substantial change, according to Little (1990), a shift from individual work to collaborative work is needed. At the heart of this change, an examination of teacher beliefs and beliefs of the organization needs to occur.

Changing teacher practices and implementing reform models has remained a challenge for school staff. So, why is it so difficult to change?

Kegan and Lahey (2001) state that rather than aiming for short-term symptoms with behavioral strategies, change must focus on the way individuals and groups make meaning. These researchers discuss the wave of educational reform models and why so little real change actually occurs. Instead of blaming obstacles, such as resistance, lack of resources, or limited time, the authors write, “a bigger piece of the problem may rest with the reformers themselves” (p. 62). These authors shed light on a critical piece often left out of the process of organizational change. This single premise is that change might be almost impossible without change coming from within, without change in teachers themselves.

Related to focusing on how individuals and groups make meaning is explored in a higher education study which has relevance to K-12 teacher change. This study considers professors’ belief systems, much as teacher belief systems are explored in other studies. Gess-Newsome, Southerland, Johnston, and Woodbury (2003) recognized that we must focus on teachers’ dissatisfaction with their current practices and their degree of engagement with existing reforms. This mixed-methods study used both the Teacher Centered Systemic Reform (TCSR) model and conceptual
change theory. The conceptual change theory recognizes “the importance of the learners’ dissatisfaction with their existing understanding as a precursor to change” (Feldman, 2000, as cited in Gess-Newsome et al., 2003, p. 738). This study found that two forms of dissatisfaction affected reform-based teaching: contextual and pedagogical. Professor A expressed a high degree of contextual dissatisfaction. Although his espoused theories were in line with the reform, his practice (theory in use) did not exhibit the instructional strategies of the reform. Professor B’s practical theories were not in line with the reform, and he held no dissatisfaction with his teaching goals or his practice. Therefore, his pedagogy remained static. Professor C was the only member in the project who was personally dissatisfied with his teaching practice; consequently, change occurred. Professor C was the only participant who did not blame the students; rather he looked at himself and his teaching practices as the catalyst for change.

The strengths of Hall and Hord’s (1984) Concerns-Based Adoption Model include recognizing the key role of individuals, their feelings, and readiness in the change process. In order to be more effective, educators must be concerns-based in their approach to effecting change. As teachers examine their roles in the change process, they will move through various stages of concern, as outlined by Hall and Hord in their model. From Awareness (little concern) to Informational (a general awareness) to Personal, Management, Consequence, Collaboration, and Refocusing, the stages of concern lead back to a double-loop learning process where new alternatives to the proposed innovation are explored (Argyris, 1976). In order to
change teachers’ beliefs, awareness of the change process must be fostered.

Illuminated in Hall and Hord’s (1984) change process are the levels of use of the change based on the individual from Nonuse all the way to the 6th Step, Renewal. Awareness of the differing levels of change needs to be understood by the individuals in the organization if change is likely to occur.

Similar to Hall and Hord’s (1984) change model, Dodd (2001) explains her Reflective Practice Stages of Development Model through telling a personal story of her own teaching journey. She identifies her stages: Stage 1, Confusion, Chaos, and Survival—Theory Discounted, Stage 2, Coping and Recipe Collecting—Theory Ignored or Denigrated, Stage 3, Trusting the Experts—Theory Borrowing, Stage 4, Questioning the Experts—Theory Building, Stage 5, Self-Actualization—Theory Refined and Integrated with Reflective Practice. These stages can be used to show developing teachers how to reach the 5th stage and reflect on instructional practices in the classroom.

**Deep Change**

Deep change, as defined by Marzano, Waters, and McNulty (2005) and Coburn (2003), is revolutionary and requires new ways of thinking and behaving. Fullan (2005) refers to this type of change as adaptive change. This work is not easy and requires a shift in belief systems. The underlying premise can be attributed to Argyris’s (1976) double loop learning as outlined in the ladder of inference. As defined in Senge, et al. (1994), “This ladder model explains how individual beliefs shape the information we observe or experience, select information for processing, add
meaning to the information, draw conclusions from the information, and either confirm our current beliefs or change our beliefs so that we begin to see other information” (p. 242). This deep change that school staff experience is necessary in order to reculture a school and transform pedagogical practices.

Changing Teacher Beliefs

Three major areas are prevalent throughout the literature surrounding changing teacher beliefs. Through reflective activities and personal reflection, teacher beliefs may be altered (Avraamidou & Zembal-Saul, 2003; Coburn, 2001; Rimm-Kaufman, et al., 2006; Timmerman, 2004). With strong professional development programs embedded in the reform efforts, change is more likely to occur (Bloom et al., 1998; Cheng & Cheung, 2005). Collaboration is a catalyst in the change process as individuals in organizations begin to change their beliefs (Bloom et al., 1998; Coburn, 2001; Louis and Marks, 1998; Supovitz, 2002).

Changes in structures, procedures, and protocol are avenues to altering teachers’ beliefs and norms. Instructional practices enacted in classrooms entrenched in reform may transform teachers’ underlying assumptions about how students learn (Coburn, 2001; Coburn, 2003). A focus on the internal aspects of an organization grounded in the inner self through reflection could be useful. There is only a chance for deep change when individuals take action to alter their environments (Fullan, 1993). When teachers push for change around them, intersecting with other like-minded individuals and groups, continuous improvement occurs. The focus for change can stem from an organization’s data. Collective problem solving when
classroom challenges arise can create improvement; it is the collaboration of individuals that makes a difference (Fullan, 1993; Fullan, 2005). A system of transparent data collection along with reflecting on the data and sharing experiences can support deep learning. In order for sustainability to occur, however, this reflection process may be needed to create an opportunity for teachers to collaboratively examine their belief systems.

**Reflective Activities**

Coburn’s (2001) case study of an urban school involved in literacy reform examines teachers’ micro communities and how they apply reading assessments and practices. The study shows how teachers constructed shared understandings by discussing their individual and collective views and beliefs based on prior experiences. Because a community was comprised of teachers with differing experiences and shared knowledge, teachers in the group defined the reform’s idea of using assessment to guide their instruction in varying ways. During the year, some teacher communities collectively rejected the reading reform and the philosophy of the reform, which consisted of using assessments to guide instruction. For example, in one teacher community, assessments showed that first grade students were weak in specific comprehension strategies. Two teachers felt that the comprehension strategies were too difficult and inappropriate for their first graders. These two teachers did not alter their practice. Two other teachers came to see the strategies as important and applied them to their classrooms. Another community of teachers did not philosophically agree with one teacher’s ideas of a comprehension assessment and her suggestions
were not incorporated into group activities. Some colleagues’ ideas were rejected when they were outside the bounds of comprehensibility. Yet other communities collectively made sense of the comprehension strategies through trial and error of implementation in the classroom. Through individual and collaborative reflection, teachers monitored and adjusted these strategies to fit the learners’ needs in their classrooms. These findings suggest that despite even the best collaborative structures, not all teachers will change their beliefs or practices.

Timmerman’s (2004) mixed-methods study used problem-solving journals and structured interviews as reflective tools for understanding prospective teachers’ beliefs and content knowledge about math instruction. In three-person teams, pre-service teachers reflected together by examining each other’s written representations of math problems, communicating about problem-solving techniques and solutions, and exchanging individual strategies that all could take to their classrooms. Timmerman’s findings indicated these tools assisted teachers in reflection about their practice.

Through reflection statements in the Avraamidou & Zembal-Saul (2003) study, prospective teachers became open to listening to students’ reflections during student-talk time in science. These prospective teachers began changing their beliefs about teaching. Instead of being the transmitters of knowledge, as many prospective teachers expect to do (Rimm-Kaufman, et al., 2006), through reflection in groups, these teachers began to realize the importance of student talk time in the classroom and their roles as the guides for the students.
Strong Professional Development

A need for professional development programs where reflective training challenges existing teacher beliefs may be an essential component of reform. Authors of some studies suggest deep change occurs when participants actively engage in analyzing and defining specific didactic strategies (Bloom, Bullion, & Caldwell, 1998; Cash & Infusino, 2003), conduct and receive regular classroom observations (Achinstein et al., 2004; Frykholm & Glasson, 2005; Grove, Strudler, & Odell, 2004), and begin to identify and discuss their core beliefs about teaching (Achinstein, 2002; Cash & Infusino, 2003; Coburn, 2001). Little’s (1993) essay discusses teachers’ professional development within the context of educational reform. She argues that new reforms differ from traditional textbook-centered conservative teaching styles. These reforms expect teachers to shift their instructional strategies in the classroom. For example, teachers need to incorporate cooperative learning structures, student-centered activities, and math manipulatives; yet, many teachers have very little experience with these instructional strategies. Professional development programs can help teachers adjust to the new changes required by the reform if they are of sufficient duration and provide time for practice, feedback, and reflection (Joyce & Showers, 2002).

After two years of implementing the SAW (Schools Around the World) project reform with Hong Kong teachers, changes in teachers’ practices and beliefs about science and biology assessments were observed (Cheng & Cheung, 2005). Two years of professional development programs and shared learning experiences were part of
this reform. A definite need to help teachers change their views about science learning and teaching was expressed and published by the Education Commission in 2000; it described an over-emphasis of public examinations as the only measure of students’ overall abilities. Overall, teachers lacked alternative assessment strategies and put excessive emphasis on the final exams instead of ongoing student learning. This quantitative study began with teachers reflecting on their beliefs about current practices, the assessments, and their perceptions about their competence in teaching for achievement. Comparison of pre-and post-tests suggests that teachers, on the whole, changed their practices by assigning a wider range of tasks to students. However, often times these projects and alternative assessments were in addition to the lesson and homework instead of replacing the homework. There was more change in practice for primary teachers than secondary teachers. No statistically significant change was observed when comparing the pre- and post-test findings for secondary teachers. This study recommended that more professional development and teacher support are needed to shift teachers’ views of learning and teaching science.

The Chino Valley Unified School District (Bloom et al., 1998) implemented five action steps centered on instruction and assessment. One of the actions included a professional development component centered on classroom instruction. Coaches and teacher leaders helped train teachers at sites. Professional development included how to analyze data across professional learning communities. The reform was successful as this district moved from a low-performing school district to an exemplary district in only four years. Similar to the aforementioned study, Windshitl’s and Sahl’s (2002)
two-year ethnographic study found that laptops served as a tool to transform one participant’s teacher-centered practices to a classroom of student collaboration and project-based learning. Professional development began one year before the one-to-one laptop initiative was to be incorporated into the classroom setting. Teachers all received their own personal laptops and attended technology workshops. During this one-year professional development period, in-services and technology-based discussions occurred. Faculty meetings consisted of updates on hardware and training. Classrooms were made ready for wireless access. The professional development activities illustrated how one teacher transformed her beliefs about instruction from conducting a teacher-centered classroom to seeing herself as a facilitator of knowledge.

Johnson’s (2006) case study of two middle schools, participating in a two-year collaborative, demonstrated barriers towards implementing whole school science standards. One of the middle schools was successful in implementing the professional development program and had great success in developing units of study centered on inquiry-based practice. This middle school provided release days for its teachers to attend trainings to develop student-centered science activities. The other middle school was only somewhat successful in its first year of implementation, as teachers had to attend after school and travel to a high school for training. The second year for this site was even less effective than the first; the lack of a superintendent froze the professional development accounts. Despite the sites’ dissimilarity of implementation of the same professional development program, which lacked a reflection of belief
systems, some teachers interviewed at both sites experienced reculturing barriers related to their beliefs. These findings show that professional development programs may be more effective when reflection of beliefs is incorporated into training regarding new instructional practices.

These findings showed that professional development programs that targeted teacher beliefs and challenged those belief systems may be needed. In addition, a professional development program that involves reflection across teacher groups could assist in helping to institutionalize reforms. Spillane, Diamond, and Jita (2003) suggest that reform efforts must include both external support for the teacher to understand how the instructional strategies of the reform will look in practice and internal support for adapting, reflecting on, and discussing individual practices—“activities that enable teachers to take ownership of the personal process of change” (p. 534).

Collaboration

Collaboration inside of communities helps teachers guide their instruction (Coburn, 2001; Louis and Marks, 1998; Supovitz, 2002). In just four years, The Chino Valley Unified School District went from being an under-performing school district to a model district with high test scores (Bloom et al., 1998). The district used an external support team. Focused goals were developed at sites centered on belief systems and Sergiovanni’s Moral Leadership (1996)—a commitment to the moral purpose of serving students. Capacity was built by utilizing instructional leaders as coaches. Together, teachers changed their views of assessment and instruction. Data
were analyzed across teams and communities. Teachers used information from their assessments to guide their instruction. As philosophical beliefs about what constitutes good teaching are discussed and transformed within and across teams of individuals at a school, change inside teaching begins to occur (Coburn, 2003; Elmore, 1996; Supovitz, 2002). Belief systems, norms, and practices become reconstructed as reform programs are implemented in their own contexts—the classrooms (Coburn, 2001; Tyack & Cuban, 1995). It is evident that this district has gone through reculturing, as the new culture consists of teachers collectively adapting instructional practices as a result of data from assessments.

Achinstein’s (2002) mixed-methods study of two similar schools involved in the Bay Area School Reform Collaborative revealed the challenges to shifting teachers’ underlying assumptions about student learning. At one site, groupthink prevailed and the blame game persisted. Teachers continued to believe that students were responsible for their own failures, irrespective of the ways in which they were taught. At another site, teachers actively examined and critiqued their own, and each other’s, teaching practices. As teachers openly considered the relative effectiveness of various instructional strategies, their beliefs about what constitutes good instruction changed. As they experimented with newly developed strategies, their teaching behaviors changed, as well.

To move teacher groups towards true collaboration, we sometimes need conflict or discomfort (Little, 1990). If teachers are provided avenues through communities of learners to channel and reflect on their discomforts, then perhaps an
individual’s sense of self-efficacy can be altered enough to implement the new pedagogical practices of reform. Frykholm’s (2004) study posits that teachers who have the ability to experience discomfort and use it as a pedagogical tool could perhaps align their beliefs with the philosophy of the curriculum. Data gathered from this study, along with theories of self-efficacy and discomfort, were constructed to explain teachers’ beliefs. Two of the four case studies show how discomfort could be used as an educative tool to improve student learning. Ms. Wheaton and Ms. Moore, case study teachers, both believe that uncertainty is a natural part of learning; this is evident in their discovery learning style lessons, which consist of numerous opportunities for student interactions and group work. The other two teachers were uncomfortable with providing uncertain opportunities in their lessons as evidenced by a dominance of direct instruction in their lessons. This study’s findings showed that guiding students towards discomfort may produce deeper learning. In order to create more learning, teachers could discuss together how they create discomfort and deal with the uncertainty of students’ learning through discovery in their classrooms in collaborative groups. This collaboration could help other teachers change their beliefs about how students learn.

Summary of Teacher Beliefs and Change Literature

From reviewing the literature, it is evident that analyzing teacher beliefs is very complex. Some of the studies’ findings show that although teachers may believe in a reform’s efforts or changes, teachers’ beliefs about how students learn can impede them from adopting the reform’s strategies and changing their instructional practices.
The complex beliefs that are formed early on, in teacher preparation programs, and in the classroom may conflict with each other. Through the lens of an instructional leader, findings from some studies have been insightful and may be viewed as being successful as they have assisted teachers in changing their beliefs. These changes are more likely to occur when there is sustained, high quality professional development and teachers are given time to work in collaborative groups with coaches who help them reflect on their practices and challenge each other’s thinking.

**Supporting Teachers to Reflect**

Through reflective practices, strong professional development, and collaboration, teachers have altered their instruction by first analyzing their beliefs. Some of the studies’ findings show that reflective tools such as group journals, teachers interviewing each other, and talk-time for teachers in collaborative groups have served as catalysts towards changing instructional practices and behaviors inside the classroom. There is a definite need to explore more reflective tools and reflective practices in order to produce sustainable change.

*Why reflective teaching is needed.* Reflective teacher education is important and necessary. Valli (1997) discusses the popularity of reflective teacher education in the U.S. today. According to Valli, fostering teacher thinking promotes teaching as a profession (p. 72). Schön (1987) described teachers as problem-solvers and decision makers. Teaching is complex because teachers need to have skills to handle unpredictable situations. Also, reflective teaching in the United States is becoming
more popular after attention to ethnic and racial achievement gaps were discussed and made transparent through NCLB (2001).

**Defining reflective teaching.** Valli (1997) defined reflective teaching as teaching with careful thought and judgment. In 1933, Dewey defined reflective thought as the “active, persistent, and careful consideration of any belief or supposed form of knowledge in the light of the grounds that support it and the further conclusions to which it tends” (p. 9). Valli (1997) explains Dewey’s conception of reflective thought: “Reflective thought looks back on assumptions and beliefs to be sure they are grounded in logic, evidence, or both, and it looks forward to the implications or consequences of a particular course of action” (p. 68). Reflective thought is necessary in teaching because it moves teachers from routine activities to deliberate activities and intelligent action (Dewey, 1964; Fullan, 1982, 2001). Dewey (1964) argued that teacher preparation programs historically had not provided training on reflective thinking nor modeled reflection in various forms. Dewey felt that the ‘hows’ were presented but not the ‘whys’; for example, a teacher could model an effective learning strategy yet could not explain how this had informed her practice.

Valli (1997) discussed reflective teachers and how they have the ability to think about their practice and the context in which their behaviors occurred. He defined reflective teachers as those who “can alter their teaching behavior and context to accomplish desirable goals” (p. 70). Schön (1983, 1987) presented the idea that teachers must regularly be reflective during their teaching practice, especially when unplanned events occur in the classroom.
In Schön’s (1983, 1987) work, he described teaching as an activity filled with uncertainty—meaning that thought does not merely guide action; rather it also arises out of action. In the classroom, as a teacher is teaching, an unpredictable situation may occur, to which there is no one right answer. These instances are those where reflective teachers must apply reflective thinking in order to assess and make decisions of their own teaching situations. Valli pointed out that Schön’s work is a helpful correction to Dewey’s work and extended his ideas of logic and rationality in reflective thought.

After reviewing the literature, Valli concluded that there are five types of reflection (p. 75). They are: technical reflection, reflection-in and on-action, deliberative reflection, personalistic reflection, and critical reflection (Table 2.1).

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<thead>
<tr>
<th>Type</th>
<th>Content for Reflection</th>
<th>Quality of Reflection</th>
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<tbody>
<tr>
<td>Technical Reflection</td>
<td>General instruction and management behaviors based on research on teaching</td>
<td>Matching one’s own performance to external guidelines</td>
</tr>
<tr>
<td>Reflection-in and on-action</td>
<td>One’s own personal teaching performance</td>
<td>Basing decisions on one’s unique situation</td>
</tr>
<tr>
<td>Deliberative reflection</td>
<td>A whole range of teaching concerns, including students, the curriculum, instructional strategies, the rules and organization of the classroom</td>
<td>Weighing competing viewpoints and research findings</td>
</tr>
<tr>
<td>Personalistic reflection</td>
<td>One’s own personal growth and relationships with students</td>
<td>Listening to and trusting one’s own inner voice and the voices of others</td>
</tr>
<tr>
<td>Critical reflection</td>
<td>The social, moral, and political dimensions of schooling</td>
<td>Judging the goals and purposes of schooling in light of ethical criteria such as social justice and equality of opportunity</td>
</tr>
</tbody>
</table>
Valli has argued that all five types need to be incorporated into teacher education programs. As previously discussed, teachers’ mental models and belief systems can be shaped in teacher preparation programs. Including reflective practices in teacher preparation programs seems to be important as insights are then transferred to planning and instruction.

The literature has distinguished three dimensions: reflection-on-practice, reflection-in-practice, and reflection-for-practice (Killion & Todnem, 1991; Shulman & Colbert, 1989; Conway, 2001; Hatton & Smith, 1994). Reflection-in-practice occurs when the teacher or practitioner actually responds to those unplanned, spontaneous situations in the classroom that Schön discussed. Reflection for practice occurs prior to the lessons as the teacher is thinking and planning. Reflection-on-practice occurs after when looking back on decisions made in the classroom.

Valli’s technical reflection is similar to reflection for practice. Reflection in and on action is similar to reflection in practice and on practice. Deliberative and Personalistic Reflection can occur in any of the three dimensions. Critical reflection could occur prior to or after instructional experiences. A visual of the Types of Reflection to include these authors is detailed in Table 2.2.
Table 2.2. Types of Reflection: A Synthesis

<table>
<thead>
<tr>
<th>Type</th>
<th>Content for Reflection</th>
<th>Quality of Reflection</th>
</tr>
</thead>
<tbody>
<tr>
<td>Technical Reflection</td>
<td>General instruction and management behaviors that are based on research on teaching</td>
<td>Matching one’s own performance to external guidelines</td>
</tr>
<tr>
<td>Reflection for practice</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Reflection-in and on-action</td>
<td>One’s own personal teaching performance</td>
<td>Basing decisions on one’s own unique situation</td>
</tr>
<tr>
<td>Reflection-in-practice</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Reflection-on-practice</td>
<td>A whole range of teaching concerns, including students, the curriculum, instructional strategies, the rules and organization of the classroom</td>
<td>Weighing competing viewpoints and research findings</td>
</tr>
<tr>
<td>Reflection-for-practice</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Deliberative reflection</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Personalistic reflection</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Critical reflection</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Adapted from Valli, 1997, (p. 75); Killion & Todnem, 1991; Shulman & Colbert, 1989; Conway, 2001; Hatton & Smith, 1994

*Improving reflection-in-practice.* Without more experience with reflecting for practice and reflecting on practice, reflecting in practice cannot improve. With technology, these spontaneous classroom happenings may be recorded in order to provide more opportunities for teachers’ self-reflection on instructional practices that can be seen on various occasions at various times. After teachers research more about instances that happened in the classroom including techniques or strategies, teachers
would be reflecting for practice which may assist them in the next unplanned classroom event and further strengthen their reflections in practice.

*Reflective decision-making.* Reflective decision-making comprises many forms. Traditionally, clinical supervision has been and continues to be the most commonly accepted reflective decision-making model used by supervisors of local school district teachers. This model began at Harvard University in 1973 with pre-service intern teachers (Cogan, 1973; O’Neill, 1996). Most supervisors are aware of the clinical supervision process: preconference, observation, analysis, and interpretation of the observation, postconference, and critique of the process. Historically and to date, this has been the most widely accepted form of reflective decision-making that teachers must go through in schools and districts.

This reflective process is an evaluative process used to encourage teachers to meet state professional standards and to improve their classroom instruction and daily professionalism. The traditional clinical supervision process is one in which participating teachers are guided by the administrator with suggestions through questioning techniques or recommendations. This type of reflective process is in line with top-down approaches to supervision and teacher evaluation, as potentially teachers who do not show growth as evidenced in their lesson plans and instruction can possibly be removed. This type of evaluative system is necessary in order to measure the performance of a classroom teacher; yet, it does not provide a transparent reflective process that is designed solely for the teacher. Individual pressures that teachers may feel externally from the administrator may corrupt the ownership of the
reflection. When a supervisor works with a teacher and guides that teacher to make different choices, that teacher may temporarily change for the course of the evaluative process. In addition, it is typical that in districts, temporary and probationary teachers, teachers typically teaching for one to three years, complete the clinical supervision process three or four times per year. Tenured teachers are observed at least two times a year every other year and after several years may opt to design their own professional development projects. There is a need for more non-threatening reflective processes that remove the administrator from the teacher reflection. The purpose of this study is to test such a process.

*The Many Forms of Reflective Practices*

There are many examples of reflective practices. Reflective practices take on a variety of forms and structures. As described earlier, more traditional structures include individual and shared journaling, teachers interviewing each other, adult portfolios, and talk time in collaborative groups. More innovative structures and tools include web-based digital teaching portfolios (Milman, 2005), also known as digital portfolios, electronic portfolios, efolios, webfolios, multimedia portfolios, as well as electronically-augmented portfolios, video clubs, videotaping, peer coaching via podcasting, online journaling, and webmail.

*Traditional reflective tools.* There is an abundance of articles and studies on portfolios for students, teachers, and adult learners in the literature (Brown, 2002; Milman, 2005). What is missing is what those students, teachers, and adults actually learn from portfolios (Brown, 2002, Zidon, 1996). Portfolios can be used as reflective
tools to promote reflective teaching and thinking (Brown, 2002; Milman, 2002; Norton-Meier, 2003). However, individuals must participate in critical reflection as they “identify, analyze, and evaluate their learning experiences,” thus leading to a transformation (Brown, p. 231). Brown’s qualitative study consisted of six undergraduate students who had less than six months to graduate or had recently graduated. These students described their perspectives about the University’s portfolio experience that they began at the beginning of their studies. Through interviews, document analysis and researcher journaling, this study showed three major findings: an understanding of what, why, and how they learned throughout their careers; improved communication and organizational skills; and a greater recognition of the value of learning from work and from colleagues. Students also connected their learning over the course of their undergraduate studies to a new sense of personal empowerment to achieve future goals. This study showed how one reflective tool could help adults think more about their learning.

Coburn’s (2001) case study is an example of a shared reflective process in which the tools are other individuals. The collaborative talk time in groups, discussed previously, assisted some colleagues in deeper reflection as teachers altered lessons with new learning from the implementation and trial and error of new comprehension strategies. Timmerman’s (2004) study used journals and interviews as reflective tools for understanding prospective teachers beliefs. Also, talk time in groups was present in this study, and common reflection time and discussions were encouraged among pre-service math teacher participants.
Incorporating technology into reflective tools. In school reform, technology has arrived at the forefront of many schools’ goals and learning assurances (King-Sears & Evmenova, 2007; Bitner & Bitner, 2002). Teaching with technology as a tool is an educational shift that has become the norm over the past ten years. As described in Otero et al.’s (2005) article, in addition to teachers guiding all students towards mastery of state standards and teaching problem-solving skills across content areas, the expectation is clear that the uses of technology be incorporated in all areas (International Society for Technology in Education, 2000; The National Educational Technology Standards, 2007; No Child Left Behind Act, 2001; National Education Goals Panel, 1991; National Research Council, 1999; King-Sears & Evmenova, 2007).

Technology, as a tool, is used to support instructional practices and planning and to support student learning. In addition, teachers utilizing technology in the classroom will teach students lifetime skills they will need in the future workplace (Otero et al., 2005, Bitner & Bitner, 2002; Kings-Sears & Evmenova, 2007; The National Educational Technology Standards, 2007).

The University of Colorado’s educational technology resource (ETR) model showed how faculty and instructors made sense of educational technology through the process of interacting with graduate students. After reviewing research, this model for technology integration and cultural change was developed. The model was based on knowledge construction and the notion of situated learning, learning which must be situated in known contexts (Rogoff & Lave, 1984, as cited in Otero et al., 2005). Teams consisted of a graduate student partnered with several faculty members and
instructors on the basis of mutual knowledge of specific content. The idea behind this structure was that faculty and graduate students would work together to determine how technology could be used to enhance instructional practices and learning with their own courses. After working together to modify and enhance lessons, a reflection of the technology aspects would occur. The graduate student’s responsibility was to provide content-specific knowledge of technology to advance faculty members’ technological skills. The faculty or instructors role was to provide pedagogical content knowledge, expertise, experience, and knowledge of students to negotiate a purposeful lesson using technology in the classroom. After three years, ETR developed into a bi-directional discourse reflective model. Incorporating technology as a tool led to an ongoing successful collaborative project with reflection at the heart of instruction. This study is one example of how technology can be used as a reflective tool.

Using an online social context, MaKinster et al.’s (2006) study of pre-service teacher reflection compares three reflective tools: individual online private journaling, an online private discussion forum, and a more public video-centered, web-based learning space involving a community of pre-service teachers. This study showed that students who used the private journal wrote better initial reflections. Yet reflection occurred numerous times in the online discussion forum. In addition, all students in the community centered forum space found both the content and reflections meaningful. This study showed that a variety of reflective tools differentiated types of reflective processes for teachers.
Another tech-based reflective tool that preservice teachers experienced with Kansas State University faculty members was an efolio, an electronic teaching portfolio (Norton-Meier, 2003). Students were able to keep their portfolios online; they were able to add artifacts and documents and explain how those documents contributed to their development as a teacher. This type of reflective tool also gave aspiring teachers some creativity and flexibility in recognizing that individually they construct knowledge and meaning in their own way.

Milman’s (2005) study on web-based digital teaching portfolios showed that the process of creating digital portfolios fostered self confidence for teachers in both technical and professional skills. Participants in this study felt that this reflective tool also created a collaborative process as undergraduate students discussed how to organize their portfolios digitally and identified which components they wanted to include. One student said that these portfolios helped build his self-awareness. “It helps you to be critically aware…And you say, ‘Hey, this is what I believe in.’ When you’re fully aware of what you’re thinking of…” (p. 385). Milman’s participants made connections, with this reflective tool, to their beliefs.

*Adaptation of Kelly’s Repertory Grid Technique.* Kelly’s Repertory Grid Technique was developed originally in 1955 for his Personal Construct Theory. Kelly was a clinician who was focused on helping people understand themselves better (Enquire Within Developments Ltd, 2006). Fundamental to the theory is “the assumption that people process events according to a finite number of dichotomous personal constructs which, while individually serving to construct a limited range of
experience, are organized to provide a person’s unique construction of the world” (Munby, 1982, p. 217). How someone construes segments of his world is tackled by presenting the participant with cards—“elements,” representing a range of experience of interest to the investigator (Munby, p. 217). The participant then indicates which are alike and not and explains why. These comments then become the constructs. A grid with elements and constructs is created, and the participant and investigator then complete the interview together to look at the relationships between the elements and constructs (p. 217). Olson (1981) and Munby (1982) both attempted a variation of this interview process in order to tap into teachers’ beliefs. Olson’s study focused on the context of curriculum innovation in a study of teachers’ constructs. Munby’s (1982) study yielded important information about one teacher’s beliefs and principles as transferred to her planning and instruction. Also, this study helped remove the researcher from the reflective process and put the focus on the teacher so she could better understand her beliefs.

There is a need for additional reflective processes that remove the administrator from the reflection so that teachers receive the most personal benefit. Peer coaching through media is just one example of an indirect process that removes the administrator from the reflection. Because of the increase of technological systems, peer coaching, for example, can be done via email and podcasting. Experienced teachers can mentor new teachers via technology (O’Neill, 1996). Through peer coaching and mentoring, reflection processes occur.
In program improvement schools, restructured schools and districts, and reform schools, rigid timelines are set for schools to significantly and rapidly increase student performance. In order to increase reflection for instructional practice in a system engaged in reform, video reflections conducted by individual teachers for the purpose of teachers improving their instructional practices—reflection on practice—may help propel a school forward. Without teachers improving their instructional practices in the classroom, student improvement is unlikely to occur.

*Video reflection.* Utilizing video reflection as a tool can further amplify teacher reflective time as teachers have the ability to complete this reflection after the teaching occurs, not just in the classroom while the teaching is happening. This type of reflection is valuable and meaningful to the teacher. As explained in Pirie (1996), in regards to video recording, videotaping provides teachers the opportunity to reflect on decisions made in the classroom at a later time. Pirie labels this decision taking. In addition, incorporating a reflective process or system using the technology of videotaping so teachers can reflect on their teaching is in line with the current expectations of teaching using technology as tools for learning. In this case, a teacher furthers her learning about her practice.

Video recording, according to Pirie (1996), allows researchers and teachers to capture what is taking place in the classroom and postpone that moment of focusing on decision-taking. Videotapes give us the opportunity to re-visit what was captured in the classroom at a later time (Pirie, 1996; Sherin, 2000). Meeting as video clubs and reviewing videotapes allow teachers to examine instruction outside the demands
of the classroom and presents opportunities to develop advanced thinking and new insights into classroom instructional practices (Sherin, 2000).

*Using video as reflective tools.* According to Beck, King, and Marshall (2002), the use of case-based teaching and learning has been presenting opportunities for applying theory to practice. Typical cases are “authentic, concrete illustrations of teaching—learning in progress in real classrooms” (p. 346). These are videos of teachers teaching. Instead of pre-service teachers learning about classroom instructional practices and later observing expert teachers, pre-service teachers now have the ability to experience the realities of classroom life from a removed perspective, enabling them to detect specific issues within an authentic context, analyze issues and problems, experience challenges without risk, and practice reflective habits. This study was designed to determine the effectiveness of prospective teachers use of video cases as observational tools. Participants were randomly assigned to one of two groups: students in the TSPO (technology supported practice in observation group) or the control group. Both groups of students were randomly assigned to elementary classrooms in nearby schools. All pre-service teachers observed their mentor teachers four mornings per week. Both groups attended the same classes. The only difference was what each group’s tasks were in their technology class. The control group completed standard technology activities related to coursework. TSPO students recorded his/her mentor teacher, edited the lessons, and repeatedly reviewed the lessons, applying various perspectives. Both groups looked at three videos and identified teaching-learning ideas. Those students
who were in the TSPO group and who constructed video cases of their classroom observations significantly outperformed their peers. This study showed that video cases assisted prospective teachers in identifying strong instructional practices.

Bowers and Doerr’s (2003) survey-based study focused on cases—videos and analyses--of various mathematics methods classes across the U.S. According to teachers, the most useful and highly rated aspect of the CD was the teacher reflections. The goal of the creation of the CD was to develop a way for teacher educators and prospective teachers to explore the complexity of the classroom, enable prospective teachers to become better observers of classroom interactions, and help pre-service teachers learn to reflect on their own developing practice. Four consecutive days of video were collected, along with artifacts of an 8th grade class. A video with this teacher and their thoughts after each lesson were included. Seven course instructors participated and used the video with their pre-service teachers in order to examine the classroom and focus on four themes: lesson planning and design, facilitating class flow (small group and large group instruction), understanding students’ thinking, and mathematical content and context. This study showed a disparity between the issues that teacher educators planned to address and what prospective teachers wanted. Surprisingly, this study showed that “25 percent of the pre and in service teachers mentioned the teachers’ reflections as the most valuable aspect of their explorations, while none of the instructors had listed this as an explicit goal of the activity” (p. 150). In contrast, the majority of the instructors listed “connecting theory to practice” as one goal of the CD, and not one prospective teacher listed this (p. 150). This study
showed a way for prospective teachers to reflect on experienced teachers’ instructional practices in order to further thinking about lesson design for prospective classroom teachers.

One innovative multimedia case study by Hewitt et al. (2003) showed that over 70 percent of the 40 pre-service teachers who participated in viewing a colleague’s lesson on photosynthesis either modified or altered their immediate personal responses after conversing with peers. This study used group discussion to develop deeper reflective thoughts. Original personal reflections about the four challenges in the lessons were immediate, after viewing the tape. Yet given talk time with colleagues, pre-service teachers’ initial reflections changed.

Summary

In summary, reflective tools may assist teachers in understanding their belief systems as they transfer to planning and instruction. The literature to date shows that reflecting on practice is needed for all types of teachers, particularly for teachers already in the classroom. Reflective tools tested have been used in a variety of ways and forms. This study aimed to develop the literature on reflective tools by comparing semi-structured interviews with Video Reflections and Kelly’s Repertory Grid technique with Video Reflections. Incorporating technology into reflective tools has assisted teachers in reflecting on their instructional practices at a later time, allowing deeper thinking to occur. This deeper thinking could be transferred to reflection for practice, before teachers actually begin designing their lessons. Using tools to first understand beliefs, and then with this understanding, to increase and deepen reflection
and thoughts on practice is what is missing in the literature. In addition, this study investigated how instructional leaders can use reflective tools collaboratively with teachers.
CHAPTER 3:
RESEARCH METHODS

The previous chapter reviewed the literature on the major sources of teacher beliefs, how teacher beliefs are transformed, deep change, reflective practices, and reflective tools. This chapter restates the research questions and then describes the research design that addressed these research questions. Participants in this study, data collection approaches, and analyses are discussed. Ethical considerations and limitations are included.

Purpose

The purpose of this phenomenological study was to explore a phenomenon of interest—reflective tools for teachers. The study was designed for teachers to search for meaning and shed light on their personal beliefs and how these are transferred to their classroom instruction. The definition of phenomenon is “to bring to light...to show itself in itself...” (Heidegger as cited in Moustakas, 1994, p. 26). The study aimed to identify and understand how teachers responded to three different reflective tools, and it showed teacher beliefs as revealed through these tools. It also identified past experiences and how those experiences may be influencing teacher practice. In addition, the study explored the role of both the teacher and the instructional leader in the use of reflective tools and processes. To address this purpose the following research questions guided this study:
1. How did the teachers engage with the three different reflective tools (Kelly’s Repertory Grid, semi-structured interviews, and video-elicited reflection)?

2. What teacher beliefs about teaching are revealed through reflective tools?

3. What did these tools reveal about past experiences that may be influencing teacher beliefs and practice?

Research Design

The study used qualitative approaches to explore the phenomenon of teachers’ beliefs and their reflection on practice. In particular the researcher drew on the concept of phenomenology as the primary guiding frame for the study. According to Van Mannen (1990), “phenomenology aims at gaining a deeper understanding of the nature or meaning of our everyday experiences…whether empirically measurable or subjectively felt (p. 9). For purposes of this study, the researcher approached phenomenology as a research method (Moustakas, 1994). The unit of analysis was the individual teacher. Although there are differing approaches to phenomenology ranging from an inquiry paradigm to a social science analytical perspective (Patton, 2002), they all share in common “a focus on exploring how human beings make sense of experience and transform experience into consciousness, both individually and as shared meaning” (p. 104).

In combination with Moustakas, Patton (1990) discusses how the open-ended interview will illuminate important data to be interpreted. Interviews in this study
allowed participants to focus on the individual knowledge, the validity of personal vision, and discovery (Moustakas, 1994). Using transcendental phenomenology, this study focused on the appearance of things. The appearance of beliefs and the identification of them as teachers described them through interviews opened an avenue for phenomenological reflection. The challenge, however, has been how teachers and the researcher “explicate the phenomenon in terms of its…possible meanings, thus discerning the features of consciousness and arriving at an understanding of the essences of the experience” (p. 49).

The study was holistic in nature in that it looked at a theoretical replication of Kelly’s Personal Construct Theory that “assumes that people process events according to a fixed number of dichotomous personal constructs which, while individually serving to construct a limited range of experience, are organized to provide a person’s unique construction of the world” (Munby, 1982, p. 217). The study sought to understand teachers’ personal experiences and constructs of those in order to help understand classroom practices and teachers’ instructional decisions in the classroom. This study involved in part a literal replication of Munby’s (1982) study, in which an adaptation of Kelly’s Repertory Grid Technique was explored as a way to assist teachers in understanding their beliefs and how those beliefs are visible in their classroom instruction. Munby (1982) employed the grid technique to explore a more abstract concept--teacher beliefs--by having a teacher describe a classroom lesson. He then helped the teacher group these descriptions (elements). The elements were then described, and these descriptions formed the grid’s constructs. The constructs and the
elements were then coded for relationships by the researcher and participant. Next, Munby and the teacher together extrapolated the significances.

Pilot Study

In a pilot study conducted in February and March of 2008, the researcher tested out a variation of this grid technique with two different teachers from the same school but who were not involved in this study. The researcher asked teachers to describe a lesson reflective of best teaching because she wanted to have them analyze their practice from a strengths-based perspective and from an appreciative inquiry process (Watkins & Cooperrider, 2000). The researcher wanted to put the teacher participant in control of the conversation and analysis, so she used note cards and the researcher became the recorder. Using the note cards, the participants were able to easily group their descriptions. As they described the groupings, those descriptions became the constructs. The researcher created the grid on Microsoft Excel and then teachers coded the relationships of their elements and constructs. Then the participants described the significances, and the researcher tested out a variety of pilot questions and probing questions to dig deeper into understanding the significances.

The pilot provided evidence for the researcher that the grid technique could become a reflective tool for teachers that would help them understand more about their instructional practices and significances behind those. In addition, the feedback from both teachers was that this tool helped them think more about their practices and where their ideas came from. What was interesting was that one of the participants revealed personal information about his family and the influence of his mother. At the
time, this discussion allowed the researcher to think more about the influence of life experiences before school experiences. The pilot study also showed the researcher that this reflective tool could put the teacher in control of the reflective process.

Participant Selection

According to LeCompte and Preissle (2003), selection is an interactive process with a more general, representational focus on the study, whereas sampling is defining key participants so the findings can be generalized to the greater population. To illuminate the questions of this study, teachers were selected purposefully to create an information-rich study (Patton, 1990). Participants were invited based on several criteria. All participants selected were regular classroom teachers who are part of an interdisciplinary team. Teachers of all core content areas (Math, English Language Arts, History-Social Science, and Science) were encouraged to participate. They were all from the same school where the researcher was a school administrator. Any regular classroom teachers were invited to participate as long as the researcher had no supervisory role. Participation was voluntary. The purpose of the research was carefully explained. Benefits and any potential risks were highlighted. Consent forms were provided regarding interviewing, audiotaping, and videotaping. Of fifty-five teachers, thirty-seven teachers met the criteria and were invited. Of the seven teachers that volunteered to participate all were selected: this number was considered manageable for data collection and analysis and sufficient for providing insights into two types of reflective process. Efforts were made to include a combination of new
teachers (1-3 years of experience) and teachers with 5-20 years of experience. See Table 3.1 for more information about these participants.

Table 3.1. Participants and Reflective Tools Used

<table>
<thead>
<tr>
<th>Teachers</th>
<th>Gender</th>
<th>Content</th>
<th>Teaching Experience--months/years</th>
<th>Collaborative Interview</th>
<th>Semi-structured Interview</th>
<th>Video Debrief</th>
</tr>
</thead>
<tbody>
<tr>
<td>TA</td>
<td>M</td>
<td>Math</td>
<td>2 months</td>
<td>X</td>
<td>X</td>
<td>X</td>
</tr>
<tr>
<td>TB</td>
<td>F</td>
<td>H-SS</td>
<td>2 years</td>
<td>X</td>
<td>X</td>
<td>X</td>
</tr>
<tr>
<td>TC</td>
<td>F</td>
<td>ELA</td>
<td>7 years</td>
<td>X</td>
<td>X</td>
<td>X</td>
</tr>
<tr>
<td>TD</td>
<td>F</td>
<td>ELA</td>
<td>1 year</td>
<td></td>
<td>X</td>
<td>X</td>
</tr>
<tr>
<td>TE</td>
<td>F</td>
<td>ELA</td>
<td>1 year</td>
<td></td>
<td>X</td>
<td>X</td>
</tr>
<tr>
<td>TF</td>
<td>F</td>
<td>ELA</td>
<td>1.5 years</td>
<td></td>
<td>X</td>
<td>X</td>
</tr>
<tr>
<td>TG</td>
<td>F</td>
<td>ELA</td>
<td>6 years</td>
<td></td>
<td>X</td>
<td>X</td>
</tr>
</tbody>
</table>

The seven participants were randomly divided into two groups of participants who completed similar yet juxtaposing reflective processes (Table 3.1). Three participants were randomly selected to participate in the collaborative interview process of Kelly’s Repertory Grid Technique (see Appendix A). The researcher used a semi-structured interview process to interview the second group of four participants (see Appendix B). In addition, all seven participants were asked to select a lesson that they felt positive about and videotape it (Sherin, 2000). At a convenient time, each participant then debriefed and discussed the lesson with the researcher (see Appendix C).

Data Sources and Collection

Several data sources were used to inform this study and were used to answer the research questions. These included: Kelly’s Repertory Grid Technique, semi-
structured interview protocols, video data of a participant-selected lesson, and audio tapes of interviews and video debrief sessions.

*Kelly’s Repertory Grid Technique*

Three participants who experienced a two-phase collaborative interview process, an adaptation of Kelly’s Repertory Grid Technique (see Appendix A), first described a lesson in a classroom exemplifying their best teaching practices. From these descriptions, the elements of the grid were formed (X axis). Next, each participant grouped these elements into categories, describing why they grouped the elements accordingly. The researcher recorded these phrases and descriptions. They became the constructs (Y axis). The researcher created the grid based on the data elicited and recorded on note cards and from audio taped transcriptions of the interview. Soon after, participants looked at their grids and coded the relation or absence of relation between the elements and constructs. They used the following numbers to code the relationships: 1 (Definitely not associated), 2 (Neutral), or 3 (Definitely associated). Associations in this context were defined as relationships or similarities. If a participant marked 1 (Definitely not associated), it meant that the element and construct were not related in any way (See Appendix A). This completed the first phase of the process.

In the second part of the Kelly’s Repertory Grid process, the participant and the researcher explored what might lie beneath the groupings. They worked together to probe for the significances of the relationships. The participant attempted to focus on five to seven significances. Finally, in a semi-structured manner, the participant
and the researcher discussed these significances as related to childhood experiences as a student, experiences in teacher preparation programs, experiences in the classroom and life experiences. These sessions were audio taped and transcribed by the researcher. Through this process, the participant was in an active and primary role in meaning construction and data analysis, as the researcher primarily facilitated the process as opposed to imposing her interpretation on the participant’s data. Consent forms are attached (see Appendix D).

Semi-structured Interviews

In-depth, semi-structured personal interviews (Patton, 1990; 2002) were used to gather data about the teacher beliefs of the four participants who did not participate with the Kelly’s Repertory Grid. The interview protocol consisted of both open-ended and structured questions (see Appendix B) to elicit similar information that might emerge from the grid technique. The intent of using this style was to encourage the researcher and participants to engage in a conversation that allowed for the participant to guide the process in reflecting on his or her own teaching. The purpose of testing this approach was to explore if a simple interview/conversation technique enabled the interviewee to engage in as rich a reflective process as the more complicated Kelly’s Repertory Grid technique. These interviews were audio taped and transcribed. Data analysis of the transcripts involved searching and coding the transcript to identify units of meaning regarding their participants’ teaching surfaced by the participant. In other words, how did the participant define what is their best teaching? The codes representing participant beliefs were then juxtaposed to the participant’s descriptions
of actual classroom practice as evidenced and discussed in the video debrief conversations.

Video Reflection

Using an Appreciative Inquiry Approach (Catsambas & Preskill, 2006), all seven participants were asked to select a lesson that they wanted to videotape and that they thought reflected their best teaching. After video taping the lesson, the participant was asked to view it and select a portion they wanted to debrief with the researcher. In this video process, the participant remained in complete control. Such a process has been shown to enhance the depth and quality of the reflective processes and has been used in teacher reflective video clubs (Sherin, 2000). Similar to Kelly’s Repertory Grid, the participant became an active interpreter of the data for the researcher. After each lesson had been videotaped, participants watched their videos and engaged in debrief conversations with the researcher (see Appendix C). Similar to Sewall’s (2006) video-elicited reflection (Moore, 1988; Sherin, 2000), participants discussed their beliefs as transferred to their instruction in the debrief conversation. These conversations were audio taped.

Some cautionary words from author Pirie (1996) tell us that video recording is at times misleading when used as a tool to gather data. Entire images of the classroom cannot be recorded. Where cameras are placed and how much sound is picked up can be misconstrued. For example, placing the camera on the participant shows which decisions that the participant is making and stresses the importance of teacher-talk. Placing the camera on the students with video-recording takes the participant out of
the picture. Finding an appropriate balance of both the classroom and the participant is essential. The researcher assisted the participant in deciding how to best place the camera, but she was not in the classroom when the videotaping occurred. Since the purpose of this study was to provide a prop for the participant to reflect on practice and his or her beliefs regarding practice, some of the cautions raised by Pirie (1996) were not critical to this study.

Data Analysis

Once data have been collected, it is essential to engage in a disciplined process to organize information into categories (Creswell, 2001; Patton, 1987). Merriam (1998) and Miles and Huberman (1994) concurred that qualitative data analysis can be overwhelming. Miles and Huberman suggested a data collection and analysis process that involves “interweaving” (p. 50). This is an approach that has both strengthened data collection and made the data more manageable. This “recursive and dynamic” approach and process of data collection, as stated by Merriam (p. 155), has assisted in illuminating the findings in this phenomenological study.

The data were analyzed in a series of stages. The first stage consisted of transcribing the participants’ reflections about the patterns formed from Kelly’s Repertory Grid Technique and coding these reflections. This first stage of data collection also occurred for participants involved in the semi-structured interviews. Their responses to a combination of open-ended and closed-ended questions were transcribed. In addition to taping the interviews, the researcher was taking notes in case the audiotapes proved inaudible for any reason. This initial stage began a
discovery of what was happening in the data (Glaser, 1978). As the researcher transcribed her own data, she listened and read the transcriptions repeatedly in order to think about emerging themes and patterns.

The second stage in analyzing these data consisted of organizing data into similar categories. Interviews were transcribed with concurrent analysis. Content analysis consisted of a series of steps (1) writing analytic notes (observations, thoughts, other inquiries) after each transcribed interview and (2) summarizing the interviews using a reflective lens about the process of the data collection and the interview itself. This analysis was recorded as a reflective journal. Immediately after the semi-structured interviews and Kelly’s Repertory Grid Technique, the researcher took notes to record the process as an instructional leader involved in guiding teachers’ reflections. These notes were used to identify emerging themes or patterns.

After the video reflection debrief conversations transpired and were transcribed, the third stage of data analysis took place. The transcriptions included a content analysis of analytic notes in the right margin and a summary of those notes into a reflection of the process and thoughts about some emerging themes. The fourth stage consisted of coding all of the transcribed data in the margins. The researcher compiled all of the transcribed data into a binder in order to look at the data in a more holistic manner. Then, the researcher read and reread the transcriptions six times, taking notes in the margins or highlighting certain passages. Units of meaning were identified based on what participants shared about their classroom practice. In addition, units of meaning were identified based on what participants shared about
their reflections. Since the questions were based on how teacher beliefs are formed (see Appendices A-C), units of meaning began emerging related to this. In order to ensure that all themes and patterns emerged, all data sets were coded at the same time. This type of analysis is congruent with the notion that beliefs are inferred as words and actions of the individuals and all beliefs as words in these transcriptions are evidence of participant beliefs.

The researcher then compiled a list of major themes and patterns that emerged from all data sets. The researcher then looked at relationships of these themes to one another and identified themes and sub-themes. This was recorded on a sheet, similar to a Contact Summary Sheet (Miles and Huberman, 1994). Next, the researcher color-coded each theme and its sub-themes using colored pens and highlighters. Then, the researcher reread all of the transcriptions and coded each theme by highlighting or underlining those units of meaning. This process was an iterative process as the researcher read and reread all of the transcriptions from all three reflective tools while simultaneously coding the data for the themes and sub-themes initially identified.

In congruence with an inductive analysis (Lincoln & Guba, 1985) and the constant comparative method (Glaser & Strauss, 1967), data sets from Kelly’s collaborative interview process, the semi-structured interviews, and video debrief reflections were juxtaposed for analysis. Recurrent ideas were identified and color-coded. The units of meaning were recorded and organized into tables. From these tables organized by themes and sub-themes, further analysis took place as the researcher found similarities and differences across the three reflective tools explored.
These units of meaning—the words of the participants, representing their beliefs—were then organized into more tables for more analysis. These findings are presented in Chapter Four. The interweaving data analysis process is displayed step-by-step below in Table 3.2.

Table 3.2. Data Analysis

<table>
<thead>
<tr>
<th>Data were transcribed by researcher.</th>
</tr>
</thead>
<tbody>
<tr>
<td>Transcripts were repeatedly read and analytic notes were taken in margins of each transcription to note key ideas.</td>
</tr>
<tr>
<td>After each interview, the researcher recorded key ideas in a reflective journal. Teacher beliefs were recorded as well as thoughts about the process of using these reflective tools.</td>
</tr>
<tr>
<td>After video debrief conversations, the researcher transcribed, took notes, and completed another entry in her reflective journal.</td>
</tr>
<tr>
<td>From the rereading process, codes were identified from all data sets (beliefs are inferred from words).</td>
</tr>
<tr>
<td>The researcher compiled a list of codes from the data analysis. The codes reflected key educational terminology.</td>
</tr>
<tr>
<td>The researcher looked for patterns and identified larger themes, such as teacher practices, student engagement, and student expectations.</td>
</tr>
<tr>
<td>Data were organized by participants’ quotes into charts and grids.</td>
</tr>
</tbody>
</table>

One level of analysis of the data incorporated thinking about the types of reflection including reflection-for-practice, reflection-on-practice, and reflection-in-practice, as discussed in Chapter Two. The researcher used this lens of reflection-on-practice as participants shared the episodes that they wanted to share and reflected on what they thought they could do differently. The researcher took notes, thinking about deliberate reflective practices.

Strauss and Corbin (1990, p. 17) define qualitative research, as “any kind of research that produces findings not arrived by means of statistical procedures or other means of quantification.” Three components of qualitative research are identified:
data from various sources (interviews being the most common), analytic and interpretive procedures, and a written report of the findings. One advantage of using qualitative methods is that they allow the researcher to explore a variety of avenues as the process unfolds. The data analyses described above include both initial and selective or focused coding as described by Charmaz, 2003, and in keeping with qualitative approaches (p. 320).

After completing all of the above processes and stages, in order to make more meaning of the data, quotations from interviews and debrief conversations were identified and linked to the data and the specific research questions. These quotes were then displayed in tables by themes. This rich coding process helped the researcher analyze the documents again and look for even deeper patterns in the content. This strengthened the construct validity of the process as defined by Yin (2003).

Interpretation of the organized data was recorded in tables. The relationships between the participants’ beliefs and practice can be interpreted in some sort of creative display (Miles & Huberman, 1994). All analyses were kept and organized electronically in order to manipulate the data into additional charts and displays as needed.

Validity

The data analysis process above addresses both construct and internal validity. Multiple sources of evidence were analyzed and a chain of evidence was constructed (Yin, 2003).
**Member Checking**

In order to ensure that the information received from participants was accurate, participants were given their interview transcripts and asked to thoroughly review them. They were asked to explain or clarify what was meant if the researcher or the participant felt that their responses were unclear.

**Researcher Bias**

According to Maxwell (2005), the researcher’s relationships depend upon the research getting done. In addition, Maxwell states that the researcher is the instrument. “The research relationships you establish can facilitate or hinder other components of the research design, such as participant selection and data collection” (p.83). As a site administrator at the same school as the participants, it can be argued that the researcher’s role as both an instructional leader on site and a researcher may present difficulty when eliciting real responses from participants. Yet what is also being investigated in this study is the collective role of the instructional leader and the participants in identifying beliefs and what these look like in instruction.

All participants were informed in advance that their participation was completely voluntary. Any participant who felt uncomfortable during an interview or any part of the study had the option of stopping the interview at any point in time. None chose to quit the study. The principal investigator informed participants in writing if any aspect of the study changed, participants did not have to participate if they did not feel comfortable doing so. Informed consents were secured prior to
proceeding. In order to protect participants’ confidentiality, participants were assigned an identification code and data were organized by that code.

Limitations

This study had a number of limitations that needed to be considered. For example, the study is limited in number of participants and all participants came from one school within one district. Another limitation of this study as reflected in Table 3.1 above is that participants were all relatively young in the profession, with no participant having more than 10 years of experience. In addition this school has been involved in an intense process of restructuring after seven years of not meeting AYP targets. Furthermore, the study examined only three reflective tools. No claims are made that these are the only tools, nor that these are the most effective tools to stimulate teacher reflection. However, the study did explore carefully three tools and showed how they may be used to stimulate reflection. The strengths and limitations of each tool were discussed. Since the researcher and participants were at the same school, an additional challenge was maintaining confidentiality of participants involved in the study. At no point in the study did the researcher discuss the project with other participants, except those involved in the study; however, teachers may have shared with colleagues if they chose.

Conclusion

This chapter presented the phenomenological design and qualitative data collection approaches used in this study to explore tools to promote teacher reflection. As was outlined, multiple approaches were used to collect data including: Kelly’s
Repertory Grid, a semi-structured interview, and video-elicited reflections. In addition, the research took extensive notes and maintained a reflective journal. Data analysis was ongoing throughout the study and several steps, such as member checking and multiple data sources, were used to increase study validity and reliability. Data analysis followed well-established processes of reading and rereading the data multiple times to identify codes and then grouping codes into emerging themes and sub-themes. Chapter Four presents the data organized to answer each research question and Chapter Five discusses the significance of the findings and shows how this study adds to the literature on reflective tools for teachers for identifying beliefs. The study concludes with recommendations for instructional leaders and site administrators discussing how these reflective tools can assist leaders in working with teachers in non-threatening ways to improve instructional practices.
CHAPTER 4:
FINDINGS

The previous chapters described the scope of this study, the connection between this study and existing research, and the research design and methodology. As stated in chapter one, the purpose of this study was to explore three tools or ways of promoting teacher reflection and to understand how these tools might contribute to helping teachers surface their beliefs and instructional practices. This chapter reports the results of the study and presents the data in response to each of the research questions:

1. How did the teachers engage with the three different reflective tools (Kelly’s Repertory Grid, semi-structured interviews and video-elicited reflection)?

2. What teacher beliefs about teaching are revealed through reflective tools?

3. What did these tools reveal about past experiences that may be influencing teacher beliefs and practice?

In this chapter the researcher organized the data in three major sections to answer the three research questions. In the final chapter the researcher synthesizes and discusses the findings and presents implications for practice and areas for further research.

As indicated in chapter three, the primary approach used to address the research questions was phenomenology. This method seemed most appropriate for
exploring the meaning-making that teachers were engaged in as they used the reflective tools with the researcher. Phenomenology relies on repeated interactions with the participants to delve deeper into their sense-making regarding a phenomenon—in this case teachers’ beliefs and teaching practices. Data were collected from participants in two different ways: a collaborative (Kelly’s Repertory Grid Technique) or semi-structured interview process as well as having everyone participate in a video elicitation of a teaching episode.

Seven teachers voluntarily participated in this study. Table 4.1 displays participants’ years of experience at the time that the interviews were conducted and the reflective tools used with each participant. The seven participants were randomly divided into two groups. Three participants took part in the collaborative interview process using the Kelly Repertory Grid technique. Four teachers participated in the semi-structured interview process. All seven participants completed a videotape of their teaching and participated in a video elicitation debrief conversation with the researcher discussing a segment of the videotape that they self-selected. Thus, the primary means of data collection in the phenomenological study were through these reflective tools. In addition, the researcher also kept a reflective journal after each meeting with a participant.

Table 4.1 shows that participants have an array of teaching experience from new teachers (1-3 years) to experienced teachers (5-20 years). Although participants were randomly assigned to each of the two distinct interview types—collaborative grid technique and semi-structured—differences in the participants’ level of experience
were similar in the two groups. Of the three participants in the collaborative interview process Teacher A was a first year teacher with just a few months of experience. Teacher B had been teaching for two years. Teacher C had been teaching for approximately seven years. The four participants who participated in the semi-structured interview process also had an array of teaching experiences. Three of those four participants—Teachers D, E, and F—were considered new teachers with 1-3 years of experience. Teacher G had six years of classroom experience. Overall, the participants in this study could be viewed as novices to the profession, with only two participants representing a moderate level of experience. This sample in many ways reflected the teachers at the school from which they were drawn, since this school was recently reconstituted and a new teaching force selected. In addition, as noted in Chapter Three, the school had been serving a high poverty population, similar to many urban schools, and in the past had experienced high teacher turnover.

Table 4.1. Participants’ Experience and Reflective Tools

<table>
<thead>
<tr>
<th>Teachers</th>
<th>Teaching Experience (months/years)</th>
<th>Collaborative Interview</th>
<th>Semi-structured Interview</th>
<th>Video Debrief</th>
</tr>
</thead>
<tbody>
<tr>
<td>TA</td>
<td>2 months</td>
<td>X</td>
<td></td>
<td>X</td>
</tr>
<tr>
<td>TB</td>
<td>2 years</td>
<td>X</td>
<td></td>
<td>X</td>
</tr>
<tr>
<td>TC</td>
<td>7 years</td>
<td>X</td>
<td></td>
<td>X</td>
</tr>
<tr>
<td>TD</td>
<td>1 year</td>
<td>X</td>
<td>X</td>
<td></td>
</tr>
<tr>
<td>TE</td>
<td>1 year</td>
<td>X</td>
<td>X</td>
<td></td>
</tr>
<tr>
<td>TF</td>
<td>1.5 years</td>
<td>X</td>
<td>X</td>
<td></td>
</tr>
<tr>
<td>TG</td>
<td>6 years</td>
<td>X</td>
<td>X</td>
<td></td>
</tr>
</tbody>
</table>

As noted above in Table 4.1 and explained in detail in Chapter Three, three primary reflective tools were used to engage participants in talking about their
practice. In the next section, the data are presented in regards to how the participants engaged with the tools and how the tools helped them to reflect on their practice.

Teachers’ Engagement with Reflective Tools

The purpose of this study was to understand how a variety of reflective tools could assist teachers in reflecting on their practices, help them surface their personal beliefs, and assist them to reflect on how these beliefs may relate to their classroom instruction and practice. It was assumed that different tools might highlight differing aspects of their practice and that some would be easier to use than others. The insights from participants’ uses and responses to the tools can be valuable for coaches and instructional leaders as they help guide teachers in their learning and use of best practices. In this section, the researcher reports the findings in regard to the first research question: *How did the teachers engage with the three different reflective tools (Kelly’s Repertory Grid, semi-structured interviews, and video-elicited reflection) and what can be learned about teachers’ beliefs about practices from the reflection?*

*Kelly’s Repertory Grid Technique*

As previously described in Chapter Three, Kelly’s Repertory Grid is a collaborative interview technique comprised of two stages where the participant actively takes the lead in the interview process. The technique is described in Appendix A. The first stage is summarized below. All interviews began by the participants describing a lesson they had taught or would teach and which they thought reflected high quality instruction from start to finish. As the participants described
these lessons, the researcher took notes on index cards with each card representing a key idea or component of a lesson. After describing their lesson, the participants were given the index cards and asked to group or sort the cards into similar categories that reflected their practice. The researcher numbered the note cards as the participants described their lessons in order to track the unfolding of the lesson, although in the grouping activity participants placed the cards into similar categories based on their classifications and not by card number. For example, TC described how she would start a lesson after her initial class warm-ups and routines. She said, “So the objective is given and the researcher asked, ‘Are there any questions? . . . and from there I think about how to make the connections between the objective we are learning and their experiences.’” The researcher wrote number three, ask students for questions on one note card. On the next note card, the researcher wrote number four, make connections to their experiences. The researcher gave them numbers to help them reflect about the sorting but not to limit them in grouping the cards. For example, TB constructed a group that she named Time Management and later called “Intro to the Day.. In this group, her note cards were numbered 1, 2, 3, 6, 7, and 14. Indeed, some of the numbers were sequential as one can see from 1, 2 and 3. Yet the numbers did not limit the participant as she placed other note cards into this group (See TB’s grid in Appendix A).

One day following above-described process (labeled A in the Appendix A, explaining this collaborative grid technique), the researcher returned to the participant with a grid comprised of the elements, sequentially displayed and charted on the X-
axis of the grid. For example, in Table 4.2 below one can see students making connections numbered ten and in the tenth row and students relating to stories numbered eleven in the eleventh row of the X-axis. The constructs, the Y-axis of the grid, are comprised of the labels that the participant used when clustering the cards into groups. Teacher A titled a group, Students Prior Knowledge. He described why he had composed the group of those two note cards along with others. He used the descriptors (the constructs) on the Y-axis of the grid. Descriptors Five through Nine describe this group titled, Students Prior Knowledge. They include student experiences, refresh student ideas, new learning, new knowledge, and know where students are at.

The participants then coded the relationship of the elements and constructs by using numbers: one for definitely not associated, two for neutral, and three for definitely associated. The researcher observed the participant coding the data and was available for clarification or assistance if needed. For example, Teacher C needed more assistance at first when coding and then was able to complete the grid with more confidence.

The second stage of the collaborative grid technique was an exploration of what might lie beneath the groupings. Together the participant and the researcher analyzed and discussed any meanings, significances, or relationships emerging from the associations or absence of associations (See Table 4.2). Six significances emerged from associations discovered and named by Teacher A and included for students, for self, gaining students’ knowledge through journaling, developing habits, student
experiences and building prior knowledge related to pre-reading strategies. TA discussed knowledge through journaling as evidenced by this quote, “I think journals are a big part (of the classroom); it gives them (students) a chance to use their imagination” (TA—Kelly’s Grid Technique).

Table 4.2. Teacher A’s Kelly’s Repertory Grid

<table>
<thead>
<tr>
<th></th>
<th>1 Student Knowledge</th>
<th>2 what students do next</th>
<th>3 belief about habits</th>
<th>4 Student expectations</th>
<th>5 Student experiences, s knowledge</th>
<th>6 Refresh student ideas</th>
<th>7 New learnings</th>
<th>8 New knowledge</th>
<th>9 Know where students are at</th>
<th>10 Can’t leave room until done</th>
<th>11 For students</th>
<th>12 For me</th>
<th>13 To keep pace</th>
<th>14 Student work</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Ss come in, Journals on desk</td>
<td>3 3 3 3 3 3 3 3 3 3</td>
<td></td>
<td></td>
<td></td>
<td></td>
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<td></td>
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</tr>
<tr>
<td>2</td>
<td>Topic on board</td>
<td>3 3 3 3 3 3 3 3 1 3 3</td>
<td></td>
<td></td>
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<td></td>
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<td></td>
<td></td>
</tr>
<tr>
<td>3</td>
<td>Don’t waste time</td>
<td>1 3 3 3 1 1 1 1 3 1 3 3 3 3</td>
<td></td>
<td></td>
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<td></td>
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</tr>
<tr>
<td>4</td>
<td>Walking by</td>
<td>1 1 1 1 1 1 1 1 3 1 3 3 3 3</td>
<td></td>
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<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>5</td>
<td>Monitor and stamp student work</td>
<td>1 3 1 1 1 1 1 1 3 1 3 3 3 3</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
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<td></td>
<td></td>
</tr>
<tr>
<td>6</td>
<td>Quick Transitions</td>
<td>2 3 3 3 1 1 1 1 1 1 3 3 3 3</td>
<td></td>
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<td></td>
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<td></td>
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<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>7</td>
<td>Some start other activities</td>
<td>2 3 3 3 1 3 3 3 3 1 3 3 3 3</td>
<td></td>
<td></td>
<td></td>
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<td></td>
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</tr>
<tr>
<td>8</td>
<td>Spelling activities</td>
<td>3 1 3 3 1 3 3 3 3 3 3 3 3 3</td>
<td></td>
<td></td>
<td></td>
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</tr>
<tr>
<td>9</td>
<td>Pre-reading strategies</td>
<td>3 1 3 3 3 3 3 3 3 3 3 3 3 3</td>
<td></td>
<td></td>
<td></td>
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<td></td>
</tr>
<tr>
<td>10</td>
<td>Ss making connections</td>
<td>3 1 3 3 3 3 3 3 3 3 3 3 3 3</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
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<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>11</td>
<td>Ss relating to stories</td>
<td>3 1 3 3 3 3 3 3 3 3 3 3 3 3</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
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<td></td>
</tr>
<tr>
<td>12</td>
<td>Reading groups, 1/2 SRA, 1/2P</td>
<td>3 1 3 3 1 3 3 3 3 3 3 3 3 3</td>
<td></td>
<td></td>
<td></td>
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</tr>
<tr>
<td>13</td>
<td>Switch groups</td>
<td>1 3 3 3 1 1 1 1 3 1 3 3 3 3</td>
<td></td>
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<td></td>
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<td></td>
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</tr>
<tr>
<td>14</td>
<td>Student presentations</td>
<td>3 1 3 3 1 3 3 3 3 3 3 3 3 3</td>
<td></td>
<td></td>
<td></td>
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</tr>
<tr>
<td>15</td>
<td>Outline/story</td>
<td>3 3 3 3 1 3 3 3 3 3 3 3 3 3</td>
<td></td>
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</tr>
<tr>
<td>16</td>
<td>Checklist for teacher</td>
<td>1 3 1 3 1 1 1 1 3 1 3 3 3 3</td>
<td></td>
<td></td>
<td></td>
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</tr>
<tr>
<td>17</td>
<td>Draft, paper</td>
<td>3 3 3 3 1 3 3 3 3 3 3 3 3 3</td>
<td></td>
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</tr>
<tr>
<td>18</td>
<td>Draft, computer</td>
<td>3 3 3 3 1 3 3 3 3 3 3 3 3 3</td>
<td></td>
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<td></td>
</tr>
<tr>
<td>19</td>
<td>Checklist for students</td>
<td>2 3 3 3 1 3 3 3 3 3 3 3 3 3</td>
<td></td>
<td></td>
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<td></td>
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<td></td>
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</tr>
</tbody>
</table>
**Student expectations.** One theme that emerged from Kelly’s Repertory Grid is student expectations. Both TA and TB shared this significance in their classroom practice. TA called this, *developing habits* and TB called this *routine tasks to set up student expectations.* TB said, “It’s really important to use your class time efficiently so I don’t have them do a lot of it (independent work) in class” (TB—Kelly’s Grid Technique). In alignment with the emerging theme of student expectations, TA discussed his own personal family experiences, “Maybe it’s just the independence that I have had from a young age--my dad wanted me to be on my own”. This quote suggested, and the member-checking confirmed, that the teacher wants his students to do independent work on their own after school and not use class time for what should be independent work. Thus, the grid technique not only illuminated teacher classroom practices (using journals, posting the day’s objective on the board) but also surfaced a belief about how classroom time should be used that had been formed during this teacher’s childhood.

**Reading comprehension.** Although all teachers had a category for reading comprehension, only TC named one of her significances reading comprehension questions. This topic was most probably a strength of this participant, reflecting her training as a language arts teacher, since she provided three examples, “Let’s look at the character’s traits …predictions…let’s draw inferences” (TC—Kelly’s Grid Technique). It is important to note that reading comprehension is a district focus goal and two of the reading strategies, predictions and inferences, were pre-reading and during-reading strategies that the site adopted as a focus.
Significance of Kelly’s Repertory Grid Technique. The previous examples represented the kinds of information that surfaced regarding instructional practices by these three participants as they engaged with the grid. The first stage of the collaborative interview technique enabled the participants to remain focused on describing their lesson step-by-step. The process of recounting a lesson and then reflecting on and categorizing discrete elements of the lesson seemed to provide an opportunity for the participants to reflect on a quality lesson and then identify key attributes, which they grouped and labeled as a theme in that lesson that could be considered indicators of its quality. This first stage encouraged participants to reflect at a deeper and more abstract level as they had to collapse their descriptions into groups and describe these groups. In addition, as participants coded the data by associations or absences of them, the participants reflected more on the relationship between their descriptions of their lessons and the descriptions of the constructs. This abstracting process involved participants in their own reflective processes and enabled participants to learn more about themselves (e.g., the surfacing of need for students to practice independence and the desire to incorporate that development into teaching) and to think more about what they do in the classroom. For example, in Teacher C’s debrief conversation about a lesson, she mentioned the significance of differentiation that she abstracted from her grid, “I think the questioning technique, the level of questioning tied into the goal of differentiating...it probably wasn’t one of my best lessons.” It seems as if Teacher C is beginning to think about how to ask different levels of questions for different levels of students. According to the researcher’s
reflective journal, “She really did get into the task and also enjoyed speaking about her experiences” (Researcher’s Journal after TC Kelly’s Grid). From the researcher’s experience, field observation notes, and journal, TC was engaged with Kelly’s Grid as a reflective tool. All three of the participants expressed that they enjoyed completing the grid, although TA and TC took more time when coding the relationships between the elements and constructs than did TB.

The first stage of the collaborative process enabled the researcher to assist the participant by taking notes, thus perhaps making the participants feel more in control of the reflective process. This first stage also enabled the researcher to learn about the participants’ thinking processes as the participants grouped the cards and described the rationale for the grouping. In addition, the researcher assisted when needed to provide an example as the participant began coding the relationships or absence of relationships. One participant needed more assistance than the other two at the beginning of the process, but then expressed that she enjoyed the process, although she felt it was challenging.

As described above, the second stage of Kelly’s grid technique involved the participant identifying and naming the relationships or absence of relationships. Participants then discussed these meanings and significances. At this point the researcher engaged more actively by asking guiding questions or probing questions as a conversation ensued such as, Can you explain that more? or Tell me more about this.... These questions allowed participants to take their thinking to a deeper level and surfaced beliefs that served as foundational for their practice. The researcher
learned more about the significances and experiences of the participant as she listened to the descriptions and explanations of the processes, and the participants appeared to engage in more intense reflective processes in contrast to the earlier steps, which were more analytical.

To engage with the grid technique requires three types of processes: a linear recall of a best teaching lesson, two abstract tasks of grouping and coding relationships, and a conversation or description of the significances. This tool is a complex tool, yet it was one that the participants responded well to perhaps because they maintained control during most of the process. In addition, the tool taps into different learning modalities. According to the researcher’s journal, she noted that math teachers had an easier time with coding the grid than did the English language arts teachers. In addition, the English language arts teachers had an easier time naming the significances and findings and were better at describing these. She noted, “Perhaps global thinkers respond differently than linear thinkers do in different parts of the tool” (Researcher’s Journal). Although it was challenging for one, particularly in the beginning, the participants all engaged in rich discussion with the researcher about their lesson and rationale for classifications as they sorted components of the lesson into themes.

Semi-structured Interviews

As described in Chapter Three and documented in Appendix B, the semi structured interviews also asked participants to first respond to the prompt: Describe a classroom lesson that would represent your best teaching. Four sub-questions were
part of this overarching question and incorporated teacher activity, student activity, resources, and lesson outcomes. Thus, with this tool, participants are engaged by recalling and retelling. For example, TD described, “we’d talk about some of the vocabulary words they didn’t know and then the students would be writing a predict-o-gram, drawing the pictures of what they thought the story was going to be about” (Semi-structured Interview). Another participant discussed reading comprehension: Teacher G said, “We did kind of an elaborate dive into the chapter to the activity. I taught them how to navigate a text and look for bold” (Semi-structured Interview).

Since the interview was conducted in a conversational format, this tool was highly engaging but much less analytical that the grid. Several themes emerge from the transcripts of the interviews, but these themes must be pulled from the data (transcript of the interview) by the researcher and not by the participant as was the case with Kelly Repertory Grid (See Appendix A). One dominant theme across three of the interviews was reading comprehension as a major focus of the school and district, indicating this tool could be used to learn how a reform is being accepted by teachers.

School and district focus goal. Three of the four participants who completed the semi-structured interviews mentioned reading comprehension as the school’s and district’s site focus goals. In addition, two participants surfaced vocabulary development and reading comprehension in the Kelly’s Grid activity. All the participants interviewed with the semi-structured reflective tool included vocabulary development as a precursor to reading comprehension. For example, TE said, “You need to figure out if they truly understood the meanings of the vocabulary… I feel that
the three steps are very important and… [students] were able to comprehend everything” (Semi-structured Interview).

**Significance of the semi-structured interviews.** These interviews allowed participants to freely tell their stories about their best teaching practices and to discuss their beliefs and experiences (See Appendix B). These narratives provided opportunities for participants to share their thinking; some of the questions forced participants to think about how their beliefs were enacted in the classroom as evidenced by interview questions such as, *How do you see beliefs enacted in the classroom?* and *Can you think of any experiences that you bring to your teaching today based on your experiences?*

The semi-structured interviews engaged the participants in a conversational and story-telling framework, allowing them to share their teaching and experiences that influenced their teaching. For example, TD said, “Every kid is smart--they have different aptitudes for different things but if I think that they’re all smart, this makes me hold them to a higher standard I think…” (Semi-structured). This belief quote confirmed a previous discussion in the semi-structured reflective tool where TD had been sharing her positive experiences about a professor who helped maintain high expectations for her. She said, “So I had to get up with my journal…that was intimidating but I could tell he knew and he would compliment my ability based on what he knew I knew…” (Semi-structured). All participants in semi-structured interviews connected their beliefs to their past experiences. The engagement is evidenced through this reflective tool. In addition, after this interview, the researcher
recorded, “This process helped TD speak with conviction about her beliefs that all kids have the right to learn…(Researcher’s Journal). According to the researcher’s journal, all the participants seemed relaxed during the interview process and were eager to share. All participants expressed that they enjoyed this interview after the fact. However, the interview did not elicit the same level of analysis nor detail as the Kelly’s Grid technique, nor were the interviewees as focused in describing their lesson, which the recording of key components on the cards seemed to elicit during the Kelly Grid technique.

Another contrast with Kelly’s Grid is that the semi-structured interview put the researcher in charge both in the initial interview and in any analysis of the interview. Nevertheless this type of interview tool allowed the researcher to learn more about the participant in a focused and structured way. Also, as will be explored in more detail in Chapter Five, the semi-structured interview could be an important tool to engage with a new staff and to use to show a sense of care, especially if the school has recently undergone restructuring.

*Comparing and Contrasting Reflective Interview Tools*

The two interview reflection tools differed in various ways including the extent of the level of reflection and thought. The participants of the semi-structured interviews reflected on their practice and beliefs from experiences but in a descriptive manner as opposed to the collaborative interview process, which involved a linear recall, analysis, and reflection while manipulating cards for grouping and coding associations. In addition, there appeared to be deeper reflection as participants and
researcher explored the significances that emerged from the associations of the elements and constructs.

The interviews differed significantly in the level of engagement and in who took the lead in the reflective process. The semi-structured interviews allowed for more initial reflection of the researcher than the participant since the researcher had more control in the process as she was asking the questions. Kelly’s collaborative grid technique engaged the participant more as the participant manipulated the cards, coded the associations, and named the significances as well as elaborated on these. The semi-structured interview did not use manipulatives but did give specific questions that prompted reflection (Appendix B). Kelly’s Grid technique involved the researcher as much as the participant allowed; thus, the researcher’s role varied across the three collaborative interviews.

The reflective interview tools differed greatly in time required for implementation. The semi-structured interviews ran approximately 30-45 minutes and Kelly’s Repertory Grid lasted up to three hours. Furthermore, Kelly’s Grid Technique required two meetings at least one day apart as the researcher created the grid format so the participant could code the relationships. However, as will be explored in Chapter Five, instructional leaders spend this amount of time in traditional evaluation processes that often teachers regard as wasted time (O’Neill, 1996).

In summary, both interview tools encouraged and engaged participants in reflection. Kelly’s Repertory Grid was more engaging and elicited more internal reflection on part of the participant since the participant was in control of the process
and was doing the work. Perhaps reflection-on-practice for participants in the semi-structured interviews took place at a later time, after the participants returned to their classrooms. This study did not attempt to measure later reflection-on-practice.

**Video-Elicited Reflection**

As described in Chapter Three, all seven participants completed a video debrief conversation after choosing a lesson to tape and self-selecting an episode from this lesson that they wanted to share. Asking teachers to video tape a lesson and select a clip to share required a significant level of engagement and commitment to the process. It also required the teachers to reflect on their own about what lesson to tape and what part to select. In reflecting on the video, both Kelly’s Grid and semi-structured interview participants were asked, *Are there any thoughts, observations or comments that might come to mind as you see yourself teaching?* (See Appendix C for protocol used when reflecting on the video with the researcher). A noteworthy finding was that all participants phrased their response “I think that…” and used specific language indicating insights they were gaining from watching the video. Teacher G discussed what she would do differently, “I think that this would be good to spread out over a couple days, instead of trying to do all in one huge lesson…” (Video Debrief).

With all participants, the researcher would tie the question above to the first question in the debrief protocol—*So is there anything you’d like to tell me about this lesson before we get started?* (Appendix C). For example, when asking the question above to Teacher C, the researcher also said, *I was listening to everything…and you did bring up discovery learning. Maybe you can talk more about this.* This type of
prompting enabled the participants to think about and focus on one or a few aspects of the video as they saw themselves teaching. As evidenced here, TC responded to her video, “I think as far as teaching to the high group I wanted them to know we’ve done the novels, we’ve done the novellas now let’s kind of think about them and give them a name” (Video Debrief). This type of prompting with probing questions helped take this tool into a more conversational style. Furthermore, the discussion led to more of a conversation about the participants’ instructional practices and an understanding of the participants’ beliefs behind those practices. The third protocol question helped both the researcher and the participant maintain this focus—Thinking about your beliefs as in our previous conversations, in what ways do you see your beliefs coming alive or being enacted in this video? However, the question in this explicit format was not asked in all cases, as the researcher and participant began talking about the beliefs coming alive in the video in more of a conversational style. After listening to TG talk about why she spends a lot of time frontloading vocabulary in the Prentice Hall selection stories and why she spends time activating prior knowledge and building prior knowledge, the researcher asked TG, “Can you think about what you talked about before…and relating it to the…good experiences by working abroad and traveling?” (Video Debrief). The researcher was thinking about TG’s experiences that she shared in her semi-structured interview about working and teaching newcomer English Learners in Mexico and in a former position, as the lesson she described was a newcomer lesson. TG responded to this question, “Now that I’ve lived in Mexico for two months…I went into indigenous cultures…so I understand where some of these
kids are coming from what their lives were like” (Video Debrief). This type of questioning, building on listening to participants and tying in what was already shared by participants enables the researcher (or administrator or coach) to learn more about the participants’ experiences and beliefs and enables the participant to reflect at a deeper level. This type of questioning and prompting allowed for participants to talk about their beliefs as related to their practices and show the participants that the researcher was intently listening.

The video debrief tool elicited much discussion on life experiences because of the types of questions that were addressed (See Appendix C and discussion above). Discussed more in depth below are the themes of family, positive educational experiences, and negative educational experiences. In addition two comments about religion and death, each surfaced by one teacher, are presented because they show how major life events can influence a teacher’s practice.

Reteaching. The debrief conversations elicited thoughts and discussion surrounding the reteaching of the lessons. TE said, “In that particular lesson...I’m bad at having oral discussions and no writing--there was a discussion and reading aloud…and no written work” (Video Debrief). TB evidenced her thinking about reteaching by saying, “I think that would be my next step in doing this project is… providing the kids… differentiating with them... (by) making (the project) more formal, more structured, more organized” (Video Debrief). Teacher C said, “When I think about the lesson…it probably wasn’t one of my best lessons… but I think as far as teaching to the high group I wanted them to know we’ve done the novels” (Video
Debrief). It is interesting to note that almost all of the participants reflected on what the students’ work would look like and what the students would produce as a result of them changing their instruction. This reflection shows that teachers are making important associations between their teaching and potential student outcomes. The data also suggest the potential power of video reflection to change not only teacher practice but also lead to different outcomes for students as a result of changes in teacher practices.

One participant, TD, talked about something she was specifically doing that she would alter. After sharing her episode, she said, “As I see myself teaching, I first of all realize that I am not using my normal voice but one several decibels above….as much as I try to come across as myself, I change somewhat as I get in front of the class” (TD—Video Debrief). This reflection created wondering for this participant, “I wonder what that puts in students’ minds?” she said, reflecting on a personal aspect and perhaps her classroom environment.

**Significance of video elicitation.** This type of reflective tool, compared to the other two tools, brought to the forefront more prominently the idea of changing teacher practice as evidenced above. In other words, as participants watched with the researcher the video clip they had selected, they often noted what they would change if teaching the lesson again. Completing either a Kelly’s Grid interview or a semi-structured interview prior to the video debrief conversation allowed the researcher and participant to reflect on what the participant had shared previously about a quality lesson. This process enabled the researcher to remember and compare participants’
specific teaching practices that were espoused and then viewed in action. This
reflective tool in combination and in succession shows evidence of quality
conversations around instruction and reflection on what participants shared they would
do differently. It is important to note that the study’s design of completing two
reflective tools elicited these data. It is probable that completing the video debrief tool
without any prior reflection would produce different results for both the participants
and the researcher; however, other studies have documented the power of video as a
tool to stimulate self-reflection (Sewall, 2007).

In addition to surfacing ideas that the researcher would want to change in their
practice, the video debrief also brought to the foreground reflections by several
participants about life events that had influenced their teaching. TG shared, “I think a
lot of my influences have to do with my mentors I’ve had…starting with my
parents…my dad's a professor, my mother a teacher and a writer. I was raised in that
kind of environment” (Video Debrief). This surfacing of factors that influence their
belief about teaching may in part be due to the seeds that were planted through one or
the other two reflective tools. It also could be the result of specific questions that were
posed and that the video allowed these factors to surface.

To some extent the video tool is similar to the collaborative interview
technique as it puts the participant in control of the reflective process since
participants videotape a lesson and share an episode of that lesson with the researcher.
In addition, the participant keeps the video so the implied feeling is that they have
shared what they wanted to share about their practice. After the video debrief
conversations, participants expressed that they liked learning more about themselves and seeing things about their practice that they hadn’t seen before.

The prompting questions used to get participants thinking were not always necessary, as participants just began talking freely about the video, a pattern found in previous studies using video elicitation (Pirie, 1996; Halter, 2006; Sewall, 2007). The researcher is not as involved in the reflective process as is the teacher. The teacher has probably been reflecting on the lesson since they self-selected the episode they wanted to share and then reflected on. As referenced and synthesized in Table 2.2, reflecting in, on, and for practice are all types of reflection that are evidenced in these debrief conversations. This reflective tool allows for reflection specifically on changing teacher practice and instruction.

To summarize, reflective tools are valuable for teachers as they enable teachers to reflect at different levels on their instructional practices and the beliefs and experiences behind these decisions around instruction. These tools provided insights into teachers’ thinking and teachers’ personal experiences and beliefs. As defined by Pajares (1992), since beliefs must be inferred, a belief is more certain when it can be evidenced in both the words and actions of an individual. All three tools allowed for the participants’ words to evidence their beliefs. The video reflective tool allowed for beliefs to be inferred from both the words and actions of the participants. The data displayed in tables below reflect many of the participants’ words (beliefs) surfaced across the three reflective tools.
Teacher Beliefs about Instructional Practices

In this section, the researcher reports the findings in regard to the second research question: *What teacher beliefs about their practice are revealed through reflective tools?* As discussed above in response to research question one, all tools helped teachers to reflect on their practice. Reflective thoughts and processes are essential because they move teachers to deliberative teaching and deliberative action in classrooms (Dewey, 1964; Fullan, 1982, 2001). Teaching is a complex process. As more and more reform movements hit our schools because students continue to fail, reflection, which produces new learning and thinking, will be necessary for teachers. Because we are engaged in the process of changing our schools from merely providing education to the challenging goal of wanting all children to achieve at high levels, pathways are needed to facilitate individual and collaborative teacher learning. Prior research suggests that when teachers are engaged in reflective processes that stimulate changes in practices, student learning can be improved (Hewitt et al., 2003; Norton-Meier, 2003).

From the data analysis, six major themes emerged that provide insights into these teachers’ reflections on teaching, especially in a school that serves large numbers of students from poverty and whose first language is not English. The themes included teacher practices, student engagement, higher-level thinking, new learning and new knowledge, high expectations, and collaborative experiences with colleagues. As will be seen, almost all of these themes had several sub-categories, which further clarified what the participants meant within the major themes. This study tested out various
reflective tools to explore teacher beliefs about practices. As addressed previously in this chapter, various reflective tools led to varying types of reflective practices; yet all of the tools encouraged and promoted reflection and new learning for both the participants and researcher. The data presented below are collapsed across the instruments as the participants’ words describe their actions in their classrooms. As mentioned above and in Chapter One, beliefs must be inferred by words and actions (Pajares, 1992). This is why the data are summarized and drawn from across all instruments.

Teacher Practices

All seven participants repeatedly mentioned teacher practices by ways of indicating that they were helping students (1) check for understanding, (2) build background knowledge, (3) activate prior knowledge, or (4) use reading comprehension strategies to access the core content.

Checking for understanding. Six participants discussed some aspect of checking for understanding involving discussion between the teacher and his or her students and three participants (C, D, and E) actually used the term “understanding.” “When you get into reading, there’s a lot of checking for understanding for comprehension, because if they don’t understand the events that are occurring, they’ve lost the story” (TC—Kelly’s Grid). Teacher C actually used the language of “checking for understanding.” Both TC and TD specifically implied that the teacher must stop when reading and lead a discussion. “We stop and make sure we give the students a couple of seconds to discuss it at their table, and then we share with the
whole class and make sure we understand.” (TD—Semi-structured Interview). TD and TE evidenced students’ understanding content in the lesson by their ability to converse about the content. Teacher E said, “I measure it more by an understanding—students being able to understand or restate or reiterate what the lesson was” (Semi-structured Interview).

**Building background knowledge.** Six participants discussed the ideas of scaffolding, vocabulary building, and using visuals. TA talked specifically about math concepts and building upon standards, “Like with Math, it’s so hard because it builds. To understand from 4th and 5th grade how are they going to understand at 7th and 8th grade” (Kelly’s Grid).

Five participants discussed in detail how to access the core context by building vocabulary. “So there’s a lot of concentration at the beginning with vocabulary, bringing them into that story’s setting” (TC—Kelly’s Grid). Teacher F described using context clues to decipher vocabulary words when reading, “So we did a lot of stopping in the middle of sentences talking about the vocabulary…go back and try to read the sentence again and see what that word can mean” (Semi-structured Interview). These six participants associated explicit teaching of vocabulary instruction as part of building background knowledge. These participants seemed to recognize the need to build background knowledge if the predominately Latino and second language learners were going to be successful in learning new and challenging concepts.
Activating prior knowledge. In addition to discussing building knowledge, three participants also mentioned making connections using quick-writes and visuals. Two of the participants indicated they use visuals to activate prior knowledge and as a tool for building interest. For example they discussed the importance of using movies to help students access novels and other important concepts. TC discussed tying in a short film to activate students’ knowledge. “And I could always refer back to the short film, you can remember how the antagonist or the protagonist…interacted” (TC—Kelly’s Grid). TE recognized that if the vocabulary cannot be connected to what students already know, students often tend to shut down. In her own words she explained, “The way they ask it is it’s not very kid-friendly, and this is hard to teach, because when you go to those words that they are not used to, they shut down” (TE—Semi-structured Interview). TG expressed that it was important to link current work with previous assignments to help students more quickly grasp what they were to do. “So, with this Mesoamerica project I felt comfortable that they knew how to do their research, and they knew how to cite their sources” (TG—Semi-structured Interview). Five of seven participants discussed activating prior knowledge to support student learning.

Reading comprehension strategies. The final teacher practice strategies mentioned by all seven participants were pre-reading strategies. Particularly important were the strategies predicting, making inferences, and graphic organizer tools such as THIEVES for pre-reading. Three of the participants talked about making predictions and the other four talked about accessing the text through titles, headings, and context
clues. It is important to note that pre-reading was a school-wide focus at the time. As displayed below in Table 4.3, all participants were thinking about how pre-reading was incorporated into their classroom instruction.

Table 4.3. Reading Comprehension Strategies

<p>| | |</p>
<table>
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<tbody>
<tr>
<td>TA</td>
<td>…but after that we started working on the predictions based on the title, and predictions based off the summary that I read for them of what they think the story is going to be about…</td>
</tr>
<tr>
<td>TB</td>
<td>They’ve already had to do THIEVES, they’ve already had the vocabulary.</td>
</tr>
<tr>
<td>TC</td>
<td>Let’s look at the character’s traits. Let’s look at some predictions, what do you think will happen next? Let’s draw inferences.</td>
</tr>
<tr>
<td>TD</td>
<td>…Then the students would be writing a predict-o-gram, drawing the pictures of what they thought the story was going to be about.</td>
</tr>
<tr>
<td>TE</td>
<td>The kids took notes and discussed it and wrote predictions and went back and wrote down if our predictions were correct…</td>
</tr>
<tr>
<td>TF</td>
<td>We look for context clues…we would discuss the vocabulary, which was a challenge for them.</td>
</tr>
<tr>
<td>TG</td>
<td>We did kind of an elaborate dive in chapter to the activity. I taught them how to navigate a text and look for bold. They had post its. That was the first step. They labeled what's a header. What's a subtitle? What's a photo?</td>
</tr>
</tbody>
</table>

These four sub-themes of teacher practices could be seen as reflecting or representing the beliefs about practices of these teaching professionals as evidenced by their words and details of their actions in the classroom revealed through engaging with all the reflective tools.

*Student Engagement*

One prevalent theme throughout all of the interviews is student interest and student engagement. When looking at the data, student engagement is also equated to student learning by the participants. Four subthemes inside of this overarching theme are visuals, technology for engagement, group work, and reciprocal teaching—
students teaching each other. Based on the data, creating lessons that are student-friendly is definitely a priority for participants as six out of seven teachers referred to this practice.

*Visu**als.* Two of the participants talked in depth about using visuals that kids could relate to in order to activate and build their background knowledge. Both TB and TD seemed to incorporate visuals regularly, based on their responses. TB says, “I like to do something visual so we might watch a video, do an exercise, show them pictures, but I put…a lot of visuals in there” (Kelly’s Grid). Teacher D also seemed to use visuals regularly, “Like before we read a story, I would have visuals up there and we’d talk about some of the vocabulary words they didn’t know” (Semi-structured Interview). The sub-theme of visuals for student engagement overlapped with some teacher practices such as activating background knowledge. If that practice is completed in a way that is more fun and engaging for students, then students may be able to better connect to the content being explored.

*Technology.* The second sub-theme with the concept of student engagement was technology. As a school with a focus goal of technology for engagement in every classroom including resources and materials to support this, it is no surprise that this theme emerged. Four of the seven participants discussed incorporating some aspect of technology including Keynote presentations created by groups of students; media and TV clips to build interest and engagement; and specific educational programs like BrainPop and Safari Montage, two online, high-interest programs with clips to download for lessons. As Teacher B explained, “I love BrainPop…and the kids love
Safari Montage and the cartoons that they have there--the Kids can relate to them and they are easy to understand” (Kelly’s Grid). After describing how she incorporated media into her lessons with little clips or cartoons, Teacher G felt successful about her students’ learning. “I find I'm most successful when I can bring in little things like that” (Video Debrief).

Group work. The third sub-theme under student engagement was group work. Three of the participants discussed group work and group projects to keep students motivated and engaged in their learning. One participant talked about an activity that her students did in groups to keep them on task and interested in learning. “Then I gave them questions and they worked in groups and they looked for answers to those questions…. The next step of it was that they made questions in groups and they made posters” (TG—Semi-structured Interview). Teacher F explains, “They were assigned jobs that they had to do, you know in their groups so that worked really well” (Video Debrief). All participants gave very positive responses about how group work kept their students engaged and helped in their learning.

Reciprocal teaching. The final sub-theme mentioned by all of the participants except for TA who has the least amount of classroom teaching experience (two months) was reciprocal teaching. Many discussed the concept in detail and used identifiers such as student talk, student interaction, student discussion, and students teaching each other. The difference between reciprocal teaching and group work is that during reciprocal teaching, students spend time reteaching each other and offering guided practice. Group work is distinct in that participants might have had students
completing tasks together but students not necessarily reiterating concepts to each other.

Participants who referenced reciprocal teaching or some aspect of it discussed students talking and teaching each other in groups. Some participants used reciprocal teaching in less formal structures and indicated they implemented this informal form more frequently in their classrooms. For example, TE discussed in detail the structure of her classroom environment with students at tables and the day-to-day activities where kids talk about their learning and teach each other. In addition, she talked a lot about her experiences as a learner when she was younger and how talking to other students was a necessary component of her learning style. “I think with the reciprocal teaching it helps the kids better understand what they are reading before they shut down because they can discuss it and kind of get different aspects besides the participant telling them they have to do it (read it)” (TE—Semi-structured Interview). These experiences may explain and shape TE’s beliefs about student talk and students regularly teaching each other in her classroom. Teacher B frequently structures student interactions as evidenced by her statement, “I just feel that sitting and doing something by yourself is something you can do at home and you don’t need to do that in class” (Kelly’s Grid).

In summary, the theme of student engagement revealed four sub-themes: visuals, technology, group work, and reciprocal teaching. Across all three reflective tools, these themes emerged. From the above-mentioned participant contributions and from the observations and interpretations of the researcher, one can conclude that this
theme is very important for participants. Participants recognize that without student engagement, student learning is limited.

Higher Level Thinking

Many participants discussed some aspect of higher-level thinking in regards to Bloom’s Taxonomy. This was evidenced by the mention of questioning, analysis, and synthesis. Participants in both the semi-structured interviews and the collaborative interviews discussed higher-level thinking in their lessons. Furthermore, TC, TF, and TG all reflected in their debrief conversations about how they would spend more time and alter their lessons to create more challenging conversations and discussions for their learners. These insights indicate that given opportunities to reflect in and on their practice, teachers can identify when their intent to use high order thinking strategies may not be happening in reality. It is also important to note that the participants felt so secure in this process that they were willing to share this negative reflection on their own practice. This theme is not surprising as one of the school’s focuses is working on questioning strategies as a reading comprehension and engagement strategy. Teacher C reflected in her debrief conversation how she could tie questioning strategies to improve her goal of differentiation. “Now that I look at it I think the questioning technique, the level of questioning ties into the goal of differentiating” (TC—Video Debrief). Teacher F also reflected on her practice in the debrief conversation, “I realize that I need to maybe talk slower, maybe ask a few more questions…getting the students to maybe even question (each other)”. Teachers B and E discussed “synthesizing, analyzing and inferencing” (TB—Kelly’s Grid & TE—Semi-structured
Interview). All three tools surfaced higher-level thinking ideas, and participants seemed to be reflecting more on their practice when discussing this theme as evidenced by reflections of what they would do differently. Perhaps participant beliefs about providing more higher-level thinking opportunities related to the belief of high expectations for students. In addition, participants may have articulated this theme of higher order thinking because of its centrality to developing student reading comprehension, one of the central foci of the school’s reform efforts.

**New Learning and New Knowledge**

Two participants actually used the terms, “students’ knowledge” and “new knowledge” (TB & TC—Kelly’s Grid). This related to the responsibility of the participant to provide an environment and structure for learning and also how the student participated in the new learning experiences. TG discussed this notion of new learning and related it to her family members’ reflection of learning and how this influence has affected herself and her teaching. “I have a lot of like people in my family are very interested in academia…he was always learning until the day like say my grandpa died. He was always learning something and I kind of have that same mentality” (TG—Video Debrief). TA discussed developing habits and having learners learn about themselves. “I want them to develop habits when they come in and learn about their experiences through their journals” (TA—Kelly’s Grid). Last, TE discussed learning vocabulary through a three-step process in order for her students to solidify their learning of that new vocabulary.
**High Expectations**

One theme present in all participant interviews was high expectations for students. The data representing this theme and three sub-themes included classroom management and routines, modeling learning from mistakes, and seeing the good in all. Overall, richer data supporting two of the sub-themes—modeling learning from mistakes and seeing the good in all--emerged from video debrief conversations and semi-structured interviews. To explain these findings, the narrative and storytelling structure of both of these interviews allowed participants to talk more about their own general personal experiences. The collaborative interviews allowed for this explanation and narrative but only based on the significances that the participant identifies. This evidence gives us more insight into these reflective tools.

**Classroom management and routines.** It is important to note that TA, TB, and TC, teachers who completed the collaborative interview process with Kelly’s Repertory Grid, discussed daily routines and student expectations more specifically, citing examples of using tools such as checklists, folders, and review of written behavior expectations. This is displayed in Table 4.4 below. On the contrary, TD and TE of the semi-structured interviews described their classroom environments and how that relates to their management style. Teacher F discussed in her video debrief conversation a personal experience and her reflection about how she transfers her negative experience into a positive one for kids. Teacher G also reflected from sharing her video that she has altered a management tool in order to create high expectations in her classroom. These data also provided more evidence for research
question one as the first stage of Kelly’s Repertory Grid helped participants keep a linear focus on a classroom lesson. In addition, these data helped support the claim that the semi-structured interview tools provided more of an opportunity for participants to share narratives and stories.

Table 4.4. Classroom Management and Routines

<table>
<thead>
<tr>
<th>TA</th>
<th>The fourth one is management and that is checklists, you monitoring, stamping. And students who don’t finish their journals, their names are on the board.</th>
</tr>
</thead>
<tbody>
<tr>
<td>TB</td>
<td>Because they are all just part of getting the students in, getting them settled, review the expectations for the day, review behavior expectations, getting them on their routine.</td>
</tr>
<tr>
<td>TC</td>
<td>Well as soon as they walk in, they are given their folders and when we open the folders we look at the previous day’s lesson, and there is usually an activity in there…and we’ll talk about the objective for that lesson.</td>
</tr>
<tr>
<td>TD</td>
<td>It depends. A lot of it has to do with discipline as well as classroom management, making sure they are on task.</td>
</tr>
<tr>
<td>TE</td>
<td>I have groups and so the groups kind of wrap around the center of the classroom. …I kind of did it because the kids are able to not only see me…they’re able to work with their peers and in their groups, because I believe in a lot of group work.</td>
</tr>
<tr>
<td>TF</td>
<td>When I’m teaching I make sure to praise kids, because confidence goes a long way. Once you bring down a child you’re never going to win. Its going to hurt them in more ways than you’ll ever know because I was hurt really bad. So, I know that.</td>
</tr>
<tr>
<td>TG</td>
<td>I used to try to talk over them and hope they were going to listen. Now I wait. The kids get annoyed, but it really helps because they realize that unless everyone is quiet, we can't proceed.</td>
</tr>
</tbody>
</table>

*Modeling learning from mistakes.* Five participants who discussed modeling learning from mistakes talked openly about their own weaknesses and how they used these to model for their students that they are simply human and they will make mistakes. They used this self-deprecation as a strategy to build relationships with students. Teacher A shared in his debrief conversation, “I wasn’t the strongest student
so I know how hard it was to get the A’s in middle school for me. I can relate to and I let them know that I didn’t always get the best grades in middle school too” (TA—Video Debrief). It is interesting to note that two of the participants, TE and TF, use the phrase, “I’m human,” when discussing their own weaknesses and how they model learning for their students. “Well I think having a more personal relationship with students is definitely important… every Monday we talk about what we did and the kids know that I’m human, that I’m this real person” (TE—Video Debrief). Teacher F said, “I’m learning along with them as well because it’s all a process. I’m human” (Semi-structured). It is interesting to note that this theme only surfaced through the semi-structured interviews and debrief conversations. What is also interesting to note is that the sub-theme modeling learning from mistakes did not surface as significant for any of the Kelly’s Repertory Grid participants, perhaps because the process dissects the lesson into discrete components whereas the other two tools encourage a more holistic perspective. In addition, in the video, the participants see themselves.

Seeing the good in all. The last sub-theme under high expectations is labeled seeing the good in all. Six of the seven participants discussed this theme in video debrief conversations or semi-structured interviews. TD and TE actually talked explicitly about their beliefs. TE discussed that her parents had influenced this belief. She also expanded on how this belief is transferred to her classroom environment. “My parents raised me to believe in everybody. Everybody has good somewhere; my classroom is very bright and colorful…I feel that that helps the students walk in and feel comfortable” (TE—Video Debrief). This belief had been formed before this
participant entered the classroom as her description does not reflect on her practice and experiences in the classroom. TD said, “The biggest thing is that I believe every kid has a right to learn every kid has the ability to learn and I tell the kids, and I believe it quite honestly” (Video Debrief). TC talked in her debrief about adjusting to her students needs and ties this into her beliefs about students, “I believe…my mantra has always been to teach to the most intelligent and then adjust for your kids who are strugglers” (TC—Video Debrief).

*Collaborative Experiences with Colleagues*

Reflection is generally a personal process and focuses on one’s own work. Yet one theme that emerged from the data was the notion of collaborating with colleagues. It is important to note that only the participants who participated in the collaborative interview process using Kelly’s Repertory Technique discussed this theme. Teacher B and Teacher C both discussed learning how to differentiate with their learners based on teaming and collaborating with teacher teams. TC described a grade level team she worked with for three years. “We had a team that developed those lessons together. We discussed how to reach to high kids and what we needed to do for the low kids” (TC—Video Debrief). Perhaps the conversations around collaboration were explored subconsciously as the participants were completing a collaborative reflective process. Alternatively, teacher collaboration and working in both interdisciplinary teams and in department teams is a central part of this schools restructuring efforts; therefore, as they shared their lesson, the teachers recognized they had not come to the work by themselves.
In summary, the aforementioned data provided insights into teacher beliefs about their teaching practices as revealed from reflective tools and how those beliefs are enacted in classroom instruction. The reflective tools helped illuminate the teachers’ thought processes surrounding their practices and even surfaced in some cases the beliefs behind the origins of their practices.

Life Experiences Influencing Teaching Practices

Now that the research question, *What are the teacher beliefs about teaching revealed through reflective tools?* has been addressed and explained, the next section of data displayed and discussed presents the answer to the research question, *What factors seem to shape those beliefs as brought out by reflective tools?* All seven participants discussed life experiences through their interviews and debrief conversations. Three themes emerged: family influences, positive educational experiences, and negative educational experiences. Below these data are displayed and discussed. In addition, issues of religion and death were surfaced, each by one participant. Although these cannot be regarded as themes, they are shared because they illustrate the power of certain life experiences that can affect classroom practices of teachers.

*Family*

Five participants discussed influences from their parents, siblings, or both. It is important to note that all of the participants mentioned these influences from a young age and talked about these family members’ influences growing up. These conversations all occurred as part of the video debrief reflection in response to the
third question, *Thinking about your belief systems as in our previous conversations, in what ways do you see your beliefs coming alive or being enacted in this video?* (in Appendix C and from probing questions by the researcher).

TA, TD, TE, and TG talked about their parents’ influences on shaping their beliefs and thinking. “I think a lot of my influences have to do with my mentors I've had in the past, starting with my parents because my dad's a professor, my mother a teacher and a writer. I was raised in that kind of environment” (TG—Video Debrief). TA also feels greatly influenced by his father, “Maybe it’s just the independence that I have from a young age. My dad wanted me to be on my own” (TA—Video Debrief). TC, a language arts and reading teacher, talks passionately about her sister’s disability and struggles throughout elementary school. “She struggled through elementary school with reading and my family didn’t know what to do…I saw her struggle, not enjoy reading, I really felt for her, deeply” (Video Debrief). The insights into Teacher C’s beliefs helped her learn more about where her decisions about instruction come from for her students and also gave the researcher an in-depth look at this participant’s constructs.

*Positive Educational Experiences*

All seven participants discussed positive educational experiences. TA, TC, TD and TE mentioned some positive experiences in the elementary years and in their youth. TC described her 5th grade teacher with much emotion, “When I was younger, I had a 5th grade teacher, Mr. Mechem, who read stories from Japan. He would go
beyond the textbook and for me that just opened up my world—that you could travel to
a different country through a book” (TC—Debrief Conversation).

“My teacher was very kind and I remember him very patiently letting me wait
to present my information… and he would compliment my ability based on what he
knew I knew” (TD—Video Debrief). TB, TF, and TG discussed experiences during
and immediately after student teaching. TB and TG discussed learning specific
strategies that they could take into their classrooms in any teaching experience. TF
discussed finding her niche in the middle school years after subbing. “I only liked
being around the little ones until I subbed middle school. When I subbed middle
school, I realized wow, this is for me!” (TD—Video Debrief). All participants
described these positive educational experiences during the video debrief
conversations.

Negative Educational Experiences

Surprisingly, most of the participants, in fact, six of seven discussed a negative
educational experience from elementary, middle, or high school. Teacher B did not
have any positive educational experiences in elementary school and specifically states,
“I’m trying to be everything that my teachers were not to me. So, everything that my
teachers were to me when I was in elementary school I’m trying not to be, and so I’m
trying to think out of the box” (TB—Video Debrief). Teacher E talked about a change
from elementary to middle school and how she felt that she did not relate to her
teachers any longer. “I was like a bad kid, I had this perception that you don’t care
about me and I don’t care about you…it was a big change in personal connections with teachers from Elementary to Middle School” (TE—Video Debrief).

**Impact of Life Changing Events**

Two other comments emerged from data on life experiences and may help explain some additional factors that seem to shape beliefs revealed through reflective tools. One participant mention the impact of religion in the semi-structured interview and another participant mentioned the impact of a death during the video debrief conversations.

**Religion.** Only one participant mentioned religion in a semi-structured conversation. TD explained how God guides her beliefs and influences some of her thinking related to her students. “Well, I am a Christian, I made a strong choice to follow Christ and that lets me show the students a real love, not fakeness, I want to be genuine, and that influences what I do” (TD—Semi-structured).

**Death.** Only one participant described an experience relating to death. In her middle school and high school years, TE lost many friends at a young age to accidents and suicides. These experiences have helped her build positive relationships with students. “I lost twelve friends to drunk driving, car accidents…I experienced a lot of trauma in my life…I think having a more personal relationship with students is definitely important, having kids talk to me about things”.

Based on the aforementioned data, it can be argued that reflecting on one’s life experiences that help form beliefs is necessary when working with students and colleagues from a wide variety of experiences and backgrounds. Being tolerant and
taking the time to understand more about others and one’s self are needed in every profession, but perhaps even more so in education where interactions between teachers and students is so critical to student success. In order to create successful academic opportunities for culturally and linguistically diverse students, teachers taking the time to understand the sources of their beliefs and how they shape their instructional practices may be the first step.

In summary, the data presented above responded to the three research questions:

1. How did the teachers engage with the three different reflective tools (Kelly’s Repertory Grid, semi-structured interviews and video-elicited reflection) and what can be learned about teachers’ beliefs and practices from the reflections?

2. What teacher beliefs about teaching are revealed through reflective tools?

3. What did these tools reveal about past experiences that may be influencing teacher practice?

The reflective tools helped teachers understand more about their classroom practices and instruction. This, in turn, encouraged new learning by the teacher as reflected in their comments about what they would change. While it was beyond the scope of this study to follow-up and determine if these teachers’ reflections led to actual changes in practice, the insights about their practice shared by these teachers indicated the potential for change. Because students have many learning modalities, styles and thought processes and knowledge about teaching are also developing and changing
through research. It is important that teachers continue to reflect and employ reflective practices in order to adapt instruction on a continuous basis. Researchers and instructional leaders learn from these reflective tools, as they have shown us what types of reflection may be more useful and in varying contexts. These are explored in more depth in the next chapter.
CHAPTER 5:
DISCUSSION

The final chapter provides a brief overview of the study, including a statement of the problem, a review of the methodology, and a summary of the results. Subsequent sections of the chapter discuss the findings presented in Chapter Four and the ways that different reflective tools facilitate the reflective process for teachers and instructional leaders. The study concludes with a presentation of conclusions and implications for leadership practice.

Statement of the Problem

As stated in Chapter One, thirty years of educational reform have left far too many students of color and whose families live below the poverty line underperforming in relationship to their White, Asian, and more affluent counterparts. Many administrators and teachers have enacted reforms on their own initiative such as Accelerated Schools or Success for All; others have implemented required district mandates in an effort to improve. Yet these best efforts often fall short. Missing from many of these reform efforts are processes that facilitate teachers exploring their beliefs and how they may be affecting their instructional practices. Many reforms, especially those centered on teacher-directed instruction, fail to create opportunities for conversations around beliefs and assumptions that inform instructional practices (Wahlstrom & Louis, 2008). The development of reflective structures and practices could facilitate needed discussions about teacher beliefs and their connection to practice, but they must be part of the initial reform design.
The overall purpose of this study was to explore three reflective tools that teachers and administrators might use to assist teachers to become more reflective about their classroom practices. These three tools included an adaptation of Kelly’s Repertory Grid, a semi-structured interview, and video-elicited reflection. This study sought to understand how teachers engaged with these reflective tools, what can be learned from teacher beliefs and the reflections, and how these tools may be useful to instructional leaders to stimulate improved instruction. In addition, this study might help us understand more about teacher beliefs and what experiences have shaped or molded these beliefs. These tools might also help facilitate the reflective process for both teachers and instructional leaders, thus stimulating the kinds of changes in instruction that would increase the opportunities for more students to reach proficiency or mastery.

Review of the Methodology

To address the purpose of this study, a phenomenological design was used. Phenomenology involves exploring in depth peoples’ experiences. In this case teaching experiences and beliefs are examined using three reflective tools to help teachers become more conscious of their teaching practices. This study involved an exploration of teachers’ sense-making in regard to their classroom environment and instruction.

Seven participants explored their experiences to help surface their instructional practices during what the participants considered a good lesson and also sought how their beliefs were formed. Three participants completed a collaborative interview
process—Kelly’s Repertory Grid technique. Four participated in semi-structured interviews. All participants shared a segment of a classroom lesson that they videotaped and completed a conversation with the researcher about this self-selected segment. All data were collected via audiotapes of interviews and reflective conversations between the research and participants, field notes, and reflective journals maintained by the researcher. The researcher transcribed all of the data. Themes and subthemes emerged from this iterative process involving reading, rereading, creating tables, and analyzing and synthesizing data in tables and organizing them into data sets.

Summary of Results

The three reflective tools produced varying types of reflections. Both Kelly’s Repertory Grid technique and the video debriefs put the participants more in charge of the process than did the semi-structured interviews. Because of the structure of the grid technique, participants were focused on their descriptions of best teaching. In contrast, story-telling and specific examples of a best lesson were elicited from the semi-structured interviews, but there was not the same level of dissection of the lesson as found with the grid technique. What is interesting to note is that the video-elicited reflections had participants talking about re-teaching and changing their instructional strategies, which did not surface with either the semi-structured interview or the grid technique. By seeing themselves in action, participants immediately thought of what they would want to do differently the next time.
Teachers’ Responses to the Tools

From informal conversations after using the reflective tools, the researcher concluded that, overall, participants engaged with the tools and seemed to enjoy the interactions with the researcher. As shown in Chapter Four, the semi-structured interview allowed the participants to tell their “teaching life” story in a more narrative format, which surfaced some of the influences on their teaching beliefs such as family, school, and teacher preparation experiences that the other tools did not surface to the same degree. The Kelly’s Repertory Grid represented a more formal process, took more time, and was more difficult for one of the three participants. Nevertheless, it surfaced important insights for participants about their daily teaching practices and allowed them to reflect on their teaching in a more abstract and objective manner when they were categorizing and labeling the component parts of the lesson. Finally, all participants participated in the video-elicited reflection. The fact that the participants remained in control throughout the process seemed to alleviate any fears that often arise from videotaping. The process provided an opportunity for participants to reflect on what they would do differently—a reflective component not surfaced by the other tools.

Teacher Beliefs Surfaced by the Tools

From the data, the researcher identified six major themes based on the participants’ reflections on their experiences and insights on teaching, including teacher practices, student engagement, higher-level thinking, new learning and new knowledge, high expectations, and collaborative experiences with colleagues. Most of
these themes have sub-themes. It is interesting to note that reading comprehension and checking for understanding, two subthemes of teacher practices category, have actually been site and district focus goals. Student engagement also has been a site goal for the past three years since technology has been infused with the use of student laptops. Although not an explicit goal of this study, these findings are significant in illustrating that these reflective tools could serve as a valuable process for understanding how well school reform initiatives become embedded in teacher day-to-day practices. Three other major themes—family, positive educational experiences, and negative educational experiences--emerged from participant discussions centered on life experiences. These themes illustrated how some of the participants’ beliefs were formed, including for two participants life-changing events such as death and religion.

Discussion of Results

The data that emerged from the three reflective tools—Kelly’s Repertory Grid, semi-structured interviews, and video debrief conversations—are discussed in relation to the types of reflections that these tools yielded. This study showed that the results and types of teacher reflections can vary depending on the type of reflective tool used. The results from the findings support current research that reflective tools can assist teachers in knowing and understanding their beliefs so they can make changes to instructional practices. This study also affirms that reflective tools can be used to help teachers and instructional leaders understand how beliefs may be influencing practice in anticipated and unanticipated ways.
**Reflective Tools**

All three reflective tools tested and explored in this study produced varying types of reflection, including (1) reflection-in and on-action, (2) deliberative reflection, and (3) personalistic reflection. Three of five types of reflection, identified by Valli (1997, p. 75) and presented in Chapter Two, were noted in this study. Technical reflection, matching one’s performance to external guidelines, critical reflection, and judging the goals and purposes to ethical criteria did not emerge in the data analysis. Since the three reflective tools were not used as an evaluative or comparative method in this study, technical and critical reflection did not arise. Each tool seemed to elicit more of one type of reflection than another. This is displayed in Table 5.1.

<table>
<thead>
<tr>
<th>Reflective Tool</th>
<th>Type</th>
<th>Content for Reflection</th>
<th>Quality of Reflection</th>
</tr>
</thead>
<tbody>
<tr>
<td>Semi-structured Interview</td>
<td>Personalistic reflection</td>
<td>One’s own personal growth and relationships with students</td>
<td>Listening to and trusting one’s own inner voice and the voices of others</td>
</tr>
<tr>
<td>Kelly’s Repertory Grid Technique</td>
<td>Deliberative reflection</td>
<td>A whole range of teaching concerns, including students, the curriculum, instructional strategies, the rules and organization of the classroom</td>
<td>Weighing competing viewpoints and research findings</td>
</tr>
<tr>
<td>Video Debrief Reflection</td>
<td>Reflection-in and on-action</td>
<td>One’s own personal teaching performance</td>
<td>Basing decisions on one’s own unique situation</td>
</tr>
</tbody>
</table>
Kelly’s Repertory Grid Technique. As discussed briefly in Chapter Four, one theme emerged from Kelly’s Repertory Grid--student expectations. Both TA and TB discussed student habits, classroom management, and routines. Related to the chart above, the grid technique allowed the participant to analyze his classroom practices by describing a best lesson. As the researcher took notes, the participant listed what happens first, next, and so forth. The researcher charted the ideas on note cards. This deliberate telling of the classroom events in sequence enabled the participant to discuss the organization of the classroom and the tools in place to help students learn and the teacher to manage a group of students. Also, this type of reflective tool allowed participants to focus on their classroom instruction step-by-step and slow down their thinking, making their reflections more deliberate and their comments more specific and concrete about what was actually done in the lesson. This type of deliberate reflection could be equated to the enduring understandings that McTighe and Wiggins (2005) explain, which can be transferred to new situations and tasks. For example, as discussed in Chapter Four, Teacher C identified a significant theme of reading comprehension. She was able to deliberately connect how her mentioning of specific strategies and describing these strategies were indeed related. Just as teachers must provide situations for students to check for understanding so must teachers monitor new learning, reflect on its implications, and engage in conversations with colleagues to analyze instructional practices (Fisher & Frey, 2007; Fullan, 2006; Tomlinson, 1999). This collaborative grid technique is one way for teachers to experience enduring understandings of themselves and their practices.
In the era of school and district reform initiatives, many teachers resort to conservative, teacher-centered patterns of teaching (Fullan & Hargreaves, 1992). One of the issues is the time that teachers need for reflecting on new instructional strategies and practices. Pink (1989) examined staff development projects for teachers and discovered a litany of problems, including too little time for teachers to develop new skills and strategies. This lack of time has been a consistent barrier in changing practices (Chrispeels & Gonzalez, 2006; Coburn, 2003). The importance of think time provided by Kelly’s Repertory Grid technique may be one type of reflective tool to combat this issue, especially if used in the context of staff development. Any teacher could be trained to use Kelly’s Grid technique on his or her own to reflect on any lesson. In addition, teachers could be shown how to use this tool to reflect on lessons collaboratively, especially if the teachers had developed a lesson together and were now debriefing the lesson.

When teachers have opportunities to slow down their thinking, students benefit (Rimm-Kaufman et al., 2006). This focus on learning enables teachers to engage in conversations with colleagues around instructional practices. The very essence of a Professional Learning Community is a group of learners who work interdependently to achieve common goals linked to the purpose of learning for all (Dufour et al., 2006). Pfeffer and Sutton (2000) discuss a disconnect between knowledge and action in organizations related to organizational management. Perhaps teachers who do not have the knowledge of where their decisions behind classroom instructional practices come from lack the knowledge of what next steps and actions need to take place for
the learners in their classrooms. A reflective tool such as Kelly’s Repertory Grid that engages teachers in taking the next critical steps to outline and dissect their instructional practices allows them to get to the knowing and how to make better instructional decisions for their learners. Throughout Kelly’s Grid, participants must analyze the relationships of the elements and constructs they described, and then draw meaning and significances from these. This process is indeed deliberate as participants are thinking about the instructional strategies and practices that they employ. This reflective tool relates to the portfolios kept by pre-service teachers in Brown’s (2002) study. Both reflective tools could help adults think more about their learning.

Since Kelly’s Repertory Grid was the most time consuming of the tools from the researcher perspective, requiring two meetings and some work to create the grid between meetings, there is a possibility that instructional leaders may be dissuaded from using this tool. However, a coach with the designated task of working with teachers could find this a tool well worth learning and using to stimulate reflection. It could be especially useful for coaches because in a non-threatening manner, it allows a teacher to dissect his or her lesson and begin to see patterns in how the classroom is managed, how the lesson flows, and how students and teacher interact. In addition, this tool could be used as an alternative evaluation process where instructional leaders could engage in the reflective process with the participants. In this study, the researcher assisted the participants in probing, identifying, and naming the significances on the grid. An instructional leader could use Kelly’s Grid to help and
prompt the teacher to reflect on some relationships of elements and constructs that the participant is not seeing. Finally as mentioned above, an instructional leader may want to help teachers learn the process as one that could be used individually or as part of self-evaluation portfolio or as a collaborative tool used by teachers in a grade level or department meeting.

_Semi-structured interviews_. The data from this reflective tool showed more narration than the other data sources as discussed in Chapter Four. This story-telling framework is consistent with Valli’s (1997) description of Personalistic Reflection as participants’ inner voices were heard through their narratives and teachers discussed relationships with students. TD said, “I think the students feel value and that they feel in a safe place and that they can talk to their teacher” (Semi-structured interview). TE shared about a teacher who was a positive influence for her and treated her as an individual, giving her opportunities to pass her exam orally since she was having difficulty putting it on paper. She said, “She took that extra step. That was a big part for me...oh she cares! So that definitely stuck with me especially being a teacher. That was one of my encouragements to becoming a teacher” (TE—Semi structured interview). Surfacing teacher beliefs, such as this, reiterate how teacher beliefs guide actions. These comments from semi-structured interviews as a reflective tool affirms Milman’s (2005) study on web-based portfolios, which showed that participants can use reflective tools to connect to personal beliefs. Teachers often operate, especially in the fast-paced school day, almost from instinct; yet teachers need opportunities to surface these “gut reactions” to know which ones may be supporting teaching and
which ones may get in the way. Reflective tools such as a semi-structured interview may help teachers delineate between reactions based on beliefs and reactions based on habits formed from experiences.

Teachers are influenced by life experiences. The semi-structured interview proved unique in giving participants an opportunity to surface ways that family, their own school experiences, and teacher preparation experiences influence teaching. This study reaffirms the existing body of literature that suggests that teachers’ personal backgrounds and experiences mold their thinking (Achinstein, Ogawa, & Speiglman, 2004; Chappell & Thompson, 1994; Lortie, 1975; Massey, 1979; Weick, 1995). This study reaffirms Massey’s (1979) and Berne’s (1981) notion that values and beliefs are formed throughout the Imprinting and Modeling stages.

The two outlier influences, death and religion, emerged during the semi-structured interview conversations. These significant emotional events are referred to in the literature as “gut-level” change that can result from an occurrence during our life (Massey, 1979). These types of events may help alter a programmed value from the Imprinting or Modeling years. Identifying and defining these significant emotional events can help teachers understand more about their beliefs and how they are affecting their classroom instructional practices. This reflective tool assists teachers in identifying those beliefs.

Based on findings from this study, the reflective semi-structured interview, especially a short version, could be used in two ways to support teacher and administrative learning and reflection. Teachers could interview each other at the
beginning of the year as a get-acquainted activity to build rapport and to gain insights into why they became teachers, what beliefs they hold about teaching, and what they feel are some of their strengths as teachers. Similarly, administrators could find it a valuable tool to help them become acquainted with any new teachers. Interviewing and listening to another is a powerful way to show care and concern. The data from the interview could be helpful to administrators in knowing how best to support a new teacher in aligning beliefs with the school’s focus and direction.

*Video-elicited reflection.* The video debrief reflection data elicited valuable conversation around participants’ thinking about changing something they do in the classroom after having seen themselves in action. Participants were able to reflect-in-and-on their practice as teachers had already self-selected a section they wanted to share (Valli, 1997). It is important to note that participants had already begun reflection from the beginning of the process and before going into the debrief conversation. While watching the video with the researcher, the participants reflected on their teaching styles and talked about changes that they would make. This is discussed in Chapter Four in detail. This reflection on practice is described by Kottkamp (2009) as “the most complete means available for capturing events for later reflection-on-action” (p. 190). Since the participant has the primary responsibility for organizing the videotaping and selecting the segment to share, this tool proved a non-threatening way to encourage powerful reflection in and on teacher classroom practices. Videos and reflection on the video are being used regularly as part of teacher pre-service training (Sewall, 2007) and are required as part of the portfolio
submitted for certification in California. Administrators could capitalize on an increasing use of videos by incorporating it as part of their evaluation practice with teachers.

It is important to note that each of the reflective tools encouraged reflective thought. It is difficult to measure and compare the level of reflective thinking because each individual responds to tools in different ways. From the emerging themes and patterns of the data, it is important to note that these reflective tools ended up providing more of one type of reflective thought than did others. This is displayed in Table 5.1. Below, the researcher discusses how and to what extent these three reflective tools put the participant in charge of the reflective process and how these data can inform instructional leaders and school principals.

**Participant Responses to Reflective Tools**

For purposes of this study, all three reflective tools approached the reflective process from an appreciative inquiry stance by asking participants to share about their best teaching practices and asking participants to describe best lessons (Catsambas & Preskill, 2006; Watkins & Cooperrider, 2000). This strengths-based perspective encouraged participants to share what they wanted to share and to share their successes (Buckingham and Clifton, 2001). Two of the three reflective tools placed the participant in charge and in control of the reflective process. Kelly’s Repertory Grid technique enabled the participant to actually maintain control of the coding process, with the researcher supporting the participant more in the thought processes as relationships were explored and significances were extrapolated. The video debrief
conversations also allowed the participant to stay in control as the teacher decided which lesson to tape, self-selected a segment of the video to share, and then discussed this segment with the researcher. Because these reflective tools left the participant primarily in charge of the process, participants in this study evidenced control and comfort in sharing even negative information (i.e., “oh I would change that” in the video debrief). These two tools could become a powerful means of teacher/administrative reflection to engage in conversations around practice (Bowers and Doerr, 2003; Hewitt et al., 2003; Hewson et al., 1989; Sewall, 2007; Stallings, 1989). As Sewall (2007) found with pre-service teachers, video appears to be a valuable tool for molding reflective practitioners in ways that are supportive and yet encourage teachers to change practices when needed. Similarly, Hewson et al. (1989) used videotapes to assist medical practitioners to reflect on their teaching to residents. This study showed improved practice by the medical practitioners. Similarly, video-elicited reflections are a type of portfolio that has been used as a professional development tool to assist teachers and instructional leaders in the reflective process (Brown, 2002; MaKinster et al., 2006; Milman, 2002, 2005; Norton-Meier, 2003). A significant finding from this study is that even when focused on best lessons or best practices, teachers identified areas for growth and improvement, confirming Preskill and Catsambas (2006) and Watkins and Cooperrider (2000) findings of the power of appreciative inquiry to bring about change.
Relating Reflective Tools to Evaluation Portfolios

Innovative reflective structures and tools beyond traditional methods of journaling are more widely used by practitioners given the advancement of technology. This study’s use of video-elicited debrief conversations affirms Brown’s (2002) findings that these tools assist pre-service teachers in understanding one’s constructs and showed how adults can think more about their new learning. Kelly’s Repertory Grid enabled participants to describe their constructs as related to their classroom and to probe for significances based on these experiences. Semi-structured interviews enabled participants to do more telling and sharing of life experiences that may affect the way they think about certain practices in the classroom. All three reflective tools enabled participants to think more about their own experiences and how those related to their classroom instructional practices.

This study also showed that with any of the three reflective tools, participants could make connections to their beliefs and could understand more about themselves. Milman’s (2005) study of web-based digital teaching portfolios created a collaborative process between students and teacher and showed that students could connect to their values and beliefs. Efolios, an electronic version of a portfolio, including an online area to add artifacts, documents, and reflections, gave pre-service teachers some flexibility in recognizing that individually they construct knowledge and meaning in their own way (Norton-Meier, 2003). Kelly’s Grid Technique allowed teachers flexibility, creativity, and control as teachers named and described their own classroom constructs and probed for meaning behind these. Kelly’s Grid appeared to
be a tool that grade level or department teams could use to gain insights into a jointly
developed lesson.

Reflective Tools as Supports for Teachers and Instructional Leaders

Joyce and Showers (1995) point out that for professional development to be
effective, a cycle of presentation and modeling with theory, opportunities for practice,
coaching with feedback, and reflection are critical to improving teacher practice.
Since their early work, there have been many improvements in the way professional
development is now provided to teachers, and coaching has become an important
component of school reform (1988, 1989). However, missing in many professional
development efforts are time for reflection and tools that administrators and teacher
colleagues can use to support reflection in and on practice. This study has
experimented with three different tools to stimulate reflection; it has shown that each
taps different elements of the reflective process and can be used to support teacher
reflection in a non-threatening way.

Supporting teachers with professional development that appreciates unique
personalities and allows for teacher choice is much needed. In addition to choice,
instructional leaders must find ways to create professional development that
encourages new thinking (Kegan & Lahey, 2001; Kottcamp & Osterman, 1993).
The concept of “accepting” and “elevating” beliefs is presented by Joyce and Showers
(2002) but is applied to the notion of instructional leaders accepting and elevating
beliefs they have around students and how students can perform. These terms were
originally used in a study of high and low performing rural districts with similar
students and similar funding (Rosenholtz, 1989). In Rosenholtz’s study, the “Moving” districts operated with the value and belief that students were to be elevated to their potential. The “Stuck” districts viewed students as having a fixed potential. In this study, comments from all constituents, parents, teachers, staff, board members, and superintendents were recorded. There was a substantial amount of negative comments made in the “Stuck” districts and schools. In this study, beliefs were also inferred by words. Taking this notion and applying it now to teachers, the need for instructional leaders to “elevate” their teachers’ awareness about beliefs and instruction is much needed. Through this lens, teachers are viewed as flexible and having potential to improve and succeed. In addition to these reflective tools encouraging elevating thoughts for instructional leaders and teachers, teachers begin thinking elevated thoughts about students. This is evidenced by the emerging theme, seeing the good in all, presented in Chapter Four.

Throughout this study, beliefs have been inferred by teacher words and actions, as defined by Pajares (1992). By using an appreciative approach as a component of these three reflective tools, teachers’ words become more positive and teacher participants’ language moved to a language of commitment and personal responsibility (Kegan & Lahey, 2001). The premise stems from the notion that schools are language communities. Instructional leaders can influence the nature of language, shaping and forming the existing language rules. Kegan and Lahey’s (2001) step-by-step process begins to take instructional leaders though a reflective process and tasks that help them internalize these language changes at their schools. All three
reflective tools can help instructional leaders move teachers from the language of complaint to the language of commitment and from the language of blame to the language of personal responsibility (2001). As participants described their best classrooms and best lessons, they showed a commitment to their students. Participants reflected in the video debrief conversations what they would do differently and took responsibility for their students’ learning. This was done in a non-defensive manner and with a positive outlook, eliminating the concept of the instructional leader evaluating the participant, based on the fact that the participant was in control as she shared the lesson she chose.

Reflective Practice for Educators Improving Schools

Critical to creating improving schools is creating recultured reflective communities (Fullan, 2000). In order to elevate a school to the values that students have more potential and to co-create the vision that schools are reflective communities, instructional leaders and teachers must collaborate (Joyce & Showers, 2002). In order for instructional leaders to expect teachers to change, instructional leaders must also transform their thinking about change (Kegan & Lahey, 2001; Rosenholtz, 1989). Change is likely to occur with strong professional development programs (Bloom et al., 1998; Cheng & Cheung, 2005). Collaboration between teachers and instructional leaders can become a catalyst for change (Bloom et al., 1998; Coburn, 2001; Louis & Marks, 1998; Supovitz, 2002).

Professional development incorporating collaboration has shown results in changing instructional practices (Achinstein, 2002; Bloom et al., 1998; Johnson, 2006;
Windshitl & Sahl, 2002). Kelly’s Repertory Grid and the video-elicited reflection enabled both participants and researcher to collaboratively explore and discuss the lessons the participant shared. These reflective practices when employed as professional development could enhance instructional leaders’ and teachers’ thinking about how to support teachers and their changing practice in the classroom.

Kottcamp and Osterman (1993) discuss the construct that professional development and reflective practices are often viewed as separate and not unified. Professional development need not remain traditional with a typical presenter to a large group and partial return to the professional development later. Reflective activities need not remain traditional in the sense of individual journaling. Instead, reflective tools can serve as a caveat to changing this notion of professional development remaining in control of the administration. Reflective tools like Kelly’s Grid technique and video elicitation put the participant in control of the process, creating ownership in the product. The results, as evidenced from this study, is an understanding of beliefs, where they come from, and what next steps could be taken in the classroom as evidenced by participants’ words around changes they would now make in their lessons.

Implications for Practice

In this study, the three reflective tools—Kelly’s Repertory Grid technique, semi-structured interviews, and video elicited debrief conversations--have shown instructional leaders like myself how these tools can be effective in guiding teachers in understanding their beliefs. Linked to this understanding, it is very important for
instructional leaders to understand teachers’ beliefs in order to help them move to the next level in their classroom instruction. By supporting teacher reflective practices, instructional leaders validate teachers’ personal experiences. The connection formed between teachers and instructional leaders is positive, and positive professional relationships are established. As an instructional leader at this school, the conversations I had with participants enabled me to understand more about who these participants actually were as they shared some sensitive personal experiences around positive and negative educational experiences and family. In addition, when sharing their best classroom practices and the decisions behind these, I could understand more about their thinking processes. This information has helped inform decisions regarding student placement, professional development, and trainings.

*How Reflective Tools Help Create Co-understanding*

As an instructional leader it is important that I understand teachers’ perspectives and experiences, especially when co-creating a culture and vision of a strengths-based organization. As a researcher and instructional leader at this school, based on what experiences these participants shared with me, I am able to make decisions about student placements and find the most appropriate and best person for various committees. In addition, when faced with negative pressures from colleagues, I was able to give information to a counselor who helped guide one participant to recall her values and make a difficult decision that differed from the group’s. Understanding factors and where beliefs come from is necessary to create situations of change in order to provide the best experiences for students.
Encouraging and supporting teachers to reflect regularly in collaborative structures enabled both the participants and me to understand each other more. As we conversed in all three reflective tools, participants were able to understand my thinking based on the questions I was asking. This co-understanding could be related to co-creating ideas and co-creating the vision of an organization (Fullan, 2006). As strong instructional leaders include all constituents and value voices in the co-creation of a school’s vision, a common basis for understanding of values and beliefs would be beneficial. Some of the questions in the semi-structured interviews could be used in a variety of contexts, including a conversational format style meeting where staff could converse in groups. This basic understanding allows instructional leaders to know more about her staff’s strengths, experiences, and challenges.

*How Reflective Tools Can Be Used to Guide Administrators to Support Teacher Reflective Practices*

Instructional leaders could also create professional development incorporating reflective tools like Kelly’s Repertory Grid and video-elicited reflection. Both tools support collaboration. Professional Learning Communities could be instructed on how to use these tools in partners or small group settings. Stallings (1989) showed that staff development connected to change in teacher practices in turn increased student achievement. This study supports Stallings’s findings that teachers are more likely to change their behaviors when through analysis they become aware of their own profiles and constructs. In addition, this study supports the findings that teachers make more changes when they observe in classrooms and analyze their own data. Kelly’s
Repertory Grid, although time consuming, allows for teachers to analyze and dissect their own data, extrapolating their own significances. Video-elicited reflection also allows for teachers to dissect their lessons and discuss what changes they would like to make to their instructional practices. Stallings (1989) also found that teachers were more likely to make changes with a variety of approaches like modeling, simulation, and video critiquing. This finding encourages instructional leaders to teach teachers to use and incorporate a variety of reflective tools in order to create more change that can provide improved results for students.

As instructional leaders structure professional development opportunities for teachers to use reflective tools, teaching teachers to reflect with collaborative structures may help foster a culture of reflection. As Stallings (1989) found, teachers who collaborate report their successes and failings more as a group. Also, teachers learn to set goals for professional growth. Stallings (1989) found that under these conditions, teachers were more likely to use new ideas. This idea of learning by doing, so central to Professional Learning Communities, is derived from Stallings’s study (DuFour et al., 2006).

New Learnings to Help Administrators

In order to help instructional leaders develop trainings for teachers on reflective practices around beliefs, some ideas learned from this study should be kept in mind. When talking about beliefs and values, many personal stories and experiences surface. It is important to make teachers feel comfortable and provide an environment and structures that are non-threatening. It is important to put teachers in
control of the discussion, what is shared, and the process allows for them to share what they want to share. Two of the reflective tools were structured in this study to make teachers feel more comfortable. Phrasing questions and discussions from a strengths-based perspective allows teachers to lower their affective filters and share their classroom lessons. This type of sharing shows teachers that they are valued. In a restructured school, where improvement is stressed, this is important as teachers may feel like the best they are doing is not enough for struggling students. From an appreciative perspective, instructional leaders can make teachers feel important, valued, and needed, thus opening them up to a willingness to look at their own practice and instruction. When reflecting on changing practices, as evidenced in the video-debrief reflections, a shift in student learning could take place.

Instructional leaders could build reflective tools into evaluation processes. These tools, when included in the evaluation process could help teachers and administrators further their understanding about instruction and practice and could assist teachers in changing their practices. It is important for instructional leaders to build a repertoire of instructional strategies in order to use them in varying contexts. These reflective tools can be used to show a sense of caring and form opportunities to learn more about staff’s beliefs. Instructional leaders will need to create structures and processes to facilitate reflection between coaches and teachers and among teachers.
Areas for Further Research

This study on three reflective tools supports the corner-stones of Stallings’s (1989) model: learning by doing, linking prior knowledge derived from experiences, and learning in a supportive context where problems and solutions can be shared. The data derived from this study’s use of three reflective tools: Kelly’s Repertory Grid technique, semi-structured interviews, and video-elicited debrief conversations support pre-existing findings that teachers are likely to begin changing their behaviors. What is missing from this study is an extension and post-reflection process to determine if any of these reflective processes later altered practices. It would be interesting, for example, to discover to what extent re-teaching occurred.

Based on informal conversations with teachers after the video-elicited reflections and one of the other reflective tools, teachers talked specifically about how they might change some of their student group work structures, their teacher talk tones and pace, and some environmental and management techniques. These informal conversations and this study’s findings suggest that future studies that use reflective tools need to more systematically collect information about how practices have changed. One way to record these data would be for teachers to complete another video-elicited reflection, specifically targeting the changes that they made based on their reflections. Although teachers’ thinking may have altered, the action of the change, recorded in the video would provide evidence for the real change.

One area of future research, which would complement this study, would be to explore how these three reflective tools could be used individually. Video-elicited
debrief reflections could be completed by teachers and monitored by teachers without an administrator present. The adaptation of Kelly’s Repertory grid technique could also become a personal reflective tool for practitioners, given the appropriate training. The semi-structured questions could be used in a journaling context. It would be interesting to see the depth of the reflective processes if the instructional leader were absent.

Another area of future research incorporating these three reflective tools is incorporating more technology into the reflective practices. For example, a software edition of the grid technique would enable teachers to work individually, post their results, and then collaborative discuss significances in an online blogging context. This collaboration via internet could be extended to numerous professionals in numerous locations. Technology added to video-elicited reflections could increase collaboration for colleagues. For example, an extension of this study would be for colleagues to share their videos of themselves teaching and their analyses in order to think more about effective instructional processes. This could be completed through a webinar. In terms of incorporating technological aspects, the possibilities are endless.

Yet another area of future research needed is training educational leaders to effectively work with teachers on collaborative reflective practices. More research behind reflective tools as staff development materials and processes is needed. In addition, data that supports a discussion of teacher beliefs and revisiting these beliefs before and during reform initiatives are needed. Insights from future studies like
these would help support the effectiveness of reform initiatives as measured by student achievement and changing instructional practices.
APPENDICES

Appendix A

Collaborative Interview Protocol

Adaptation of Kelly’s Repertory Grid Technique


**This is a Two Part Interview Process:**

The Objectives are:

1. To complete the grid

2. To probe for the beliefs and principles which give the best voice to the factors

**Part One (Exploring Significances of Classroom Practice)**

The Principal Investigator will say all italicized words. The parentheses represent the PI’s actions.

A.

1. *Please give me some brief statements of what I would see in your class next week. This should represent your best teaching. Start from the beginning of your lesson and be specific.*

(Write and number these on cards in the order given (Elements).)

2. *Now group these cards in any way and explain why you composed each group as it is.*
(Write down phrases and statements used as the interviewee describes the composition of the groups. (Constructs))

(PI takes the elements and constructs and puts them on an Excel document that same day, creating a grid with an x and y axis.)

The following day, the PI and the participant meet with the grid completed.

B.

3. Let’s look at the grid that you have created. The task now is to code the relation of the elements and constructs. Use the pencil to code. Use 1 for “Definitely not associated”, 2 for “Neutral”, or 3 for "Definitely Associated”.

Now that you are finished, how are these related? Do you notice any patterns, relationships or absence of relationships? You can use the highlighter to help you.

Part Two (Probing for Beliefs and Principles):

This task is now to explore what might lie beneath the groupings (factors).

Let’s work together to probe for meanings, relationships, and significances.

Let’s try to find about five significances.

(Together the participant and researcher analyze the grid.)

Possible Probing Questions:

--What themes do you see emerge based on the associations of the elements and constructs?

--Can you explain that more…?
--How did that come about…?

--What can you attribute to your formal educational experiences?

--What can you attribute to your informal experiences?
Sample of Teacher A’s Kelly’s Repertory Grid Technique Coded

| 1. Ss come in, journals on desk | 3 | 3 | 3 | 3 | 3 | 3 | 3 | 3 | 3 | 3 | 3 |
| 2. Topic on board | 3 | 3 | 3 | 3 | 3 | 3 | 3 | 3 | 1 | 3 | 3 | 3 | 2 |
| 3. Don’t waste time | 1 | 3 | 3 | 3 | 1 | 1 | 1 | 1 | 3 | 1 | 3 | 3 | 3 | 2 |
| 4. Walking by | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 3 | 1 | 3 | 3 | 3 | 1 |
| 5. Monitor and stamp student work | 1 | 3 | 1 | 1 | 1 | 1 | 1 | 1 | 3 | 1 | 3 | 3 | 3 | 1 |
| 6. Quick Transitions | 2 | 3 | 3 | 3 | 1 | 1 | 1 | 1 | 1 | 3 | 3 | 3 | 3 | 1 |
| 7. Some start other activities | 2 | 3 | 3 | 3 | 1 | 3 | 3 | 3 | 1 | 1 | 3 | 3 | 3 | 3 |
| 8. Spelling activities | 3 | 1 | 3 | 3 | 1 | 3 | 3 | 3 | 3 | 1 | 3 | 2 | 1 | 3 |
| 9. Pre-reading strategies | 3 | 1 | 3 | 3 | 3 | 3 | 3 | 3 | 3 | 3 | 3 | 3 | 1 | 3 |
| 10. Ss making connections | 3 | 1 | 3 | 3 | 3 | 3 | 3 | 3 | 3 | 2 | 3 | 3 | 1 | 3 |
| 11. Ss relating to stories | 3 | 1 | 3 | 3 | 3 | 3 | 3 | 3 | 3 | 3 | 2 | 3 | 3 | 1 |
| 12. Reading groups, 1/2 SRA, 1/2P | 3 | 1 | 3 | 3 | 1 | 3 | 3 | 3 | 1 | 1 | 3 | 3 | 1 | 3 |
| 13. Switch groups | 1 | 3 | 3 | 3 | 1 | 1 | 1 | 1 | 3 | 1 | 3 | 2 | 3 | 3 |
| 14. Student presentations | 3 | 1 | 3 | 3 | 1 | 3 | 3 | 3 | 1 | 1 | 3 | 3 | 1 | 1 |
| 15. Outline/story | 3 | 3 | 3 | 3 | 1 | 3 | 3 | 3 | 1 | 1 | 3 | 3 | 2 | 3 |
| 16. Checklist for teacher | 1 | 3 | 1 | 3 | 1 | 1 | 1 | 1 | 3 | 1 | 1 | 3 | 3 | 1 |
| 17. Draft, paper | 3 | 3 | 3 | 3 | 1 | 3 | 3 | 3 | 1 | 1 | 3 | 3 | 2 | 3 |
| 18. Draft, computer | 3 | 3 | 3 | 3 | 1 | 3 | 3 | 3 | 1 | 1 | 3 | 3 | 2 | 3 |
| 19. Checklist for students | 2 | 3 | 3 | 3 | 1 | 3 | 3 | 3 | 3 | 1 | 3 | 2 | 3 | 3 |
Sample of Teacher B’s Kelly’s Repertory Grid Technique Coded

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<td>b. Captain of group, agenda</td>
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<td>c. Captain passes out folders</td>
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<td>3. Ask Ss for Questions</td>
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<td>4. Make their experiences</td>
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<td>8. Ask Kids if have any Questions</td>
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Appendix B

Interview Protocol

Semi-structured Interview

1. Describe a classroom lesson that would represent your best teaching.
   a. What were you doing as the teacher?
   b. What were the students doing?
   c. What were the activities or resources you used that made it such a good lesson?
   d. What were the outcomes of the lesson?

2. In teaching, as in many other careers, how we approach our work is influenced by our beliefs. Can you tell me how your beliefs about teaching, the classroom organization, about students may influence planning and instruction in your classroom? How do you see those beliefs enacted in the classroom?

3. Think back on your childhood experiences. Can you think of any experiences that you bring to your teaching today based on your experiences?

4. Think back on your school childhood experiences. Can you think of any experiences that you bring to your teaching today based on these formal school experiences?
5. Think back on your experiences in your teacher preparation program. Can you think of any experiences that you bring to your teaching today based on your experiences in that teacher preparation program?

6. Think about your experiences in the actual classroom with your students. Can you think of any defining moments that occurred inside of the classroom that make you teach the way you do?

7. Think back about any pivotal life experiences you may have had. Can you think of any experiences that you bring to your teaching today based on any of these experiences?
Appendix C

Debrief Conversation with the Teacher’s Video

1. So is there anything you’d like to tell me about this lesson before we get started?

2. Are there any thoughts, observations or comments that might come to mind as you see yourself teaching?

3. Thinking about your beliefs as in our previous conversations, in what ways do you see your beliefs coming alive or being enacted in this video?
Appendix D

Consent Forms

UNIVERSITY OF CALIFORNIA-SAN DIEGO
CONSENT TO ACT AS A RESEARCH SUBJECT

Vanessa Karwan, graduate student and Ed.D. Candidate, is conducting a research study on reflective tools for teachers and the role of the instructional leader in the reflective process. You have been asked to take part because you are a regular classroom teacher that Ms. Karwan is not evaluating through formal observations or alternative evaluation projects. There will be approximately eight participants in the study. The purpose of this study is to provide more insights on how teacher belief systems are transferred to classroom planning and instruction. This study will explore reflective tools, including a collaborative interview process and video reflection in order to help teachers examine their beliefs in classroom practice. This study aims to identify and understand major sources of teacher beliefs that influence classroom practice.

If you agree to be in this study, you will be asked to do the following:

1. Participate in either a semi-structured interview or collaborative interview process (Kelly’s Grid technique). The semi-structured interview will take approximately 30-45 minutes and can be completed in one sitting. The collaborative interview process will take approximately 60-90 minutes and can be completed in two sittings.

2. Videotape yourself teaching a lesson of your choice that you feel confident about in any of your block classes for approximately 30-45 minutes.
3. Participate in a debrief conversation of a segment of your choosing of your video. We will watch the segment that you choose together. Segments should be at least eight minutes long. This may take approximately 20-45 minutes.

All of these can be done within the regular school day with no additional time for you outside of your regular contract hours. It is estimated that your participation could take anywhere from two to three weeks depending on the investigator’s schedule and your schedule.

Participation in this study may involve some added risks or discomforts, yet risks are limited. These include:

1. There exists a potential for the loss of confidentiality because all teachers participating are from the same school site. All necessary precautions will be taken to protect participant teachers, students, school, and district confidentiality. In the write-up of the data analysis, pseudonyms for the school site, district, and participants will be created in order to protect confidentiality.

Due to audiotapes and videotapes, there exists a potential breach of confidentiality. Original interview tapes (audio) will be stored in a locked file cabinet with assigned identification numbers, protecting the participants from being identified. Participants will be given a number code so that they are not readily identifiable by name. The only person who will have access to the raw data will be the researcher. Audiotapes will be destroyed four years after the study is complete. All data will be stored in secure locations. Videotapes will
remain the sole property of the teacher participants. The audiotapes transcribed from these debrief conversations will be destroyed four years after the study.

2. There is a potential personal and social risk involved. Participants may feel uncomfortable talking about their personal experiences in the classroom, in teacher preparation programs and their own personal childhood experiences. Participants may also experience personal discomfort seeing their teaching in action. This risk, however, is slight. Teachers share what they want to share. It is anticipated that the benefits of this study and the participation in the reflective processes will far exceed the risks.

All teachers interviewed for this study will sign a consent form and may voluntarily stop the interview at any time and may withdraw permission to be taped at any point. All teachers videotaped will also sign a consent form and may voluntarily stop the video recordings at any time and may withdraw permission to be videotaped at any point. There will be no compensation given for participation in this study. All participation is voluntary.

There may or may not be any direct benefit to you from these procedures. Participants in this study can benefit from the personal reflection processes and could possibly understand more about their own personal belief systems and how these are transferred to their classroom instruction. This could potentially affect student achievement as teachers become more reflective about their practice in
the classroom by reflecting on their decisions in the classroom. This study could also make a unique contribution to the existing body of literature on reflective processes as a means towards transforming teacher belief systems. Additionally, this study could benefit the Principal Investigator as she aims to understand more the role of the instructional leader in the reflective process.

Vanessa Karwan has explained this study to you and answered your questions. If you have other questions or research-related problems, you may reach her advisor, Dr. Janet Chrispeels, at (858) 822-4253 and jchrispeels@ucsd.edu. You may call the Human Research Protections Program at (858) 455-5050 for more information about this, to inquire about your rights as a research subject, or to report research-related problems.

Participation in this research is voluntary. You may refuse to participate or withdraw at any time. Research records will be kept confidential to the extent provided by law.

You agree to participate.

_______________________   _______________________   _______________
Subject's signature        Witness                Date
UNIVERSITY OF CALIFORNIA, SAN DIEGO

AUDIOTAPE RECORDING RELEASE CONSENT FORM

As part of this project, an audiotape recording will be made of you during your participation in this research project. Please indicate below the uses of these audiotape recordings to which you are willing to consent. This is completely voluntary and up to you. In any use of the audiotapes, your name will not be identified. You may request to stop the taping at any time or to erase any portion of your taped recording. These tapes will be destroyed after four years.

1. The audiotapes can be studied by the researcher for use in the research project.

   ____Initial

2. The data from the audiotapes can be used for education publications.

   ____Initial

3. The data from the audiotapes will remain the sole property of the researcher.

   ____Initial

You have the right to request that the tape be stopped or erased during the recording.

You have read the above description and give your consent for the use of audiotapes as indicated above.

Signature                      Date                      Witness                     Date
UNIVERSITY OF CALIFORNIA, SAN DIEGO

Video Recording Release Consent Form

As part of this project, a video recording will be made of you during your participation in this research project. Please indicate below the uses of these video recordings to which you are willing to consent. This is completely voluntary and up to you. In any use of the video, your name will not be identified. You may request to stop the videotaping at any time or to erase any portion of your taped recording.

1. The videotapes can be studied by the researcher for use in the research project.

   ___ Initial

2. The data from the videotapes can be used for education publications.

   ___ Initial

3. The data from the videotapes will remain the sole property of the researcher. The videotape itself will remain the property of the participant.

   ___ Initial

You have the right to request that the video be stopped or erased during the recording.

You have read the above description and give your consent for the use of videotapes as indicated above.

_________________________________________  ______________________________
Signature               Date               Witness               Date
Video Release Consent Form for Minors

Student Name ____________________________

Release of Image and Voice

I hereby give my permission, as the Parent/Legal Guardian of the participating Student named above, to be videotaped for Vanessa Karwan’s dissertation research study. For this study, your child’s classroom teacher will be videotaping a regular classroom lesson. Ms. Karwan will not be in the room when the videotaping is done. The teacher and Ms. Karwan will later watch the video to learn how to improve instructional practices.

It is possible that your son/daughter’s image and/or voice may be on the videotape. The videotapes will be solely used for the purpose of the teacher analyzing her teaching.

The videotape will solely be looked at by the teacher and the researcher and is not for any public release.

I hereby give my consent for the tapes to be used as described above.

Parent/Legal Guardian (please print name)

__________________________________________

Parent/Legal Guardian Signature:
Address:
_________________________________________________________________

Phone: _____________________________ Cell __________________________

Dated: _____________________

Student (please print name)
___________________________________
___________________________________

Student Signature
_________________________________________________________________

Vanessa Karwan has explained this study to you and answered your questions. If you have additional questions or need to report research related problems you may contact me at (760) 432-2452. You may contact my advisor, Dr. Janet Chrispeels at (858) 822-4253 and jchrispeels@ucsd.edu. You may also call the Human Research Protections Program at (858) 455-5050 to inquire about your rights as a research subject or to report research related problems.
REFERENCES


Tomlinson, C.A. *The differentiated classroom: responding to the needs of all learners.* Alexandria, VA: Association for Supervision and Curriculum Development.


*Action in Teacher Education, 18*(1), 59-70.