CREATING AND RECREATING THEORY, PRAXIS, AND PROFESSIONAL DEVELOPMENT

by

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SIGNED: Kathryn J. Chavez
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DEDICATION

To Mario with love
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ABSTRACT

This study investigated two questions: a) What is the relationship between reflection and professional development? and b) What is the role of reflection in teachers’ instructional decision-making? Teachers are often conflicted by competing theories (e.g. behaviorist vs. constructivist) and principles (progressives vs. essentialists) at both national and state levels. Other sources of conflict teachers encounter stem from standards-based teaching, student assessments and teacher evaluations. For over eighty years educational theorists (e.g., Dewey, 1933; Fenstermacher, 1994; Schön, 1983) have suggested that reflection is an important key for resolving conflict and improving curriculum and instruction. Yet, top-down professional development models currently prevail rather than creative, individualized models that are designed to encourage reflective thinking and support teacher growth.

Research has suggested that although reflection is necessary, reflective thinking can be challenging for teachers. For example, the Reading Instruction Study (RIS) (Richardson & Anders, 1994), which this study is patterned after, found that teachers who examine and link theory to their practice were more likely to change when their beliefs were challenged. In addition, other researchers (e.g., Wildman & Niles; 1987; Wlodarsky & Walters, 2006; Woolley & Woolley, 1999) have suggested that there are differences in reflection among more experienced teachers versus novice teachers. This study considers differences in reflective thinking.

This instrumental case study (Stake, 1995) examined the reflective thinking of four teachers (two 3rd grade and two 6th grade) using practical argument (Fenstermacher, 1994) as a tool for analyzing their practices. Belief statements served to bridge theory
and practice encouraging teachers to be more coherent in their classroom decision-making and instructional practices. The professional development sessions offered throughout this process provided opportunities for teachers to reflect.

Results revealed that participants’ reflected in and on practice in different ways that seemed to bring about a change. Not only did articulating beliefs provide opportunities for teachers to examine and link theory to practice, practical arguments provided a means for examining inconsistencies between beliefs and practice, differences in reflective language, and the dimensions of reflective thinking used by teachers with varying degrees of experience.

Findings further suggest that when challenged, beliefs change. The language revealed in participants’ reflections varied between every day and academic depending upon their dimension of reflective thinking. Language mattered. Not only was movement between personal and public theories impeded by a lack of academic language, movement throughout the five dimensions of reflective (Griffiths & Tann, 1992) thinking was likewise hindered by a lack of academic language.

Implications are provided for teacher education, professional development and further research. Conclusions call for educators and policy makers to recognize the complexities of teaching, the importance of reflection in coping with conflict, and the need for change in prevailing professional development models.
CHAPTER 1. INTRODUCTION: UNTANGLING THE CONFLICT

“Everyday we (teachers) are faced with misunderstandings and misconceptions (of our students). It’s like you are at war with misunderstandings and with what students have. Then it is hard to figure out how can I overcome all of this because everyone is different; and how can I overcome all of this so that everyone reaches that goal?”

-- Autumn, 6th grade math teacher

The purpose of this investigation is to study teacher reflection. My experience with middle school teachers, such as Autumn above, reveals that teachers are often in conflict. For at least 80 years educational theorists (e.g., Dewey, 1933; Fenstermacher, 1994; Schön, 1983) have suggested that reflection is an important key for resolving conflict and improving curriculum and instruction. To investigate teacher reflection, I took advantage of an opportunity to provide a year long professional development project with middle and elementary school teachers with an eye toward addressing two questions: What is the role of reflection in teachers’ instructional decision making? What is the relationship between reflection and professional development?

In the quote above, Autumn provides an example of a conflict she senses with her students: the misunderstandings and misconceptions her students bring to her classroom. Autumn, a sixth grade math teacher in an urban-area International Baccalaureate K-8 school in southern Arizona, shared with me her feelings about some of the erroneous beliefs held by students entering her classroom. She equated her role as a teacher to being at war with the false impressions and mistaken views held by her students. Recognizing differences that exist among her students, Autumn likewise lamented over the challenge of making learning relevant for all of her students. She noted that pressures such as “[test] scores, scrutinized discipline, and always being in a school that is underperforming” were
impediments to her doing her best. Autumn expressed, “Four or five years ago I told myself ‘I don’t care’. This is my commitment: I am not going to teach to the test, but every single year it takes me over.”

In my experience, I have observed at least three other types of conflicts. One source of conflict seems to be having to grapple with colleagues and administrators whose beliefs and practices are seemingly incoherent, inconsistent, or oppositional. And sometimes, teachers find themselves in conflict with themselves. Akin to their students, differences exist among teachers, including their beliefs, professional practices and background knowledge. A third source of conflict is state, district, and school site mandates that may be at odds with teacher’s beliefs and selected instructional practices.

An example of the ways administrators might create conflict is in their choice of professional development models. In recent years, many school administrators have turned to “professional learning communities” (PLCs), an exciting professional development model, with an extensive research base, that promotes teacher directed professional development (Stoll, Bolam, McMahon, Wallace & Thomas, 2006). But as adapted by some administrators a good idea has been bastardized so as to be what Hargreaves (1994) describes as “contrived collegiality” (p.186) or what Autumn’s grade level colleague, Jenna, coined “pseudo communities.” Another popular administrative quick fix response is the top-down professional development model described and criticized by Anders and Richardson (1994) that adheres to a one-size-fit-all approach. Like “pseudo” learning communities, research suggests that this model does not address the conflicts found in the typical middle school.

This research project focuses on teachers’ beliefs about literacy and learning. Through professional development, my purpose was to assist teachers in resolving the
conflicts that hound them. The overarching theory guiding this work is reflection (Dewey, 1933; 1938/1997; Fenstermacher, 1994; Freire, 1970/1993; Schön, 1983) and that through reflection teachers will recognize and grapple with incongruences between their own beliefs, instructional practices and the expectations of others.

The following sections provide the context for this study. I first describe policies at the national, state, local district, and school site. Next, I describe conditions at the school site. Both contexts suggest fertile ground for conflict, which is pointed out in the discussion below. Finally, I describe my positionality in this project.

**Historical Educational Context**

In the United States, since the beginning of the twentieth century, trends reflecting an ebb and flow of competing theories and principles have dueled for dominance in educational policy. These trends are sometimes the source of conflict for teachers. Two trends are described below and serve as examples of the sorts of policies that cause teachers to be conflicted.

**Competing Theories and Principles**

The United States was markedly growing and increasing in complexity at the beginning of the 20th century. At that time Progressives theorized that teaching objectives should be derived from student’s interests, purpose and problems. Through his progressive lens, John Dewey viewed school as a community designed to teach students according to their interests and needs while in school, but also to prepare them to live their lives continuing to learn and being adaptable to real world situations. As he linked democracy and education, Dewey (1924) also linked experience and reflection regarding thinking as a continuous, “intentional endeavor to discover specific
connections between something which we do and the consequences resulting” (p. 170). In other words, it is the connection of our experiences, rather than isolated incidents, that constitute thinking. And according to Dewey (1924) it is when we experience change that “we may call this experience reflective” (p. 170). Without reflection on present actions, Dewey argued, the “acknowledgment of future consequences” is nonexistent. Linking experience, thinking, and reflection, Dewey laid the groundwork for emphasizing the process of reflective thinking for both students and teachers.

In Jackson’s (2002) analysis of John Dewey’s 1906 address to teachers of art and industrial art, he reminded readers that the progressive philosopher emphasized that meanings can be felt as well as cognized (p.168). Although Dewey’s audience consisted of teachers representing varying theories and opposing pedagogies (i.e., instrumental--emphasis on measurable outcomes in learning vs. expressive--quality of experience impacts learning), Dewey suggested that through reflection, teachers create their own theory of teaching and learning. Dewey (1938/1997) decried “Either-Or” (p. 17) or “new versus old education” (p. 90) binaries and instead recognized that in practice teachers would make compromises based on the context and circumstances in which they were working.

As Dewey was authoring the Progressive Movement, behavioral psychologists such as John Watson and B. F. Skinner were experimenting with theories of stimulus-response. Their early research was done on small animals. Watson and Skinner (Driscoll, 2000) generalized their findings to human behavior, contending that learning is simply the establishment of habits conditioned through reinforcement. Frank Smith (1998), a modern day progressive, disagreed, arguing that Watson and Skinner contributed to many
educators’ beliefs that learning is “hard work” requiring ‘getting back to the basics’ and lots of practice—beliefs that continue to permeate education system (p. 4).

**Standards, Assessments and Teacher Evaluations**

America’s entrance into World War II coincided with a shift in educational philosophy from progressivism toward the essentialist notion (Tyler, 1949/1969) that teaching “objectives are essentially the basic learnings selected from the vast cultural heritage of the past” (p. 5). An essentialist model of schooling promotes the idea that the past contains basic values that are important to pass on to future generations. This new reasoning provided for standards-based teaching and pedagogy changed. Hence, rather than accounting for students’ interests, problems or purposes, objectives are instead viewed as a vessel for instilling basic values in future generations. The New Critics’ (supporters of the essentialist movement) viewed text as something to be mastered rather than explored (Applebee 1974; Calkins, Ehrenworth, Lehman, 2012; Rosenblatt, 1983) took hold of the nation. The behaviorist theories, essentialist theories and the New Critics theories are complimentary to each other and made for a powerful rationale for the development of standards and corresponding assessments.

The coalescence of these theories and related pedagogies of instruction and assessment was further affirmed by a report, which sounded an alarm for school reform. Wong, Guthrie and Harris (2004), explained that a *Nation at Risk* (NAR, 1983), called for standards–based reform and for holding schools accountable for student performance. The report strongly criticized the United States’ educational system, citing high rates of illiteracy and low standardized test scores as reasons for the lack of competitiveness in
the national economy, military affairs and levels of achievement. The report suggested that high academic standards and a return to the basics (Wong et al., 2004) were needed.

This report launched increased attention on standards-based teaching over the next twenty-five years. Kathryn Au (2013) describes the first attempt in 1996 as *standards-as-inspiration* (p. 535) in which NCTE (National Council of Teachers of English) and IRA (International Reading Association) collaborated to establish a set of goals for education. The standards developed by IRA and NCTE, however, appeared to have little or no impact in classrooms or with policymakers.

Although critics of the NAR report were numerous, the alarmist nature of the report, as later described by Harris, Handel and Mishel (2004), won out. Harris et al. (p. 17) contend that many flaws in reasoning led to the call for educational reform based on standards and on requiring students to demonstrate their acquisition of the standards on state-wide criterion referenced or norm referenced tests. As a result, the emphasis became whether or not students had learned the standards as measured by high stakes tests. The notion of standards and holding schools accountable for students’ achievement led to the passage of the *No Child Left Behind Act* (NCLB) of 2003. This legislation mandated testing students on an annual basis (Fenstermacher & Solis, 2009). The result of this act has been testing concentrated in core subjects (e.g. reading, math, and writing) for which students and teachers are held accountable for mastery of standards. Thus, the first iteration of standards was soon superseded by a second attempt that Au refers to as *standards–as-compliance to test scores* (2013, p. 536). Consequently, by 2003 standards were used to ascertain if schools had met adequate yearly progress based on student test scores.
Still little or no improvement in student mastery of standards, as measured by high stakes tests, has been made. Hence, the standards movement shifted to a third phase, or what Au calls *standards-as-compliance to college and career readiness* (2013, p. 536) as expressed by what are commonly called the Common Core State Standards (NGA & CCSSO, 2010). Correspondingly, a set of performance-based standards of practice for teachers was developed in 2012 by the Council of Chief State School Officers (CCSSO). This implementation was carried out through its Interstate Teacher Assessment and Support Consortium (InTASC) in an effort to hold teachers accountable for their teaching practices. This has led to increased pressure on teacher education programs to prepare teachers to meet the expectations of the teaching standards. The Model Core Teaching Standards hold the potential to promote a more reflective model for teaching professionals, the emphasis on student achievement has overshadowed the possibilities for teacher reflection. Rather than foster teachers’ growth and development, the teaching standards are used in conjunction with student assessments to judge teacher effectiveness and to financially penalize teachers who are evaluated as less than effective through Value-Added Models (VAM) of teacher assessment.

Darling-Hammond, Amrein-Beardsley, Haertel and Rothstein (2012), explain VAM: teacher effectiveness is determined by examining “gains in student test scores from one year to the next” (p. 8). In an attempt to measure the impact of teachers on student learning, the VAM-- a statistical method allowing for measurement of gains in student test scores over time--is being touted as a tool to accomplish this goal. Opponents of VAM argue that a multitude of other factors could and should be used to explain student achievement (i.e., curriculum mismatch, class size, home support, prior teachers, etc.).
Darling-Hammond et al., (2012) elaborate on other tools that might also better evaluate teachers’ teaching such as performance assessments based on professional teaching standards, structured observations, frequent feedback and developing systems that recognize teacher collaboration. In other words, reflective practices used in conjunction with the standards of practice would be better teacher development and evaluation than value-added models.

Competing principles in U. S. educational policy along with shifting purposes for standards-based teaching, student assessments and teacher evaluations are examples of issues that may contribute to the conflicts teachers seem to be experiencing. This brief history serves to remind us how school reform policies have emerged and help us to understand the sorts of policies that might cause teachers to be in a state of conflict. Local conditions may also contribute to conflict teachers feel, and the next section describes the history of the district in which this study took place.

**Historical Context of TUSD**

According to historian, James F. Cooper (1967, as cited in Brousseau, 1993), the Tucson Unified School District--the district in which this study took place--was originally established in 1867 by a different name: School District No. 1 Pima County. However, no public school was actually opened until 1873. In *The First Hundred Years*, Cooper describes an array of colorful individuals (e.g. superintendents, principals, teachers, members of the school board) who helped to shape the school district during a time of Indian raids, barroom brawls and limited resources. These men and women contributed to the fulfilment of the governor’s dream to offer a free education to Arizona children. Still, the dream of a free education for *all* came with challenges.
A History of Segregation

In 1902, district boundaries were put in place and children were strictly required to attend the school within their boundary. Cooper (1967, as cited in Brousseau, 1993) explains

On October 7, 1912, James R. Dunseath, representing H. V. Anaya, appeared before the Board and asked that Anaya's children be transferred from Drachman School to Downtown Central because "all the children at the Drachman School speak Spanish and Mr. Anaya prefers that his children hear English spoken on the playground." The Board refused the transfer.

Strict boundary lines were designed for keeping certain students at certain schools within what became known as Tucson School District One. Children were separated by the language they spoke: English-speaking and Spanish-speaking students. Students were also separated by race. A school was established in 1913 for African American children in the elementary grades through grade eight. The original site was leased until a building could be constructed and eventually opened in 1918. There is no evidence that African American youth went to high school. Additions and expansions to the Dunbar School, as it had been named, continued as the population grew and students stayed in school longer. Eventually as the black student population increased, talk of building another school emerged, but instead, in 1951, the district called for an end to segregation. This decision took place prior to Brown v. Board of Education of Topeka (1954), which determined “…the doctrine of ‘separate but equal’ has no place” (Cushman, 1979). The intent to integrate, however, whether district-directed or federally directed, was far from being accomplished.
The district was still segregated in 1970. In 1970 the U. S. Department of Health, Education and Welfare (HEW) issued a report criticizing the treatment of minority students in Tucson School District One. The district, however, resisted. According to Devine (2015), then Superintendent Thomas Lee, argued, ‘Bias, prejudice, and twisted reasoning are the principal characteristics of this HEW document’ (p. 146). As a result of the HEW report, the district was given two years to integrate twenty-six of the predominately minority schools within its boundaries (Devine, 2015). In 1974 two lawsuits were filed: one was a class action suit filed jointly by the NAACP and the Fisher’s, an African American family; and a second lawsuit filed by a Latino family, the Mendoza’s. The following year, 1975, the two cases were merged into the case of Fisher, et al., v. Tucson Unified School District (1978). The plaintiffs contended that the Tucson Unified School District was not providing equal educational opportunities for its students of color. The trial that ensued resulted in the 1978 verdict: the district was ordered to end discrimination in nine of its schools. Downtown Central, where this study took place, was one of the nine schools. Later additional sites were added to the list.

Compliance was to be brought about by creating a “unitary school system.” This requirement by the Federal Court had precedence in an earlier Supreme Court decision, Green v. County School Board (1968). The term unitary describes school districts that are brought into compliance through stringent rules set forth in the Green case; and if deemed necessary, is enforced by federal oversight. The inability of TUSD to demonstrate constitutional compliance has continued and continues to plague TUSD. Hence, the roots of racial inequity are deep-seeded and TUSD continues to be under a court ordered Unitary Status Plan.
A History of Unresponsiveness and Neglect

Due to an action of the Arizona State Legislature (Devine, 2015), on July 1, 1977 Tucson School District One officially became known as the Tucson Unified School District (TUSD). According to Brousseau (1993), “Until this date, the school board had functioned as a board of trustees when dealing with elementary matters, and a board of education when addressing secondary issues.” (Wilbur Lewis comes to Tucson, para 3). The new TUSD school board then called for a study to examine the organization of the district. This led to restructuring district leadership by appointing assistant superintendents to oversee schools located in four distinct regions of the district. The report, the Peat, Marwick and Mitchell Study (1977, as cited in Brousseau, 1993), recommended the creation of a common K-12 curriculum and was critical of the past unresponsiveness of the district to the community it served. In addition the study called for capital improvements in the district, estimated to cost five hundred million dollars (Brousseau, 1993). It was not until 1982 that a remodeling project for ten schools older than forty years was implemented. Both the elementary and middle school buildings located on the campus of Downtown Central were included in the renovations. Not surprisingly the renovation project coincides with Downtown Central’s transition to magnet status discussed in the following section.

Magnet Status Then and Now

As a result of the Mendoza and Fisher ruling in 1978 the federal court ordered that segregation in Tucson schools end and that the district comply with policies and procedures to end discrepancies in enrollment and student achievement. Part of the three-phase approved solution was to establish “magnet schools,” an approved option under the
Unitary Status structure. The term magnet refers to the possibility of certain public schools (those with majority minority demographics) to admit students from areas across school boundary lines. Each magnet school had an approved program that was designed around a particular theme, such as the arts or math and sciences. The intent was to attract students, usually white, to minority-majority schools in order to end segregation.

In 1982, the school at which this research was conducted, Downtown Central, was first approved as a math and engineering magnet school. Despite transportation options for students, open enrollment, and mandatory highly qualified staff assignments, Downtown Central remained an underperforming school with a majority of minority students in attendance. After a grueling process overseen by the International Baccalaureate organization, the magnet theme was officially changed in 2013 to that of an International Baccalaureate World School. Still today, despite slight gains in student assessment scores the year after IB authorization was completed, the school has failed to demonstrate significant gains in student achievement and the Latino student population remains close to seventy-five percent.

**Description of Downtown Central**

The magnet school site where I conducted my research is a K-8 Magnet School located in southern Arizona approximately seventy-three miles from the United States/Mexico border. And to reiterate, the site, referred to in this study as Downtown Central, is in jeopardy of losing its magnet status. The current theme offered at this particular site is that of an International Baccalaureate World School.
The Campus, Faculty and Students

The middle school building is rich in history. The main building dons a dedication plaque dating back to 1918, but the origins of the school can actually be traced to 1884 when it began operation under a different name. The original building burned resulting in the construction of a new school. According to Cooper (1967, as cited in Brousseau, 1993), the construction of the 1918 junior high structure was sound and no renovations were necessary until the 1950s. Currently, the administrative office is located on the first floor of the ornate, Spanish-style building and serves as the hub for business operations and visitor activity. This particular building now houses the majority of middle school classes except for the elementary band and Arabic and English language development (ELD) classes. No remodeling in the main building has taken place since the 1980s; thus it is in need of renovations and updates. Plumbing, heating and cooling problems are common issues in the building.

The elementary building, also constructed in the early 1900s, is equally rich in history. While the two buildings have not always shared the same school name, they have stood side by side for the past one hundred years. In addition there is an array of seemingly mismatched structures with more modern features (but still reflecting the Spanish architectural theme) helping to house, feed and provide resources to students from kindergarten through eighth grade. Colorful maps and directories infuse an international flavor into the sprawling downtown campus while a mismatch of technical tools (e.g. interspersed computer labs, Promethean boards in every classroom, and a large screen television in the main building lobby) clash with the early 1900 architecture. Missing tiles in both the ceilings and floors of the older buildings are constant reminders of the lack of maintenance plaguing the declining campus. Pride, however, exists among
many alumni members who boast their children and grandchildren represent third and fourth generations of their families who have attended the school.

The faculty is comprised of sixty-five teachers who are supervised by two administrators--one principal and one assistant principal. At the time of my research, both administrators were in the second year of their leadership roles. The elementary site includes twelve grade level teachers and five additional specials teachers assigned to teach various support subjects (e.g. Spanish, Arabic, Personal and Social Physical Education--PSPE, etc.). The remaining members of the faculty comprise the middle school and certified support staff. Less than half of the faculty is part of the original IB trained members.

The K-8 school serves approximately 786 students in grades kindergarten through eighth grade. According to school records approximately 626 of the 786 students enrolled at Downtown Central qualify for the free/reduced lunch program an indication that the majority of the school population (nearly 80%) is of a low socioeconomic status. A breakdown of site records indicate 75.1% of the enrolled students at Downtown Central are Hispanic, 8.1% African American, 5.1% Anglo, 8.8% Native American, .4% Asian American and 2.4% Other. Typically “Other” indicates a multi-racial classification--meaning more than one race had been marked on their records. In sum, the school is centrally located within the city limits, considered a magnet school--accepting students from locations beyond their home boundaries--and offers an International Baccalaureate (IB) program, a curricular framework focused on international mindedness.
The International Baccalaureate Program

The magnet theme of Downtown Central, which was officially changed from the math and engineering theme in 2013, is that of an International Baccalaureate (IB) World School. The mission statement of the school is to develop “active, inquiring, knowledgeable and caring lifelong learners who help create a better and more peaceful world through intercultural understanding and respect.” IB offers standards and practices with requirements for both the Primary Years Programme (PYP) and the Middle Years Programme (MYP). The standards and practices set forth by the IB center on philosophy, organization, and curriculum; at the heart of these standards and practices are collaboration, reflection and inquiry--for both teachers and students.

Constructivism, the learning theory on which IB is based, emphasizes the importance of social and cultural contexts. Cooperative learning (Jacob, 1999) structures and opportunities to engage in experiential learning, (Silberman, 2007)--also referred to as service learning--are practices consistent with the theory of constructivism. The IB philosophy stresses collaboration for students and teachers and rejects behaviorism, which stresses direct instruction and mastery learning. Collaborative team meeting time is an IB requirement and has been allotted for both PYP and MYP teachers. MYP teams, which are comprised of four same grade level content area teachers (e. g., math, science, language arts and social studies), are required to meet once daily. There is one grade level team exception (a sixth grade team) comprised of only two teachers--one who teaches language arts and social studies and the other who teaches science and math. Those who teach electives such as foreign language, fine arts, digital arts, or special education also form teams. PYP teams, which are comprised of two teachers who teach the same grade
level, are required to meet twice weekly. There is one additional PYP team, the specials team, which is comprised of teachers who teach multiple grades of special education and specialized subject-areas such as a foreign language, music, etc.

Through inquiry, International Baccalaureate students learn to explore world issues under the supervision of teachers. The IB program calls for middle school learners who are open-minded, reflective, balanced, caring, principled, knowledgeable, courageous, inquirers, communicators, and thinkers. These learner profiles are based upon principles taught to PYP students that consist of: tolerance, commitment, integrity, respect, confidence, enthusiasm, cooperation, appreciation, independence, curiosity, empathy and creativity. To instill these attitudes and thus create IB learner profiles, teachers develop curriculum that explores personal cultures and then cultures beyond their own experiences. In this way the concept of international mindedness is hopefully developed.

When students recognize the cultures that influence their thinking, they become more aware of why and how culture is important to others. They no longer see culture as about the ‘other’ and as exotic, but recognize that it is the heart of defining who they are as human beings (Short, 2009, p. 4).

Thus, curriculum should be both a reflection of self and a window through which we can see others. The IB philosophy and curriculum are built around this notion.

**Researcher’s Positionality: My Story**

I am suspended between and in a world of scholarship and practice. Lampert (1985) explains “Moving from the world of practice into the world of scholarship and back enables a useful deliberation; as a method of inquiry into the nature of practice, it
enriches and refines both the questions one asks about teachers’ work and the attempts one makes to answer them” (p. 180). The opportunity to oscillate between my worlds has provided me with a unique perspective. As a graduate student and classroom practitioner I have embraced teacher research conducting numerous studies--formal and informal, published and non-published. Each project has presented new challenges on which to hone my craft as a teacher, a researcher, a thinker and a doer.

Finding my Place

In 2009 I moved from teaching in a middle school classroom to a district position as a literacy specialist, and at the same time continued my graduate studies. During that time I completed several research projects. I found the literacy specialist position to be frustrating and isolating on one hand; but, on the other hand, the position afforded me mobility among TUSD K-8 and secondary schools. My mobility provided many insider opportunities to observe the daily functions of several schools. Downtown Central was one of the sites I served during that time.

In 2015, I was granted a district transfer to work specifically at the Downtown Central campus. I am not sure if I chose the school or the school chose me, but fate landed me at a site steeped in controversy and contradictions. The move from my district literacy position to the role of a literacy specialist and professional development leader at a K-8 school added a layer of complication as I attempted the convergence of my worlds. At times my status as a teacher afforded me an insider role with my peers, but other times I think I was perceived as an outsider--a teacher without a classroom, not quite part of the teacher club; I have a hunch some teachers suspected I was a district spy. Other times
they invited me in as a scholar, a researcher, a literacy expert; roles teachers tend to not see themselves as, but I wish they would.

After all, teachers search for ways to share their formal knowledge to students and at the same time to recognize what is working and what is not. They are not only experts in their content, but theorists and researchers as well. This, Lampert (1997) asserts “…is the essence of the teachers’ job to be a person who can manage both conventional social expectations and individual understanding, even though the two may often be in conflict” (p. 104). Given the historical context of the school district and the school, Downtown Central was certainly a place in which to explore conflict.

Identifying Potential Conflicts

My work at Downtown Central challenged me to look at the choices teachers made. My classroom observations suggested teachers in both the elementary and middle school classrooms found themselves in conflict with the two opposing learning theories: constructivism and behaviorism. Conflict was inherent in the existing theoretical framework of the district (behaviorist-based) and that of the site (constructivist-based). For example, district mandated curriculum and quarterly progress monitoring assessments are at odds with the collaborative, reflective inquiry-based units and types of formative and summative assessments called for in the IB standards of practice.

In response to district-mandated quarterly reading assessments it appeared that for the most part reading was taught from a skills-based approach based upon an autonomous model of literacy (Street 1984; Street, 2006). The skills-based reading lessons I observed were conducted through verbocentric (Siegel, 2006) structures and were in stark contrast with the IB focus on inquiry and experiential learning. An emphasis on mastery learning
of standards in preparation for the quarterly benchmark test dominated classroom instruction.

While time for collaborative meetings was provided, reflection on teaching and curriculum (IB standards of practice) rarely happened. Instead teachers such as Autumn felt they needed “to teach to the test” causing the anguish she relays at the onset of this chapter. Thus, team meetings were instead used to discuss student behaviors and analyze assessment data. In cases such as this teachers are torn between what they know to be best for their students and what forces outside their classrooms expect. I recognized reflection could possibly provide the teachers at Downtown Central with a means for dealing with discrepancies they were experiencing.

**Research Questions**

Keeping in mind Lampert’s (1985) notion that “[e]ven though the teacher may be influenced by powerful sources outside herself, the responsibility to act lies within” (p.180), I set out answer the following questions:

- What is the role of reflection in teachers’ instructional decision-making?
- What is the relationship between reflection and professional development?

This instrumental case study examines the ways in which four teachers uncovered and grappled with discrepancies between their beliefs and theories and reflections.

Chapter one has stated my purpose and introduced the historical (both national and local) context for this study. I have described competing principles along with conflict stemming from standards-based teaching, student assessments and teacher evaluations that continue to plague teachers. I have also depicted the site at which this study took place. The conclusion ended with my unique story and the guiding questions.
for my research that arose from my positionality. Chapter two sets forth the theoretical framework and a review of the literature pertinent to the study. A description of the methodology for this instrumental case study, an introduction to the participants, and a description of the professional development process are outlined in Chapter three. In Chapter four I unveil my findings, and in Chapter five I summarize the study with a discussion of the findings and implications for research, practice and policy.
CHAPTER 2. SURVEYING THE BATTLEFIELD:

A THEORETICAL FRAME AND REVIEW OF THE LITERATURE

“One of the grand benefits of teaching is that you are reflected in every student and in every class you have. If you open your eyes to that reflection, attending to it as if it were a gift, you gain something very precious. That is the chance to refashion yourself again and again, always becoming more of what you want to be both as a teacher and a person.”

--Fenstermacher & Soltis 2009, p. 74

The purpose of this chapter is to describe the theoretical frame of the study and to describe related research. Educators have theorized that reflection is the means by which teachers consider what they do well and how they might improve their instruction and teaching. Because teachers with whom I was working reported many conflicts and frustrations with their teaching and with the expectations of others, I planned, delivered, and studied a professional development program designed to promote teachers’ reflexivity. The theory is that teachers who are reflective are teachers who critically analyze their teaching. Considerable research has been done on testing this theory. That research is summarized in the second section of this chapter.

Theoretical Frame

Charles Lemert (2010) describes social theory as a way of helping us wonder why things are the way they are. Thus, theories consist of assumptions about a particular phenomenon and provide ways for considering or thinking about that particular wonderment. Early in the twentieth century John Dewey (1924, 1933, 1938/1997) theorized and contributed much to our understanding of educational thinking and in particular, reflective thinking. Dewey was the first to describe teachers as reflective
practitioners; a view that decades later Donald Schön (1983) adopted and applied to several professions (e.g., teaching, medicine, architecture, etc.).

Schön’s work recognizes that practitioners reflect on their practice. Schön viewed reflection as a recursive process involving both types of reflection. Another theorist contributing to our understanding of reflection is Gary Fenstermacher (1987). Drawing from Thomas Green (1976), Fenstermacher (1987) compellingly argues that practical arguments can be used by teachers as “a way to explain how empirical findings could affect practical action” (p. 359). The following three sections discuss these three theorists along with types of and techniques used in conjunction with reflective thinking.

The Origins of Reflective Thinking

As part of his educational philosophy John Dewey (1933) distinguishes between two types of action: routine action and reflective action. Routine action refers to the everyday things teachers do as a matter of course; they are actions that are embraced by a particular school culture. Routine actions are the way things are done in a particular context (i.e., the way things are done here at Downtown Central). Reflective action, however, refers to the type of thinking required to solve a problem. In his book, *How We Think* (1933), Dewey defines reflective action as "[a]ctive, persistent, and careful consideration of any belief or supposed form of knowledge in the light of the grounds that support it, and the further conclusion to which it tends" (p. 6). According to Dewey, teachers who do not reflect on their practice accept every day realities (routine actions) without critique of the quality or outcome of the practice. Reflecting on practice reveals
shortcomings or problems and through reflection, teachers discover ways to problem-solve.

Reflective teachers embrace uncertainty and seek to analyze problematic situations; they suspend judgment and search for solutions. In *Democracy and Education* (1924) Dewey defined reflection as accepting responsibility for “the future consequences which flow from present action” (p. 171). Dewey (1933) later expanded this notion to include reflective actions, which can take place either in the midst of an action or after the action has taken place. The foundational works of Dewey regarding reflective thinking continued to influence theory and research throughout the twentieth century and well into the twenty-first century.

**Reflecting On and In Practice**

By applying the notion of reflection to a range of practitioners (e.g., architects, teachers, etc.) the social scientist, Donald Schön (1983), built on Dewey’s ideas. Schön defined *knowing in action* as the spontaneous actions of a professional, such as a teacher, based on professional knowledge. In some cases these knowledge-based acts are reflected upon by the practitioner (e.g. the feel for music that a jazz player responds to in an improv session) at the time, or in practice. In other cases, according to Schön (1983), reflection takes place after the action, such as how a teacher might reflect on a student doing a recital (thinking about the quality of the student’s performance and what it suggests for the next concept or skill to be taught).

Schön (1983) considers reflection as a conscious act brought about by “situations of uncertainty, instability, uniqueness and value conflict” (p. 50). He makes a distinction between two types of reflection, reflection **on** and reflection **in** practice. Reflection on
practice can take place at two different times, either before or after an act. For instance, a teacher may reflect on a lesson plan s/he is creating and then again reflect on the lesson after executing it. On the other hand, reflection in practice takes place simultaneously as the lesson takes place. An example of this type of reflection might be when a teacher makes adjustments during a lesson in response to students’ actions. This cycle allows teacher to frame and re-frame problems that are encountered and to in turn to apply new information gathered during the process. Hence, the process of restructuring experiences based upon reflection (both in and on practice) is cyclical in nature. Schön contends it is through close analysis of one’s practice that new perspectives can be gleaned. Thus, analysis of their thought process can offer a way to for teachers to critically reflect in and on their practice in order to use their new perspectives as the cycle begins anew.

Schön (1983) further built on Dewey’s theories by expanding the description of the ways professionals reflect. He explains, “Many practitioners, locked into views of themselves as technical experts, find nothing in the world of practice to occasion reflection” (p. 69). Schön (1983) refers to the term “Technical Rationality” (also employed by Van Manen, 1977) as being employed by professionals who ignore the context in which a problem is taking place (p. 39). Teachers who are “technical rationalists” are likely to have a high degree of confidence in the practices they employ and the materials they are using. When a student or a class of students is not progressing as expected, the explanation is likely to on variables outside of the teacher’s control.

**Reflective Practice and Practical Arguments**

Research suggests effective teachers adapt their teaching through reflection--both in and on practice--while others are not particularly reflective (Richardson & Anders,
1994). So, why are some teachers more reflective than others? Similar to Dewey’s conjecture that the culture of a school inhibits reflective thinking, Schön (1983) contends, as “practice becomes more repetitive and routine…the practitioner may miss opportunities to think about what he is doing’ (p. 61). For those who choose to reflect the act is usually brought about by some element of confusion or surprise.

Historically theorists such as Dewey and Schön view reflection as a process that assumes instructional practice will be more consistent if teachers think about what is rewarding for students and what causes concern about their students’ learning. Practice, however, is influenced by the personal and practical theories teachers possess. Teacher’s theories come from a multitude of influences (e.g., the way in which they were taught, parents, peers, school culture, etc.). Gary Fenstermacher (1994) argued that through and by reflection teachers can discover their theories and strive for coherence between their theory and practice. When inconsistencies are found, a teacher can be open to change. Fenstermacher (1994) articulated the idea of practical reasoning as a tool for teacher reflection. He described practical reasoning as “the thinking we do about our actions” (p. 24).

Both Thomas Green (1976) and Fenstermacher (1987; 1994) used Aristotle’s practical argument (a systematic form of practical reasoning) to examine teacher thinking. Fenstermacher (1987a) explained that practical arguments reveal a teacher’s beliefs (theories) as being one or some combination of four types: a) empirical, b) evaluative, c) stipulative, and d) situational. He suggested that reflection, most often with a more knowledgeable “Other,” involving empirical knowledge might improve the coherence of a
teacher’s reasoning (p. 359). Thus, practical arguments can serve as a bridge between theory and practice.

Fenstermacher’s (1987b) scholarship diverges with Schön’s on one particular point, which Fenstermacher himself describes as “a very real disjunction,” in their views of where science is placed in practice (p. 419). Schön believes science and practice are separate places-technical vs. practical--while Fenstermacher argues that the two are not independent. In order to “gain a sense of the basis of their actions,” Fenstermacher (1987b) contends practical arguments can help teachers use “defensible theory and good research to advance their pedagogical competence” (p. 416). Hence, practical arguments provide a context for discovering reasoning through a reflective process.

The origins of reflective thinking are deeply rooted in the theories of John Dewey. Donald Schön elaborated on Dewey’s theories and provided definitions of types of reflection along with examples of professional’s reflection, and Gary Fenstermacher provided a tool to analyze reflective thinking. These theorists’ scholarship provided the frame for the present study. I chose the research reported below because the studies were based on the assumptions of these theorists.

**Related Literature**

The research literature cited below address a) studies of reflection and teacher change; b) studies of how teachers become reflective; and c) conditions needed for reflection to occur.

**Teacher Reflection and Teacher Change**

A major issue among teacher educators and policy makers has been the question of teacher change. How can teachers be helped to adjust and adapt their instruction to
meet the needs of their students or to respond to new policy demands? The following two studies are exemplary of the research investigating this big question.

By relating thinking and doing in the form of practical argument, Fenstermacher explains reflective thinking becomes a “vital practice in teaching” (1994, p. 26). Richardson and Anders (1994) employed Fenstermacher’s practical argument to analyze teacher’s beliefs in the Reading Instruction Study (RIS) they designed in 1991. The study addressed the question: Why do teachers report not using research based instructional strategies to teach reading comprehension? The researchers argued beliefs can impede or enable teacher learning in professional development programs.

The study involved thirty-nine participants who taught grades 3 through 5 in five different schools. One data gathering instrument was a belief interview developed by Richardson and Anders (1994) to “elicit teachers’ beliefs inductively” (p. 97). The interview was used again following a professional development program to describe belief and practical changes made by the teachers. From teacher belief statements extracted from the interviews, predictions were made as to where the teachers’ theories of reading fell on two continua—Reading/Purpose of Reading and Teaching Reading/Learning to Read (Richardson, 1994; Richardson, Anders, Tidwell & Lloyd, 1991).

From that starting point, the professional development process they embarked upon combined theory with practice and encouraged teachers to explore the quality of their empirical arguments for the practices they used when teaching reading comprehension. This setting not only allowed teachers to reflect on their practice, but “provided a context for change” (Lloyd & Anders, 1994). The study’s findings suggested
that articulating ones’ beliefs provided opportunities for teachers to examine and link theory to their practices, which brought about change in their practices.

Recognizing that learning how to be reflective is likely to be a challenge, Wildman and Niles (1987) investigated reflection processes with twenty teachers (both novice and veterans) for a two year period. The emphasis was on the experienced teachers and how to help them become more reflective in order to assist the novice teachers in being reflective about teaching. Their study suggests that beginner teachers could learn the value of reflective thinking. The purpose of the study was to reveal some of the gaps that transitioning to a reflective teaching model might produce. The study revealed three findings in terms of what teachers need. Firstly, teachers needed the skill to articulate their own theories. Secondly a safe environment for sharing was necessary; and lastly, reflection cannot be rushed. Reflective practices must take place at the pace of the teachers, not the facilitator(s). Without taking these three necessary components for reflection into consideration, Wildman and Niles (1987) feared efforts to revitalize or to support reflection may be thwarted resulting in a “technological orientation” (p. 31). The researchers also cautioned that “the idea of teacher-as-reflective-practitioner will not happen simply because it is a good or even compelling idea” (p. 29); policy makers and administrators must also work towards assisting teachers to be reflective.

Helping teachers to adjust and adapt their instruction is complex. Professional development is looked to as a way to assist in this multifaceted issue; however, a large body of research suggests teacher beliefs are deeply tangled with their instructional practices. The two studies mentioned above offer reflection as a means for teachers to sort through personal and academic theories. Practical arguments can serve as a tool for
helping teachers meet the needs of their students and respond to outside demands that are placed on them. In order to reflect on and challenge themselves though, teachers need the ability to articulate their beliefs, a safe environment in which to express themselves, and the opportunity to work at their own pace. The research presented proposes the notion that learning to be reflective does not come easily; reflection is challenging and requires practice doing so. The following studies explore the notion that differences may exist in reflective thinking among experienced and novice teachers.

**Studies of How Teachers Become Reflective**

Described below are three studies investigating a) the development of reflective thinking; b) the development of pre-service teachers’ reflective thinking; and c) the reflective thinking of mature teachers. These studies suggest that reflective thinking is developed over time and varies among teachers with more and less experience.

First Kitchener (1983) defined three levels of cognitive processing as cognition, metacognition and epistemic cognition and later described seven stages of reflective judgment by university students. This conceptual work laid the groundwork for developing the reflective judgment model (RJM) that King and Kitchener (1994; 2004) based their research upon. Using the model, King and Kitchener (2004) examined a wide range of educational levels and ages from late adolescence to adulthood. The seven stages of RJM-- representing different types of epistemological perspectives--can be divided into three levels: 1.) pre-reflective thinking--stages one through three; 2.) quasi-reflective thinking--stages four through five; and 3.) reflective thinking--stages six through seven.
According to King and Kitchener, pre-reflective levels have to do with knowledge certainty and uncertainty. If information exists or a person has experienced something then knowledge is certain; however, if the information is unavailable, then knowledge is uncertain. Also, there is a sense of trust for experts who tell us something is true. Quasi-reflective levels involve recognition that knowledge is uncertain and that personal agendas and perspectives can influence what one sees. The reflective thinking level involves the understanding that beliefs are justified by comparing evidence and opinion. The highest level of reflection would then be the understanding that reasoning and evidence are used to draw a conclusion from an argument. These stages provide a foundation for understanding the “developmentally ordered differences in the way people reason” (p. 9) about controversial problems. Their research and the research of others using their model (e.g., Livingston & Borko, 1990) suggests that reflective thinking develops over time. The model has also been used by other researchers (e.g., Collier, 1999; Wlodarsky & Walters, 2006) interested in determining characteristics of reflective thinking.

Second Woolley and Woolley (1999) argued that personal learning experiences were crucial for pre-service teachers to form their own teaching beliefs. According to the authors, they were responding to the trend toward national teaching standards. As professors, they were designing a new teacher preparation program around the theme ‘teacher as reflective decision maker’ (p. 4). Using Posner’s (1983, as cited in Woolley & Woolley, 1999) field manual about reflective experiences, Woolley and Woolley (1999) set out to revamp the teacher program at their small Pennsylvania university. Coursework
included the introduction of constructivist practices which students were encouraged to reflect upon throughout their studies.

To evaluate whether or not the pre-service teachers changed their beliefs during the university program, and to compare the pre-service teachers’ beliefs with those of practicing teachers, the researchers developed and validated a survey instrument to measure the behaviorist and constructivist beliefs of sixty-one pre-service and one hundred and thirty-seven in-service teachers. The intent was to combine the survey with qualitative data (i.e. interviews, student writing assignments, etc.) in order to monitor how students’ beliefs changed over time through their pre-service to in-service teaching experiences. In this way Woolley and Woolley (1999) considered whether teacher beliefs can be shaped through the implementation of reflective practices in both college coursework and in field experiences.

Findings from a study led by Woolley and Woolley (1999) reveal that “some behaviorist practices may be a subset of a belief system that is overall constructivist” (p. 13)--in other words, teachers’ theories of teaching and learning are not consistently coherent. They arrived at this conclusion from the findings of a preliminary study conducted by Woolley, Woolley and Hosey (1999, cited in Woolley & Woolley, 1999) in addition to the research validating the survey. They note that beliefs of pre-service teachers “exhibited significant declines in constructivist beliefs while virtually no change in behaviorist beliefs following their student teaching experiences” (p. 13). In other words, the constructivist beliefs of pre-service teachers declined after their actual teaching experiences; however, their behaviorist beliefs remained constant. The findings also suggest that pre-service teachers have tendencies toward being either a constructivist
or a behaviorist, while in-service teachers demonstrate behaviorist tendencies “in some areas and constructivist in others” (p. 12). Woolley and Woolley concluded that the survey provided a means to examine the relationship between behaviorism and constructivism, and also provided a means for examining the evolution of student beliefs who were involved in reflective activities in their teacher preparation program.

Third, in another teacher education and reflection study, Wlodarsky and Walters (2006) wanted to improve the teaching program at a private Midwest university, and conducted a study focused on reflective practices. Faculty review and professional development conducted at the private Midwest University were based upon a reflective model promoting the notion that teachers are reflective decision makers. The study was focused on faculty members in the teacher education program rather than students within the program. Researchers selected a voluntary sample of twenty-two faculty members. Using the reflective judgment model developed by Kitchener and King (1994), which Shirley and MacDonald (2016), argue “had more empirical foundations than Schön’s work and encouraged the development of critical thinking and informed professional autonomy” (p. 29), the researchers interviewed and observed the teaching faculty. Their findings suggested four characteristics of reflective practices: a) reflection is an internal, cognitive process; b) participants were open to input from peers within an informal setting; c) reflection was an evaluative process; and d) reflection was associated with beliefs and practices.

The research presented in these studies suggests that there are dimensions of reflective thinking, that reflective practices involve certain characteristics; and that the beliefs of reflective practitioners who possess these qualities evolve over time. The idea
that reflective thinking can vary among practitioners expands our understanding of Schön’s (1983) notion of reflecting-in-practice and reflecting-on-practice. This key understanding can be helpful in identifying the conditions necessary for change discussed in the following section.

**Conditions Needed for Change to Occur**

A final issue related to teacher reflection has to do with the conditions necessary for change to occur. These studies are exemplary of the research investigating this big question. Teachers who are reflective critically analyze their teaching and the context of their teaching.

Lampert argues the approach of teachers as researchers can be a powerful reflective tool. Magdalene Lampert (1997) revisited an essay she had written in 1984 entitled “Teaching about Thinking and Thinking about Teaching.” In it she reflected on a two-year research project that had centered on the situated learning experiences of seven teachers who volunteered to participate in a constructivist-based professional development project. Teachers were expected to base their instruction upon the thinking of their students and then discuss their decisions in their PD sessions. The dilemma that surfaced was the teachers involved in the project had a difficult time reconciling the notion that *intuitive* and *formal knowledge* can be integrated. Teachers had difficulty translating someone else’s theory into their own. While Lampert re-examines the project and still considering action research as a powerful reflective tool, she points out that teachers need to develop reflective language in which to articulate their thinking. She further argues that a condition necessary for reflective progresses is learning the language of reflection.
Griffiths and Tann (1992), teacher educators and teacher researchers, were also concerned about the quality of reflection they observed among their colleagues and students. They carried out a descriptive study of teacher’s language when reflecting and explored the ways that teachers used images and metaphors to bring to the surface teachers’ personal theories. From this work they were able to develop a model of a reflective cycle to describe different levels of linkages between and among public and private theories.

Their paper argued that the divide between theory and practice--purportedly teachers say they reject theory and are simply looking for practical ideas--is a false one. As educational philosophers often say, nothing is so practical as a good theory. Reflection helps uncover personal theory, and once that personal theory is articulated, it can be critiqued, challenged, built upon and revised. Griffiths and Tann argued that teachers need opportunities to theorize and reflect in all the dimensions of the process to link personal theory with public theory. According to Griffiths and Tann, the five dimensions of reflective thinking are:

Rapid reaction

Act-react:
Reflection in action
Immediate and automatic

Repair

React-monitor-react:
Reflection in action
Thoughtful

Review

Act-observe-analyze and Evaluate-plan-act:
Reflection on action
Less formal

Research

Act-observe systematically and Analyze rigorously-evaluate-plan-act:
Reflection on action
<table>
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<th>Reauthorizing</th>
<th>Act-observe-analyze and Evaluate-plan-act:</th>
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<td>and</td>
<td>Reflection on action</td>
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<td>Reformulating</td>
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Griffiths and Tann (1992) maintain that humans use different dimensions of reflective thinking and argued that all dimensions, which differ in terms of consciousness and speed, are necessary and important in reflective thinking. The last two dimensions described above are applicable to academic (or public) theories, while the other three levels relate with personal theories. Griffiths and Tann (1992) contend that in order to reflect upon personal and public theory teachers need to use all five dimensions; they explain

This would encourage them [teachers] to articulate their own theory, critically examine it, check for consistency, coherence and adequacy, compare it with alternative theories and reconceptualize it in order to increase the effectiveness of their own personal thinking” (p. 82).

While all five dimensions of reflection are necessary, they are not hierarchical. Different types of reflection are called for in different teaching situations; however, focusing on a particular dimension can lead to disregard of the other necessary dimensions.

There is a difference in language that exists between the every day words spoken in personal theories and the technical terminology encountered in academic theories. Similar to Lampert (1997), Griffiths and Tann (1992) found teacher-talk to be more suited for practical action. The language the researchers noted was both rich with analogies and ordinary, every day words but lacking academic language. For example, a
teacher may refer to the use of *number work* when planning a math lesson; use the term *number sense* when reviewing the mathematical standards associated with the lesson, but shy away from the term *relative value* or theories associated with mathematical practice. Distinguishing between and articulating within the two dimensions of personal and public theories are essential components of reflective thinking and thus, providing opportunities for using the language of both personal and public theories are necessary conditions for developing teachers’ reflectivity.

**Summary**

The foundational works of John Dewey, Donald Schön, and Gary Fenstermacher regarding reflective thinking continue to influence theory and research. This chapter outlines their theories and provides a frame for not only understanding what reflective thinking is, but that different ways of reflecting (e.g., reflecting in and on practice) exist and that practical arguments can be used as a reflective tool for analyzing practice. Analyzing belief statements can serve as bridge between theory and practice allowing teachers to be more coherent in their classroom decision-making and instructional practices.

The research presented in this chapter suggests reflection is both necessary and challenging for teachers. The Reading Instruction Study (RIS) (Richardson, 1994; Richardson & Anders, 1994; Richardson, Anders, Tidwell & Lloyd, 1991) suggests that beliefs provided opportunities for teachers to examine and link theory to their practices, this in turn brought about change in their practices. Wildman’s and Niles’ (1987) study among experienced and novice teachers uncovered components for reflection that should be taken into consideration. In seeking how teachers become reflective, Woolley and
Woolley (1999) and Wlodarsky and Walters (2006) suggest differences exist in reflective practices among novice and expert teachers. Other studies (King & Kitchener, 1994; 2004; Livingston & Borko, 1990) have employed a Reflective Judgment Model in order to consider characteristics in different levels of reflective thinking. Lastly, studies considering the conditions for reflection have been conducted by researchers such as Magdalene Lampert (1997) and Griffiths and Tann (1992) who suggest the ability to articulate one’s personal and public theories is a necessity in reflective thinking. Furthermore, Griffiths and Tann contend there are dimensions of reflective thinking that are used interchangeably in experienced, reflective practitioners.

Although these studies differ methodologically, the conclusions suggest that teachers are more likely to change when their core beliefs are surfaced and critically thought about. Professional development sessions designed to include teachers’ examination of and opportunities to critique their beliefs are more likely to result in teachers adjusting their beliefs to accommodate the new practice. The evidence suggests that professional developers who ignore teachers’ core beliefs do so at their peril.

The professional development plan I developed was based on the theoretical framework and related research presented in this chapter. The following chapter first describes the professional development program and then describes the research design.
CHAPTER 3. THE BATTLE PLAN: THE METHODOLOGY

“An empowered teacher is a reflective decision-maker who finds joy in learning and investigating the teacher/learning process—one who views learning as construction and teaching as a facilitating process to enhance and enrich development”

--Fosnot, 1989 (p. xii).

The purpose of this chapter is to describe the methodology for this instrumental case study. My study emerged from a larger professional development plan that I developed specifically for the entire faculty at Downtown Central. First, the Professional Development plan I designed for Downtown Central is explained; and second, the research action plan is described.

The Professional Development (PD) Plan

The professional development plan I tailored for the faculty at Downtown Central was based upon my experiences from the previous year and new district directives for the upcoming school year. The Professional Development provided on opportunities for teachers to reflect on their instructional decisions regarding literacy and learning. The design and implementation of the plan is described in the following section.

The Setting and My Positionality

As described in chapter one, this seven month professional development plan was actualized from July 2015 through February 2016 at Downtown Central, a Title 1 school located in southern Arizona. The school serves approximately 786 (students from kindergarten through eighth grade) and at the time sixty-five teachers were employed at the site. My job requirements, as a literacy specialist, afforded me opportunity to design PD, school-wide accessibility, a degree of credibility and in turn the opportunity to become part of Downtown Central’s story. Although I enjoyed these advantages, my
position also posed barriers; at times I felt an element of distrust from teachers who may have perceived me as a threat or possibly a district spy. Nonetheless, my position at the school enabled me to offer *thick descriptions* (Geertz, 1973) based on daily observations and to present what Bloome (1984) describes as “face-to-face interactions of every day events” (p. xv) within a school setting.

**The Professional Development Plan at Downtown Central**

In year one Professional Development sessions for the entire faculty at Downtown Central took place every Wednesday afternoon for one hour and fifteen minutes. Typically the agenda was set by the district office, but occasionally site administrators created the agenda. During my first year at this school, the year before I chose to conduct the action research project described below, the administrative team saw my role as leading the whole group sessions. My role at these meetings was to facilitate PD presentations created by the district Curriculum and Instruction department for the middle school teachers at Downtown Central who taught subjects other than math. Simultaneously a math session took place in the other half of the PD room led by the math specialist and IB coordinator. Both elementary and middle school math teachers were required to attend that session. For instance, in one session my assigned task was to demonstrate how annotating text could be viewed as an instructional strategy for close reading and at the same time could be considered a culturally responsive instructional strategy. Because of the unitary status plan (USP) mandated by the court system, previously discussed in chapter one, cultural relevance and responsiveness were both foci for many of the district-mandated sessions I was asked to lead. I also attended grade level team meetings, which for middle school teams took place for fifty minutes once a day and for elementary teachers the meetings took place twice weekly. The grade level
meetings were centered on curriculum, which at the time was a district focus. Towards the end of the school year district leadership, however, turned their focus away from a curriculum and towards building Professional Learning Communities (PLCs).

Two other circumstances contributed to my understanding of how things worked at Downtown Central. Another one of my job requirements was to attend weekly meetings with the administrative team comprised of two administrators, a coordinator for the IB program, and a math specialist. Occasionally the learning supports coordinator and one or both counselor(s) joined our leadership team meetings. This allowed me to be party to many conversations concerning teachers and to offer new ideas (e.g., the Literacy Council discussed below). One last requirement of my job was the opportunity to observe teachers teaching and provide them with feedback about their teaching. Hence, not only did I have a large degree of access, but most teachers appeared to be comfortable with inviting me in to observe. Thus the requirements of my job helped to provide me with background information on teachers and administrative support in creating reflective opportunities for the teachers at Downtown Central.

Towards the end of my first year at the school I asked the administrators to consider the establishment of a Literacy Council (Irvin, Meltzer, Dean, & Mickler, 2010) and they agreed. The purpose of a Literacy Council is to develop, implement and monitor a literacy action plan aimed at sustaining a meaningful literacy improvement initiative for all students. The idea was that the following year I would provide PD sessions to members of the Literacy Council who in turn would lead the required team meetings during the following school year 2015-16.

The Literacy Council consisted of twelve representatives: nine teachers representing grades 6-8, one representative for grades K-2, one representative for grades
3-5 and a special education teacher. The grade level team meetings (or PLCs as district leadership refers to them) are both an International Baccalaureate (IB) program requirement and (in year two of the plan) a district requirement. I facilitated the Literacy Council meetings which were held once a week on Fridays. While in attendance members were kept abreast of school business along with overseeing the literacy action plan they developed.

During the first year of its inception the Literacy Council was charged with creating a successful improvement initiative based on the school-wide action plan they developed. Much of the teachers’ time during the council meetings was devoted to learning about literacy and finding ways to enact sustaining meaningful changes in teaching literacy. The information they gleaned and constructed at the Literacy Council meetings was supposedly relayed to their grade level team members. As part of a specialist team—the IB coordinator, the math specialist and I—attended bi-weekly meetings alternating between the elementary and middle school teams. The important point here is that in this way I was able to access teachers’ concerns, understandings and thinking about teaching and learning.

Professional Development Plan for the Study

At the conclusion of year one and as a result of my insider knowledge, I set goals and objectives for my work during year two. Included in my plans for year two was to incorporate an action research project. The district and school leadership agreed and a proposal was accepted by my dissertation committee. The purpose of this section is to describe my professional development plan at the school. The next section describes the action research plan.

Goals: My goals for year two included the following:
• To extend current research and understandings of the role reflection can have on the instructional decisions of teachers regarding literacy and learning.

• To explore how effective reflection in a supportive professional development setting can help bring about teacher change.

**Objectives:** Objectives for year two included the following:

• Teachers will continue to explore the reading process with emphasis on reading and writing across the curriculum.

• Teachers will become more articulate about their beliefs about teaching and learning.

• Teachers will continue to apply literacy-based strategies in their instruction across content areas.

• Teachers will consider the reciprocal relationship between literacy and mathematics.

**Professional development focus.** The district priorities for PD sessions in the second year changed. Rather than focusing on curriculum, the focus became Culture and Climate. Additionally, the district required Professional Learning Communities (PLCs); to make time for the PLCs, the district gave up some of its control over Wednesday PD sessions. These changes made it possible for the Literacy Council to take more ownership of the professional development opportunities. Council members created a teacher-led professional development plan for most Wednesdays.

The plan, which was approved by all the faculty members, also asked teachers to participate in a minimum of three observations throughout the school year. Observations could involve either observing or being observed and could take place either as a formal peer observation or viewing and reflecting on a previously video-recorded teaching
Observations of recommended videos on the Teaching Channel involving certain instructional strategies such as collaborative grouping could also count towards the goal.

Coincidentally, at the beginning of the 2015-16 school year I was invited to attend a series of university-led professional development classes in which a cohort of elementary teachers at my site were enrolled. This class was offered to all elementary teachers and five teachers registered. This program, the Leadership Institute for Mathematics in Elementary Education (LIMES, Erin Turner, PI, Marcy Wood and Marta Civil, co-PIs and Suzanne Kaplan, Project Coordinator, 2015) focused on K-6 math practices. The LIMES project offered teachers articles to read and discuss and teachers were asked to experiment with suggested practices and to reflect on the quality of the practices. Much of the content presented to the teachers substantively overlapped with my own content goals for my work at the school. The literature revolved around mathematical practices and how mindset and mismatch affect the instructional decisions of math teachers; these are topics related to content area literacy, which was one of my goals. Hence, my professional development work and the LIMES project were compatible. Because of the overlap, components of the LIMES’ PD sessions were woven into my study.

**Participants in the professional development program.** Throughout the school year I worked with kindergarten through grade eight teachers during grade level meeting times and Literacy Council leaders. I attended the grade level team meetings in the same manner as the previous year--bi-weekly and with the specialist team. This year, however, the meetings were officially referred to as PLCs and a leader from the Literacy Council facilitated the meetings. Since elementary team meetings were only held twice weekly...
and did not all include Literacy Council members on the grade level teams, the three elementary leaders on the Literacy Council facilitated after-school meetings bi-weekly.

Two members of the Literacy Council, Summer and Autumn, were particularly interested in presenting topics brought up in their LIMES class to leaders who served with them on the Literacy Council. The series of presentations that the third and sixth grade teachers co-created offered strategies (i.e. the concept of complex instruction, Cohen, 1994) they learned about in the LIMES class to assist both elementary and middle school teachers in combating the achievement gap at Downtown Central

Each Friday morning before school I met with the twelve literacy leaders along with the IB coordinator and principal. The following week, leaders were expected to share with their grade level team members any school business matters, literacy strategies or resources shared with them the previous Friday. In turn, during grade level team meetings leaders not only shared, but also received feedback from their team members and identified teachers to lead Wednesday PD sessions. Thus, through this cyclical process the entire faculty was included in the Professional Development plan.

Professional development resources. Resources included two types: first, I relied on empirical literature to provide new relevant information for the teachers and second, teachers produced videos of their practices to be shared with their colleagues. The following empirical resources were provided:

- Fast kids, slow kids, lazy kids: framing the mismatch problem in mathematics teachers’ conversations (Horn, 2007)
- Promoting ‘relational equity’ and high mathematics achievement through an innovative mixed-ability approach (Boaler, 2008)
I planned to either video or audio record four PD sessions (two for the third grade teachers and two for the sixth grade teachers). The sessions were designed to elicit reflective discussions centered on: 1) an article(s) or a particular chapter or section in a book or a combination of both or 2) an observation of one of the participant’s video-recorded teaching sessions. This format served two purposes: a) on the basis of teachers’ discussions, I was able to choose additional resources to incorporate in my plans and b) the discussions provided data for the action research study (described below). For instance, in response to the statements extracted from Jenna’s dialogue for our grade-level team PD meeting I selected Boaler’s (2008) article about mixed ability grouping. I did this in order to build on the concepts being developed in the LIMES class and to provide what I hoped was relevant and meaningful literature to share in hopes of strengthening teachers’ theoretical orientations and strategies.

**Teacher produced videos.** Members of the LIMES cohort were required to video-tape one another and then to participate in peer observations. Videos were taped and uploaded into a Swivl Cloud™ where the teachers could preview their own teaching and in turn upload the video observations to the GoReact platform in order to share the
content with one another. Once the videos were transferred to GoReact, teachers’ observational comments of one another could be typed and saved. As described in the next section, I used the GoReact materials as data in my study. Topics discussed during these sessions included strategies that cohort members were using during video-taped sessions of their teaching (e.g., collaborative grouping, status, participation quizzes and ordering numbers). Because I was also asked to assist with many of these video-taping sessions, the use of the Swivl app was also incorporated into my own video recordings for my action research.

**Logistics.** My planning took into account the two types of meetings, both grade level team meetings and Literacy Council meetings. Weekly leadership meetings held on Mondays included time for me to discuss possible topics with administrators and the other specialists. From these discussions I created an agenda for the Literacy Council meeting that took place on Friday mornings. The twelve-member council and leadership attended the meetings which included school business topics, action plan topics, planning for teacher-led PD modules along with embedded literacy strategies to be shared in their grade level meetings (or PLCs). Council members were responsible for maintaining grade level meeting topics and to ensure teaching observations were taking place.

Part of the logistics for this project was video taping of the teachers teaching. Two kinds of video-taping took place nine classroom observations that were video-taped using the Swivl and three videotaped LIMES teaching sessions that were uploaded into GoReact in order to comment on the videos. These taping took place from September through February throughout Phases II and III. Video-taped classroom observations occurred on pre-determined dates. Usually teachers would invite me to attend the class
and assist with video-taping or to take field notes. A Swivl tripod provided by the LIMES participants was available to any teacher interested in recording a teaching session. The tripod attached to any smartphone. Once the Swivl app was downloaded to that cell phone, any teacher who wished to record their teaching could use the phone to do so; the tripod was not necessary to actualize the recordings. Also, a small microphone attached to a lanyard slipped over the neck of the teacher. Not only did the microphone record what the teacher said, the smartphone tracked the microphone so that the video recorder followed the teacher. These sessions were then viewed in our next scheduled team meeting (PLC) time. In turn, reflective conversations regarding the classroom video recordings took place during PD, which were likewise recorded. Ideally reflective conversations took place the following day after the teaching observations were recorded. The videos uploaded into GoReact were also used for PD purposes among cohort members and their instructors. For teachers participating in the LIMES project, a sub was provided once per semester to allow for peer observation and video recordings. This procedure was, however, not the standard practice conceptualized for this project.

**Summary**

This section described the professional development program. The description included the goals, objectives, resources and logistics. This professional development program provided the setting for the study described below. Drawing from Richardson’s and Anders’ RIS study (1994), which incorporated a reflective PD program in lieu of the top-down structures that typically exists, I created the plan described above to give practitioners opportunities to reflect on their instructional decision-making and for me to
investigate the relationship between reflection and professional development. The plan for my action research is described in the following section.

The Research Plan

Given the context of the professional development described above, I planned an action research project to answer the following:

- What is the role of reflection in teachers’ instructional decision-making?
- What is the relationship between reflection and professional development?

The design for this study is an instrumental case study. The following sections describe an instrumental case study, participants, data collection, and analysis.

An Instrumental Case Study

According to Stake (1995) an instrumental case study is used when there is a “need for general understanding” and a feeling “that we may get inside the question by studying a particular case” (p. 3). In my inquiry, the case (four teachers at Downtown Central) was instrumental in helping me to learn about the process of reflection and the relationship of professional development and reflection. Pseudonyms will be used in the following sections to describe the third and sixth grade collaborative teams selected for my study at Downtown Central (also a pseudonym).

Teacher Participants

I selected grade 3 and grade 6 teachers as the focus participants for the following reasons. First, according to Move on When Reading legislation (Arizona Revised Statute 15-701, 2014) third graders in Arizona are subject to repeating grade three if data on the state assessment indicates a student’s performance ‘falls far below’ in reading. Second, like many traditional middle school sites, sixth graders at Downtown Central are required to move from one content class to another based upon a rotating bell-schedule. The
majority of sixth grade students, whether they come from the Primary Years Programme (PYP) at our site or another district school, come from a self-contained environment in which one teacher is responsible for delivering instruction for multiple content areas. Thus, not only are students transitioning from a relatively nurturing environment, they are also faced with increasingly difficult content specific texts (Lee & Spratley, 2010).

The four participants in this study include two primary informants and two secondary informants. First, I explain how the two primary and secondary informants were selected. I then describe each of these informants in terms of the teaching teams of which they are members.

Two primary informants were selected in July prior to the start of school. Based upon a teaching background questionnaire, field notes and informal classroom observations conducted the previous 2014-15 school year, I selected two teachers--Jenna Jenkins (grade 6) and Summer Stephens (grade 3) as primary informants. One of my selected informants (Summer) was part of the Leadership for Mathematics in Elementary Schools (LIMES, Turner, E. et al, 2015) cohort along with her grade level partner; hence, I invited him (Troy) to participate as a secondary informant and he consented. Then, to be parallel, I also invited a sixth grade teacher, Autumn, who was also participating in the PD program and was a teaching partner with Jenna, my 6th grade primary informant. All four teachers appeared to struggle in some way with pressures to conform to district and state mandates, assessment requirements, and adherence to the IB philosophy.

**Third grade teacher informants.** Summer Stephenson, a primary informant, holds a Master’s degree in Elementary Education and a K-8 reading endorsement. She received her bachelor’s degree at the University of Arizona and her master’s degree at
Northern Arizona University. This year is Summer Stephenson’s second year of teaching third grade and her fourth year teaching at Downtown Central. She was learning a new interdisciplinary curriculum, required to teach standards in a variety of disciplines (e.g. math, reading, social studies and science) and openly questioning state requirements for third graders to pass the state reading assessment, Move on When Reading. Over the course of the past nine years she has also worked as a middle school reading interventionist and a special education teacher. While employed at Downtown Central, she has attended International Baccalaureate (IB) trainings, Fountas & Pinnell Leveled Literacy Intervention workshops and Move on When Reading district trainings. Summer is also a member of the Literacy Leadership Council. One of her future goals is to attain National Board certification in teaching.

Troy Johnson, a secondary informant and third grade team member with Summer, graduated from the University of Arizona with a major in elementary education. At the time of the study, Troy was in his third year of teaching at Downtown Central. He had taught second grade for one year at another K-8 site in the same school district. Troy has participated in Fountas and Pinnell Leveled Literacy Intervention workshops and facilitated the district’s quarterly benchmark assessments at Downtown Central throughout the school year.

**Sixth grade teacher informants.** Jenna Jenkins, a primary informant, has taught for over twenty years. This is her fourteenth year of teaching at Downtown Central. During the time of my study, she taught a sixth grade block of language arts and social studies courses—-or in IB terms, “Individuals in Society,” twice daily. Additionally she led the student leadership and service class offered to an array of sixth, seventh and eighth graders. This class was created to afford students with recognizable leadership
qualities the opportunity to participate in service and learning projects. Recently she participated in a Fred Jones workshop on classroom management, Fountas and Pinnell Leveled Literacy trainings, and a workshop geared towards earning a GATE (Gifted and Talented Education) endorsement. Over the years Jenna has voluntarily enrolled in several literacy workshops I have led for the district. She was selected as a member of the Literacy Leadership Council at Downtown Central, but due to her mother’s declining health has not been able to fully participate this past semester. Instead she deferred her position to her grade level teammate and a secondary informant in my study, Autumn Sanders.

I selected Jenna the sixth grade primary informant, who taught a block of language arts and social studies, because of the conflicts she faced on her grade level team. She and her teaching partner, Autumn, who taught a block of math and science, shared the same group of students. During my first year at Downtown Central, I was intrigued by their struggles to create interdisciplinary units. While the IB philosophy promotes interdisciplinary thinking, Jenna preferred to keep each subject-area that she taught separate and resisted the idea of blending her classes. Autumn, Jenna’s teaching partner, was more successful in her attempts to combine math and science, but the interdisciplinary units they produced together were never fully implemented.

Autumn Sanders, a secondary informant, taught a block of science and math to the same sixth grade students to whom Jenna taught social studies and language arts. Autumn has intermittently taught grades six through eight for eight years. She holds a Master’s degree in Mathematics Education and Leadership from the University of Arizona along with a middle school math endorsement. During the first five months of the study she and Jenna met daily as a team. However, Autumn was also transitioning
out of the regular classroom into the math specialist position at Downtown Central. Thus their meetings were less frequent during the second semester of the study. Still, Autumn’s position has allowed her to continue to collaborating with her former teaching partner. Since moving to Downtown Central four years ago, Autumn has diligently worked towards attaining her math specialist position. Last year she worked in tandem with the IB program coordinator to facilitate the Professional Development focused on the new Common Core Math Standards for grades K-8. Ms. Sanders is interested in social justice issues in mathematics classes.

These four teachers were the informants for the instrumental case study. As is described below some of the data collected from the primary informants was different from the data collected from the secondary informants.

**Data Sources and Collection**

Data collection took place from July 2015 through February 2016. The data were collected in three overlapping phases. Table 3.1 displays the three phases of data collection and analysis. Data collection is described in this section and analysis of the data is explained in the next section.
Three Phases of the Study

In order to ascertain primary informants’ Summer’s and Jenna’s beliefs, two types of data were collected during Phase 1: 1) the Teacher Belief Interview Protocol (Richardson, 1994) and 2) a teacher belief survey (Woolley & Woolley, 1999). The approximately one hour Teacher Belief Interview (see Appendix A) was conducted with
each primary informant at the onset of the school year. The interview questions were designed to elicit teacher beliefs regarding learning, instruction, and reading comprehension. Additionally participants were asked about their teaching background, personal reading habits, the school at which they taught, and the students they served. The questions were heuristic and allowed for probing. For instance when the interview stalled, I could insert a statement such as “Tell me more” in order to probe for or elicit additional information. Each interview session was audio-recorded. The open-ended questions allowed for personal beliefs (those associated with knowing-in-action) and public beliefs (those attributed to theoretical, or academic, orientations).

In addition, a multiple choice belief survey was administered to both informants. While Richardson (1994) cautions questionnaires such as these allow for researchers to pre-determine “categories of beliefs or theories” (p. 96), Woolley and Woolley (1999) developed the survey to be used in conjunction with other methods such as observations and interviews. Woolley and Woolley’s intention was to document college students’ beliefs when they entered the teacher education program, to study how pre-service teachers’ beliefs changed throughout their university coursework, and to describe how their beliefs evolved further into their actual teaching careers. Hence, the survey was originally developed for use with both pre-service and in-service teachers. Realizing some teachers employ behaviorist management techniques but concurrently reported possessing constructivist beliefs, the survey questions (see Appendix B) were organized into four categories: Behaviorist Management (BM), Behaviorist Teaching (BT), Constructivist Teaching (CT) and Constructivist Parents (CP). Thus, the use of the survey
in Phase I represented a second type of data for predicting the beliefs of the primary informants.

Data collection in Phase II involved conducting classroom observations of the primary informants, and collecting the beliefs survey from the secondary informants. Field notes were taken to record my observations in the informants’ classrooms. Over the course of the semester I observed Summer’s classroom ten times and Jenna’s classroom four times. My observational field notes included descriptions of a lesson, the structure of the lesson observed (e.g., whole group, collaborative groupings etc.), my estimation of student engagement, and observations of classroom management, seating arrangements, the literacy or math strategy employed, and/or dialogue of students and teacher. I also collected photographs and wrote researcher memos after the observation. In addition to the classroom observations, I also video-recorded each primary informant’s teaching twice and uploaded the recordings into the Swivl Cloud™.

Secondary informants were invited to participate in the study during Phase II. I administered the Woolley and Woolley (1999) belief survey to Troy Johnson (third grade) and Autumn Sanders (sixth grade) to gain a sense of their behaviorist or constructivist orientations.

One video recording of each secondary participant’s teaching was also collected along with GoReact teacher comments pertaining to each lesson. GoReact, a digital workspace, allowed teachers to critique a mathematical practice such as a grouping strategy they were learning about in their university-led class. The forum provided teachers with an opportunity to reflect on their teaching and provided me with the opportunity to collect their reflections, including practical reasoning statements, which I
used later during analysis by comparing what they were saying with what they were
doing. In February, classroom observation videos were again collected from each
participant in the LIMES project (Summer, Troy, and Autumn).

I also collected a GoReact recording of Summer teaching a math lesson along with
the comments her colleagues wrote in response to her teaching. Summer’s video explored
the topic of student status, Troy’s video explored number ordering and Autumn taught a
lesson involving role cards and student grouping strategies. The digital workspace,
GoReact, allowed teachers to critique a mathematical practice such as a grouping strategy
they were learning about in their university-led class.

Throughout Phase II and Phase III, I collected data from four professional
development grade level team sessions (one Swivl video and one audio Voice session per
team). The plan for these PD sessions (described in section one of this chapter) included
discussions stemming from the list of literature also mentioned above or from video-
recordings of their teaching. Additionally, Summer and Autumn participated in three
additional audio PD reflections. These sessions were requested by the participants and
also served as member checks (Merriam, 2009) to help ensure internal validity for the
study.

Lastly, data collection in Phase III included re-administering the Teacher Belief
survey (Wooley & Wooley, 1999). The data sources I collected throughout the three
phases appear in Table 3.2

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<td>---------</td>
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<tr>
<td>Interviews/Surveys</td>
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During the first phase of the study, I began organizing and analyzing data in early September. Jenna’s and Summer’s belief interviews were transcribed and analyzed.
Similar to Richardson’s (1994) approach, analysis involved reading and re-reading the transcriptions to allow for “teachers’ theories to emerge from open-minded reading of the transcripts” (p. 98). Based upon the interviews, I constructed a concept map which continued to evolve throughout the course of the study. The original concepts I uncovered were: perception, conflict, collaboration, pressure, core beliefs, contradictions, and goals. Next, the transcribed interviews were uploaded into the data analysis program NVivo 11. The program assisted in organizing, coding and cross-referencing the emerging themes. I looked for patterns within the transcriptions that revealed individual’s belief statements towards teaching and learning. From this analysis, I began to formulate predictions about Summer and Jenna’s beliefs, particularly as to the source of meaning: that is, the extent to which each believed that meaning is derived from the text or meaning is in the reader as she transacts with the text. This question was asked by Richardson (1994) and she reported that teachers’ beliefs about the source of meaning usually fell on a continuum between the text and the reader. I continuously drew from this data in search of what Merriam (2009) refers to as “more and better units of relevant information” (p. 182).

During Phase One, responses on the belief surveys were analyzed for each of the primary informant teachers. The survey questions developed by Woolley and Woolley were organized by them into four categories: Behaviorist Management (BM), Behaviorist Teaching (BT), Constructivist Teaching (CT) and Constructivist Parents (CP). Respondents answered a 5 point Likert Scale with 1 representing strongly disagree and a 5 representing strongly agree.

I chose not to include the participants’ responses to the fourth category, Constructivist Parent (CP) for two reasons: 1) the CP questions were designed to elicit
beliefs of teachers concerning parent participation in the education of their children and were not relevant to my research questions and 2) Woolley and Woolley (1999) discussed limitations of their study which included their conclusion that those particular questions were less reliable than those in the other categories. Lastly in order to provide what Woolley and Woolley (1999) refer to as a “substantive analysis” (p. 6), I eliminated four additional misleading questions that they deemed unreliable in their development of the survey. Thus, in Phase One I analyzed the surveys of each primary informant focused on the BT, BM and CT categories. These results were considered along with the belief interview to begin to develop a sense of their beliefs or theories about teaching and learning. Analysis of the selected items involved the following steps: I created a chart displaying

- the question number,
- the category the question fell into (BT, BM or CT),
- columns displaying the informants initials with their Likert scale responses,
- an additional column for each teacher’s Phase III survey responses.

Later in Phase II the same process was used for analyzing and making predictions as to the theoretical stances of the secondary informants (see Table 3.3).

Table 3.3 Excerpt from Survey Analysis Chart Created in Phase I and Phase II

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During Phase II the audio and video-taped sessions (six classroom observations and seven grade level team meetings) were listened to and viewed. Sections pertaining to my research question concerned with the role reflection plays in the instructional decision-making of teachers were selected for transcription and then analyzed. Analysis of the transcriptions began with selecting practical reasoning statements made by the teachers. For example, during a classroom observation (Swivl video recording, 12/11) Jenna told her students, “Now, two things…One, I want you to have your answers filled out. Two, I would like you to practice talking to each other about what you think. And three, I also want you to practice backing up what you think.” Jenna added, “The bottom line is I would like all of your boxes filled in by the time we are done.” This remark indicating the importance that all of the boxes should be filled in was consistent with the behaviorist core beliefs extracted from her interview administered during Phase I. When asked “How is teaching reading different from teaching math or teaching science or social studies?” Jenna responded

I don’t think it’s different from teaching math because you build from one level to the next. You’re constantly building on what you’ve already learned. I could make an argument that it’s not different from teaching science or social studies either because again it’s all about the reading strategies and do you have a toolbox full of strategies and do you use them. And I’m constantly reminding them what reading strategies did you use? Did you code? Did you talk to the text? Did you
re-read? Did you check with the dictionary? Did you—which ones did you use? I mean there’s just a whole toolbox. I could go on and on.

This argument was coded as a core belief indicating a behaviorist orientation.

I then searched for and extracted practical arguments recorded in the classroom observations, field notes or PD sessions that pertained to either behaviorist or constructivist theoretical stances of the teachers. The materials were organized by teacher and analyzed for consistency across the data sources. For example, another practical argument Jenna made during a PD session in Phase II she stated

Working with the seventh and eighth grade teachers in past years with the Individuals in Societies [the IB term for social studies], I literally would take what [two other social studies teachers at the site] were doing and try to bring it to 6th grade and fall flat on my face. [I realized] well okay my kids are not cognitively ready for that. So, I had to kind of back it off and go back to baby steps and let them build up to that as they progress [from] 6th grade to 7th and 8th grade.

By comparing the episodes Jenna’s belief that learning is hierarchal (a behaviorist belief) seemed consistent with her interview and classroom observation statements. Jenna’s overall survey information, however, indicated she likewise possessed constructivist beliefs. Inconsistencies such as this led me to then look for belief statements in my field notes, video recording of classroom observations and PD sessions that supported or disconfirmed theoretical stances. I did this same procedure (comparing interview and/or survey information with observation data) for each teacher in search of their behaviorist or constructivist beliefs along with any discrepancies that existed. Any discrepancies were coded as contradictions.
In a similar fashion, I used this same method to extract practical reasoning statements from comments the LIMES teachers made on a teaching demo produced by a member of the math cohort during Phase II of the study. While I had access to comments made by all of the cohort members, my focus was on the responses of participants in my study. I viewed the LIMES PD recordings, which consisted of both a video observation and the GoReact comments of teachers’ responses to the videos. Throughout the comments, I searched for statements which unveiled a theoretical stance a teacher seemed to be drawing from.

Constant comparisons with what the primary informants’ said in their initial belief interviews and surveys along with what they said and did in their classroom teaching and grade level team meetings allowed me to look for shifts or discrepancies in beliefs throughout the three phases. Data analysis in Phase II also included organizing and coding the survey data collected from the secondary informants, Troy and Autumn. Their belief surveys, classroom video recordings and team meeting recordings (PD sessions) were analyzed following the same procedures as described above for the primary informants.

During Phase III, video and audio recordings of teachers teaching, teacher discussions, and the professional development sessions were reviewed and sections pertaining to how teachers were reflecting in practice and on practice were transcribed. Hence, my analytical purpose changed from looking for tendencies in practical arguments to the consistency and coherence between what a teacher says she believes and what she actually does in the classroom. By examining the reflective dialogue of grade level teams (Jenna/Autumn and Summer/Troy) over time, I looked for the use of reflection and/or
changes in instructional practices. For example, the following is an example of Autumn’s reflection during a PD session in December,

One of the essential agreements that day was you’re not done [until] everybody’s done and everybody understands…this shows some progress that was made in my classroom. There’s still more work to be done but you can see that the students are talking to each other about the math and talking about the strategies that they used.

In Autumn’s case, her reflective statement on her practice suggests she is pleased with the progress her students are making but recognizes there is still room for improvement in attaining her goal of using group norms as a collaborative grouping strategy.

Statements such as this were collected from all four teachers. I then created analyses charts for displaying the relationships between what the teacher says and what the teacher does. The charts included three to five belief statements from each teacher from a variety of data sources that were matched with the type of reflection in or on their own teaching action along with my analysis of that action. Support documents such as the role card strategy and photos of how students used the strategy were used to back-up and explain my analysis of the teaching reflections.

Phase III included analyzing the Teacher Belief Survey (Woolley & Woolley, 1999) that was re-administered to all four teachers. I again eliminated the unreliable questions as discussed above, and then analyzed each teacher’s responses. I then returned to the chart constructed in Phase I and placed the post survey data in the chart (see Table 3.4)
Table 3.4 Excerpt from Survey Analysis Chart (Phase III)

<table>
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<tr>
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<th>TJ</th>
<th></th>
<th>SS</th>
<th></th>
<th>JJ</th>
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<tr>
<td></td>
<td>Pre</td>
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<td>Pre</td>
</tr>
<tr>
<td>1. BM</td>
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<td>2</td>
<td>1</td>
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</tr>
<tr>
<td>2. CT</td>
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<td>4</td>
<td>5</td>
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<td>3. CT</td>
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<td>4</td>
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<td>4. CT</td>
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<td>4</td>
<td>3</td>
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<td>1</td>
<td>3</td>
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<tr>
<td>5. BT</td>
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<td>2</td>
<td>2</td>
<td>2</td>
<td>4</td>
<td>3</td>
<td>4</td>
</tr>
</tbody>
</table>

Hence, there were 8 belief surveys, 4 were collected early in each teacher’s participation in the study and 4 were collected late in their participation. I averaged each teacher’s responses to each type of question. I averaged so as to have a more complete picture of each teacher’s beliefs. Autumn Sanders offered a helping hand in the analysis and cross-checked my findings. To interpret these averages, I then created a belief continuum ranging from strongly disagree to strongly agree and placed each teacher’s ranking from behaviorist to constructivist tendencies in three areas: Constructivist Teaching (CT), Behaviorist Teaching (BT) and Behaviorist Management (BM).

In sum, the analysis of data throughout the study included extracting reasoning statements from surveys, interviews, classroom and PD session observations. The data selected for transcription showcased 1) practical arguments that exemplified incongruence between what a teacher said and did; 2) teachers’ reflective statements that illustrated similarities and differences between reflecting in practice and reflecting on practice; and 3) tendencies of each teacher towards behaviorists and constructivist beliefs.
Concept Map

The themes in the original concept map—perception, conflict, collaboration, pressure, contradictions, and goals—that emerged were continuously revised throughout the study. The concept map—a construction of my interpretations—continued to evolve from my analysis of the interviews, surveys and teacher observations in their classrooms and in professional development settings. Cross-references and comparisons were made continually throughout the three phases; these analyses led to modifications to my original concept map. As the concept map developed over time it came to depict the inquiry cycle of choose, act, reflect which illustrated the instructional decision-making cycle of a teacher including conflicts that can interrupt the cycle of knowing and reflecting in and on one’s practice (see Figure 3.1).

Figure 3.1 Instructional Decision-making Cycle
Supportive Data and Trustworthiness

Throughout all three phases, I employed peer review so as to increase the trustworthiness of my study. On several occasions the IB program coordinator participated in team meetings and/or reflection time with me following grade level PD sessions. Her voice can be heard in several recorded sessions. In these reflective conversations I would discuss my thoughts and interpretations; and in turn my peer would either affirm or disaffirm my thinking. This process not only helped me at the time of the discussions, but later when I was transcribing and analyzing various PD sessions the reflective conversations allowed for consideration of another perspective. One such session (Voice 2 audio peer view) appears as a support document in Table 3.3.

Triangulation was employed to compare and cross-check data on a continuous basis throughout the three phases of the study. For instance, I compared practical argument statements transcribed from classroom observations with interview and survey data. These belief statements were then placed in a comparison instrument of ‘what the teacher said’ with ‘what the teacher did’ to check for consistency with belief statements in the interview/surveys and classroom or PD observations. Also, the evolving concept map was shared with several participants to validate my interpretations to ensure cross-checks in understanding with several members of the study. This procedure affirmed what Merriam (2009) describes as perception or interpretation that ‘rings true’ (p. 217).

Summary

This chapter describes the professional development plan I created, the informants who participated in the sessions, the setting in which the study took place and the procedures and methods I used to investigate 1) the relationship between reflection and
the instructional decisions a teacher makes regarding literacy and learning and 2) the role
reflection plays in professional development. I conceptualized data collection and
analysis in three phases.

In order to assist teachers in resolving conflicts that plague them, I designed a
series of PD sessions centered upon reflection. The PD sessions took place during their
regularly scheduled grade level team meetings at Downtown Central, an urban K-8
magnet school located in the Tucson Unified School District in southern Arizona.
Primary informants were initially selected in Phase I and secondary informants were
chosen in Phase II. The data collected throughout the three phases included:

• a teacher belief interview for primary informants
• belief surveys for primary and secondary informants
• records of instructional materials, lesson plans, participation quizzes
• seating arrangements
• field notes/ photographs from classroom observations
• researcher memos
• audio and/or videotaped classroom interactions
• audio and/or videotaped PD sessions
• field notes and artifacts from PD sessions
• GoReact observation videos filmed among peers in LIMES cohort
• Peer observation comments posted on GoReact videos

Data analysis took place over three phases. In Phase I the interviews of primary
informants were transcribed and coded, their belief surveys were analyzed for behaviorist
and constructivist tendencies. Field notes, including photos and diagrams of classroom
settings, were analyzed and compared to the initial interviews and surveys of the primary informants. From this analysis a concept map emerged of related themes. In Phase II a survey, identical to the one previously used with the primary informants, was administered in order to predict the constructivist vs. behaviorist tendencies of the secondary informants. Data analysis included viewing and reviewing video and audio recordings of classroom observations and selecting pertinent sections regarding my research question regarding the relationship between reflection and their instructional decision-making process. This information was recorded in an observation instrument displaying relationships between what a teacher said and what a teacher did. I then triangulated the data between the primary informants’ interviews, surveys and observations. Data analysis from the second phase also included the organization and coding of the survey data collected from the secondary informants.

In the third stage of my study pertinent sections from classroom and PD sessions regarding my research question regarding the relationship between reflection and professional development were transcribed and analyzed. Phase III also included organizing and coding post-survey responses from all four teacher participants. Pre and post survey comparisons were made and then, mean scores were averaged in order to place teachers on a belief continuum representing tendencies in behaviorist teaching, behaviorist management and constructivist teaching. The findings from these analyses are presented in the following chapter.
CHAPTER 4. COMBATING CONTRADICTIONS

PRESENTATION OF FINDINGS

“...the researcher’s purpose is not merely to organize data but to try to identify and gain analytic insight into the dimensions and dynamics of the phenomenon being studied. That is, the goal is to understand how the phenomenon matters from the participants in the ‘case.’”

--Dyson & Genishi, 2005, p. 81

This study officially began in July of 2015. After a thorough casing of the joint (Dyson & Genishi, 2005) I began the process of “partaking in the richly brewed particulars” (p. 2). Armed with my trusty iPad, reflective journal, sharpened pencil, and cell phone I began collecting data both inside and outside third and sixth grade classrooms. Intent on teasing out the tangled issues between beliefs and instructional practices I narrowed my focused on: 1) how the core beliefs of a teacher may influence his or her instructional decisions regarding literacy and learning and 2) how to help teachers develop more coherent and consistent beliefs. This study is an investigation of how reflection relates to instructional decision-making and professional development. Since reflection is about teachers’ beliefs and professional development opportunities can provide time for such reflection, I asked:

- What is the role of reflection in teachers’ instructional decision making?
- What is the relationship between reflection and professional development?

To introduce the teacher participants, I first present selected episodes in which the participants reveal their beliefs; interspersed in the episodes is my interpretations of the episodes (which further explain findings from other data sources). After the episodes, I present findings related to the core beliefs of teachers regarding literacy and learning
including their pre and post belief survey data and placement on a continuum of beliefs. The types of conflict (internal, external and a combination of the two) teachers encountered are discussed along with the types of reflection (both in and on practice) each teacher used in their instructional decision-making process. The second section of the chapter discusses the critical role reflection has in professional development for teachers. Findings discussed include the reflective thinking (in and on actions) of teachers that transpired during PD sessions. The types of teacher talk used in the reflections are then used to describe how the teachers moved throughout the dimensions of reflective thinking. The final section revisits my research questions and presents findings for both.

**Episodes Introducing Participant Teachers and Their Beliefs**

The four informants, two primary and two secondary, are described below through their own words with brief descriptive synopses inserted before and after each episode. The episodes are representative examples of each teacher’s beliefs about literacy and learning; these episodes serve to create a composite picture of each. In addition, then episodes are referred to when presenting findings throughout this chapter. Analyzed data sources used for these episodes include the following: for the primary informants, the initial beliefs interview was analyzed (in the presentation of the episode, the question I asked is indicated by Q and the informant’s answer is indicated by an A) and for the secondary informants, field notes were used.

**Summer Stephenson, Third Grade Teacher, Primary Informant (Phase I)**

Summer wears her emotion on her sleeve. She is perplexed by contradictions in her own beliefs regarding assessments and the policies of the district and the state. Her
nine and one-half years of teaching experience place her on a continuum close to expert, which according to Allen and Caspergue (1996) is ten years. The idea that her students will have to repeat third grade if they cannot pass the state assessment is both a conundrum and a contentious subject for her. Several times the mere mention of any district benchmark or the state assessment during our reflective conversation time brought a tear to Summer’s eye. The following episode showcases the conflict Summer is experiencing with regard to students who the district has identified as summer school candidates or slightly behind in reading.

**Episode 4.1 Belief interview (Phase I).**

A: I do think the majority of my kids were [mis-]identified at district level as the ones [who should be] going to summer school or identified as vulnerable readers. [However,] my data looked very different from their data and [I believe] they’re [my students are] going to be okay if school doesn’t totally disengage them and push them away.

Q: So let’s change gears and think about a student who is just slightly behind [in reading]. How do you see yourself assisting or helping a student who is just on the cusp I suppose?

A: Well, there’s the skill stuff. But I think that even bigger than the skills is the identification I mean of that motivation, that identity as a reader even if it doesn’t come super easy. I feel like I worked really hard [with]…kids identified by district levels based on DIBELS as having reading issues--they’re just a little behind …where they should be and maybe choppier than they should be or, you know?
Q: Right?

A: [The students were] not as fluent as they [the district] would like them to be. But, I worked on identity with those kids and really giving them a little bit [more] control over their learning and their choice of what they wanted. That was important for them. Giving them something that they thought was boring was really detrimental to their progress.

Conflict is evidenced in Summer’s belief that her data is quite different from the district’s data. Summer fears the process of schooling may actually push students toward failure rather than toward success. She expresses that students’ motivation, identity and interest are more important for student success than reading level indicated by state or district scores. She recognizes skills and fluency (progress indicators on benchmark and district assessments) are part of the reading process, but points out that the progress of a student is more importantly dependent on a student’s identity as a reader. Summer also believes providing students with choice and voice are more important than focusing on skills and fluency. She believes that not allowing for interest can be “detrimental” to students and labeling them as below grade level can “push them away” from school.

Summer’s connection between disciplinary literacies in math and reading provide another area of contention for the middle school teacher turned elementary. A connection Summer made early on in the study is evident in the following episode where she explains math is not a series of algorithms, but is instead conceptual.

**Episode 4.2 Belief interview (Phase I).**

Q: How is teaching reading different from teaching math?”

A: Hum. Well, I don’t think it’s that different.
Q: Okay. Why?
A: Because there’s a lot of language in math.
Q: Okay…?
A: I think there is this idea that math is just doing these algorithms but it’s not. I mean to really understand the concepts in math you have to use the same process that you might use with a piece of text to tear it apart and put it back together. You know, you can look at numbers and you have to make connections somehow and try to figure out what you already know about those numbers and you’re using these reading strategies that we call reading strategies, they’re thinking strategies I mean really, you know, you’re using prior knowledge, you’re finding connections, you have fluency in math, you—you know, there’s vocabulary in math. So I don’t really think it’s that different. And that’s an area that I’m really interested in because when I taught kids who struggled with math I feel like it’s the language that gets in the way in math and not feeling confident in those thinking strategies.
Q: So well, in terms of social studies or science do you feel the same?
A: Yeah. I mean even—I feel like math may on the surface seem the most different.
Q: But it’s not really?
A: No.

Summer relates the process used in math as similar to the process “you might use with a piece of text to tear it apart and put it back together.” Her references include equating reading strategies to thinking strategies and the use of prior knowledge and connections in reading to math. Furthermore, Summer recognizes the importance of
language in both subject areas. These episodes suggest that Summer’s core beliefs reflect constructivist theories; her beliefs however are in stark contrast with the other primary informant, the sixth grade teacher Jenna Jenkins, who is showcased below.

**Jenna Jenkins, Sixth Grade Language Arts and Social Studies Teacher, Primary Informant (Phase I)**

Jenna Jenkins’ beliefs about teaching are evident in many of her twenty-year veteran teacher accounts. Her in-service experience would place the sixth grade teacher on the expert, ten to thirty years (Allen & Caspergue. 1996), end of the continuum between novice and expert. Her narratives often provide reasoning statements as to why she does what she does. Through story Jenna often reveals much about her beliefs and approaches to teaching. The following episodes, transcribed from her initial interview, indicate some discrepancies in her beliefs. Furthermore, classroom observation confirmed that her actions and belief statements were contradictory.

**Episode 4.3 Belief interview (Phase I).**

Q: So let’s think about a student now who is just slightly behind in reading but not a real problem. What would you do to help this student?

A: The same thing. Continue to build that relationship and try to, you know, bottom line is if they don’t feel comfortable with me and they’re not comfortable in my classroom they’re not gonna take risks and I’m not going to be able to better find out where they’re having difficulty.

Q: So if they’re just slightly behind describe that student. What would that mean?

A: They might have a little bit of trouble with vocabulary. They’re not comfortable reading out loud because they might not be able to pronounce the words correctly.
I have a student right now who her mother feels she’s a really good reader but she is embarrassed to read out loud, she’s afraid of making mistakes. So maybe they don’t test well. This young lady, when we had a one-on-one session, she read beautifully and understood exactly what she was reading but when she took the reading placement test she was at 3.7 (more than two years below grade level).

As suggested by this interview excerpt Jenna is more concerned about relationships with students than ways to approach teaching and learning. On the surface her beliefs regarding relationships echo Fenstermacher and Soltis’ (2009) facilitator approach to teaching. Jenna’s awareness of her students and her desire to build relationships is central to her belief system. However, her resistance to finding the root issue as to why a student is having difficulty reading is tied to the student’s trust in her as a teacher, rather than her trusting the child to make connections between the social world and the academic world, or what her various observations of the student reading, or the various benchmarks and or the reasons for a child being a less than successful reader. To Jenna, relationships appear to be valued more than learning. The following excerpt offers another glimpse into Jenna’s belief system. Here she describes how reading differs between content areas.

**Episode 4.4 Belief interview (Phase I).**

**Q:** How is teaching reading different from teaching math or teaching science or social studies?

**A:** I don’t think it’s different from teaching math because you build from one level to the next. You’re constantly building on what you’ve already learned. I guess I could make an argument that it’s not different from teaching science or social
studies either because again it’s all about the reading strategies and do you have a toolbox full of strategies and do you use them. And I’m constantly reminding them what reading strategies did you use? Did you code? Did you talk to the text? Did you re-read? Did you check with the dictionary? Did you—which ones did you use? I mean there’s just a whole toolbox. I could go on and on.

Jenna recognized the importance of reading strategies, but did not link the use of strategies across the content areas. Instead, in this episode Jenna states, “I don’t think it’s (reading is) different from teaching math because you build from one level to the next. You’re constantly building on what you’ve already learned.” Jenna seems to view reading and mathematical learning as hierarchal rather than conceptual, a belief that is linked to behaviorist theory. This notion comes to light again in Episode 4.7 (below) when a conversation between Jenna and Autumn is presented and describes the nature of mathematical and reading learning further.

**Troy Johnson, Third Grade Teacher, Secondary Informant (Phase II)**

Troy Johnson is in his third year of teaching and the only elementary male teacher on campus. According to Allen and Caspergue (1996), Troy’s teaching experience is considered intermediate (between one to ten years of experience). While Allen and Caspergue referred to novice teachers as those in their first or second week of actual teaching, Troy is still considered a young teacher by his peers at Downtown Central. The following excerpt is from one of our early PD sessions which transpired after reading Boaler’s (2008) article and comparing it to Lee and Spratley’s (2010) article. The episode took place in a third grade collaborative team meeting. Q indicates the question I asked and A indicates Troy’s response.
Episode 4.5 Professional development session (Phase II).

Q: Are there implications for primary teachers that are different? Does this article [Lee & Spratley, 2010] really speak to maybe middle school, high school?

A: Well, with the way it focused on textbooks.

Q: Content area?

A: I mean it is certainly something that as elementary teachers we need to be reminded of and still try and integrate. Especially like in third grade the whole goal is to make sure our kids are reading so they can pass the AZMerit test. Like it is a really great reminder you don't have to sacrifice math time or science time to make sure we are increasing reading fluency.

Troy Johnson (TJ) recalls that the article by Lee and Spratley (2010) refers mostly to textbooks, rather than recalling that the article was about the challenges of adolescent literacy (e.g. the interconnectedness of content learning and reading to learn). He rationalizes elementary teachers need to integrate subjects, but his reasoning explains that ultimately we teach reading fluency so students can pass the state assessment. Referring to Boaler’s (2008) article he made another profound statement in the following episode.

Episode 4.6 Professional development session (Phase II).

Q: Do we do the same thing to kids in literacy that this article spoke about math?

...the focus was on kids that can do math fast or those who don't get it are just lazy.

A: I see myself identifying just immediately in my head there is one kid in class I can think of he is reading at an N plus level [a third grade level equivalent (Fountas
and Pinnell, 2001) or higher], an excellent reader who doesn't really apply himself at all. I finally challenged him through Successmaker.

In his response to Boaler’s (2008) article Troy Johnson considers a child in his own class as “one who doesn’t really apply himself.” Through conversation Troy reveals his belief in a skills-based reading system, by putting him on Successmaker, a skills-based program he believes offers his student a challenge. Horn (2007) contends teachers’ conversational category systems not only model problems of practice, but reflect assumptions teachers make about students, their subject-area, and teaching that ultimately come to light in their instruction and their curriculum. In other words, the categories teachers place students in tends to be reflective of their own beliefs or their beliefs of a student’s capability. Troy contradicts the very idea that he is studying by referring to his student as one “who doesn’t really apply himself at all.” By referring to his student in this manner Troy demonstrates either resistance or rejection of Horn’s thesis. This episode suggests that Troy is not particularly reflective and that he is inclined toward behaviorist explanations of teaching and learning when he tries to be reflective.

**Autumn Sanders, Sixth Grade Math and Science teacher, Secondary Informant (Phase II)**

Autumn Sanders is attending the LIMES workshops at the university, and she hopes to further her career as a math specialist. Similar to Summer, Autumn’s eight years of in-service teaching would place her at the higher end of the intermediate level between expert and novice teacher (Allen & Caspergue, 1996). This is the second year she and Jenna have worked as teammates. The following excerpt is part of a conversation between Jenna and Autumn showcasing the connections Autumn is making between
reading and math. The team is discussing an upcoming task in Jenna’s language arts class. Autumn is offering ideas on the importance of using open-ended questions and addressing status issues within the group.

**Episode 4.7 Professional development (Phase II).**

AS: They [The questions] can’t be …questions where they [students] just look them up [in the text] to answer. It needs to be something where they have to do several different things; so [for example] if we’re sitting here in a group and I’m the low status kid and you two are the high status kids, my answer is still relevant because there’s no [single correct] answer, or maybe the strategy that I use is relevant. So in math, let’s say we have a problem you can solve with any strategy you want; and you have to share your strategies and be responsible for each other’s strategies. That makes the low status kid rise up in status because maybe he did addition while everybody else did multiplication; but only he knows addition, right? He [that student] still has a strategy that is just as important. It [the strategy] needs to be included on the final piece of paper [produced by the group].

JJ: That they [unintelligible - 04:11].

AS: Yes, that is part of designing it [the task]-- because it’s not just a series of questions that [students] can just easily answer by [themselves] or do things on a test…It has to be something where they have to compare what was said and add it together…or diagram together.

In this episode Autumn suggests to Jenna not only how to organize the lesson, but she actually makes comparisons to math strategies. Autumn is struggling to find the terms associated with language arts; and she clearly recognizes connections between the
discipline of math and literacy, she knows open-ended questions are important in both subject areas. The episode took place in early November, yet Autumn has clearly internalized notions of status from the theories introduced in the Boaler (2008) and Horn (2007) articles introduced in the LIMES class she is participating in.

**Episode 4.8 Professional development (Phase II).**

JJ: Working with the seventh and eighth grade teachers in past years with the Individuals in Societies, I literally would take what [two other social studies teachers at the site] were doing and try to bring it to 6th grade and fall flat on my face. [I realized] well okay my kids are not cognitively ready for that. So, I had to kind of back it off and go back to baby steps and let them build up to that as they progress [from] 6th grade to 7th and 8th grade.

AS: But I think part if it though is thinking [rather] they are not ready but [instead] how can I get them ready or how can I approach this differently? That would better serve them.

JJ: Yeah, scaffold a little more.

During this professional development exchange in mid-November Autumn tries to share a new approach to thinking about learning with her colleague Jenna, who instead responds by offering “scaffolding” as a solution rather than exploring the new approach with Autumn. Although Jenna mentions scaffolding in this episode, my observations of her teaching reveals that she rarely scaffolds or models for her students. Her instructions to students typically are multi-stepped such as the Table 4.6 reveals in the upcoming section. At the onset of this lesson Jenna instructs students, “One, I want you to have your answers filled out. Two, I would like you to practice talking to each other about
what you think. And three, I also want you to practice backing up what you think.”

Often times Jenna offers scenarios to students of how a triad summarization strategy operates, but rarely if ever does she call on students to offer an example of what “respectfully agreeing” or “respectfully disagreeing” may look like. Instead verbocentric scenarios are created by the teacher, delivered by the teacher and responded to by the teacher. Based on these findings, it seems that Jenna’s beliefs and practices are contradictory and conflicted.

These four episodes provide an introduction to each of the teachers who participated in this study and portend potential incongruences between their beliefs and practices. The next section deconstructs the incongruences that seemed to have challenged the teachers as evidenced by findings from the surveys, interviews and field notes.

The Core Beliefs of Teachers

Throughout the three phases of the study, data collected from interviews, surveys, observations and PD discussions revealed the following two types of teachers:

- **Conflicted Constructivist:** The teacher clearly demonstrates constructivist tendencies, but is plagued by contradictions between beliefs and pressures to conform to site and district mandates.

- **Conflicted Behaviorist:** The teacher wants to adopt constructivist views, but contradictions with original beliefs leads to rejection of the new information and conformity to old beliefs, site and/or district mandates.
Each of the four participants fell into one of these categories as suggested by their responses to the Woolley and Woolley (1999) belief survey. The following two sections describe the survey data used to characterize the four participants in the study.

**General Findings from Pre and Post Survey Data**

As mentioned in chapter 3 Woolley and Woolley (1999), the authors of the survey used, recognized that in pre/post situations behaviorist tendencies tend to increase in most in-service teachers. They also suggested that most in-service teachers employ a mixture of behaviorist and constructivist characteristics. This study was no exception.

While I considered the responses to all of the questions (as discussed in chapter three), my analysis in Phase III concentrated on three categories: Behaviorist Management (BM), Behaviorist Teaching (BT), and Constructivist Teaching (CT), which I analyzed in order to characterize the four teachers. Table 4.1 below represents teacher beliefs as revealed by their responses to the belief survey. I computed a difference score between the pre and post survey responses.

<table>
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<th>Teacher</th>
<th>n = 4</th>
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<th>Post</th>
<th>BM $\bar{x}$ Pre</th>
<th>Post</th>
<th>CT $\bar{x}$ Pre</th>
<th>Post</th>
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<td>3.71</td>
<td>3.71</td>
</tr>
<tr>
<td>Autumn</td>
<td></td>
<td>2.77</td>
<td>2.56</td>
<td>2.57</td>
<td>3.57</td>
<td>3.14</td>
<td>3.71</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Teacher</th>
<th>n = 4</th>
<th>Difference Pre</th>
<th>Post</th>
<th>Difference Pre</th>
<th>Post</th>
<th>Difference Pre</th>
<th>Post</th>
</tr>
</thead>
<tbody>
<tr>
<td>Summer</td>
<td></td>
<td>+1 increase towards D</td>
<td>-2 decrease towards D</td>
<td>-1 decrease towards A</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Troy</td>
<td></td>
<td>-2 decrease towards D</td>
<td>+3 increase towards A</td>
<td>-2 decrease towards N</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Jenna</td>
<td></td>
<td>-9 decrease towards D</td>
<td>+3 increase towards A</td>
<td>No change</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Autumn</td>
<td></td>
<td>-2 decrease towards D</td>
<td>+5 increase towards A</td>
<td>+4 increase towards A</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Key: Behaviorist Management (BM), Behaviorist Teaching (BT), Constructivist Teaching (CT)

SD=Strongly Disagree, D=Disagree, N=Neutral, A= Agree, SA=Strongly Agree
For example, in the case of Jenna’s -9 decrease towards disagree on the BT scale the difference was calculated in the following manner (see Table 4.2). Response answers ranged from 1-5 on a Likert scale. Thus, I calculated differences from pre to post responses as indicated by a plus or minus and then, totaled the differences. This same procedure was used for each teacher and for each scale--BT, BM and CT. I also averaged the mean scores for the pre and post survey results and used the average in creating the belief continuums discussed in the following section.

In accordance with Richardson and Anders (1994), the analysis of the pre/post survey data compiled for all four inservice teachers demonstrated change in beliefs. And in accordance with Woolley and Wooley (1999), all four teachers possessed qualities of BT, BM and CT. Woolley and Wooley explain “that some teachers are behaviorist in some aspects of their teaching and constructivist in others” (1999, p.13). The behaviorist management category was of particular interest because classroom management is an area behaviorist tendencies may appear regardless of constructivist beliefs. Post scores for

<table>
<thead>
<tr>
<th>Question #</th>
<th>Pre-survey</th>
<th>Post-survey</th>
<th>Difference</th>
</tr>
</thead>
<tbody>
<tr>
<td>5</td>
<td>3</td>
<td>3</td>
<td>-</td>
</tr>
<tr>
<td>6</td>
<td>5</td>
<td>3</td>
<td>-2</td>
</tr>
<tr>
<td>8</td>
<td>1</td>
<td>1</td>
<td>-</td>
</tr>
<tr>
<td>9</td>
<td>4</td>
<td>1</td>
<td>-3</td>
</tr>
<tr>
<td>20</td>
<td>1</td>
<td>1</td>
<td>-</td>
</tr>
<tr>
<td>21</td>
<td>5</td>
<td>4</td>
<td>-3</td>
</tr>
<tr>
<td>25</td>
<td>4</td>
<td>1</td>
<td>-3</td>
</tr>
<tr>
<td>27</td>
<td>2</td>
<td>3</td>
<td>+1</td>
</tr>
<tr>
<td>32</td>
<td>2</td>
<td>1</td>
<td>-1</td>
</tr>
<tr>
<td>Total</td>
<td>27±9</td>
<td>18±9</td>
<td>-9</td>
</tr>
<tr>
<td>x̅ avg</td>
<td>3.0</td>
<td>2.00</td>
<td>2.5</td>
</tr>
</tbody>
</table>
Troy (+3), Jenna (+3) and Autumn (+5) increased on the Likert scale towards agree with behaviorist management, while the teacher with the highest constructivist tendencies, Summer (-1), decreased towards disagree.

Also, Summer decreased from strongly agree (4.71) towards agree (4.57) in her constructivist beliefs. Because of her high pre-survey tendency I wondered what accounted for the slight change. No CT question indicated a significant change in her beliefs. A closer look at the individual questions, however, brought about the realization that Summer and her other three colleagues expressed increasing behaviorist teaching tendencies based upon the same question which read

# 9: I teach subjects separately, although I am aware of the overlap of content and skills.

In response to this question all four participants’ scores indicated their awareness of subject overlap, but realized a need existed to explicitly keep subject-areas separate. In addition to Summer’s decrease in CT tendencies, Troy (-2) moved toward a neutral stance and Jenna indicated no change. Autumn (+4) was the only teacher whose constructivist beliefs increased from 3.14 to 3.71 indicating a small degree of growth from a neutral stance towards a constructivist stance.

There were other general findings of interest. Summer’s post survey (4.57) score indicated the closest to strongly agree with constructivist teaching than any of her colleagues. Troy, Jenna and Autumn all scored the same (3.71) towards constructivist tendencies on their post-surveys. Jenna’s pre and post scores, however, remained the same at 3.71 indicating that no change took place for her in the area of constructivist
teaching. Lastly, Summer (+1) again slightly increased towards disagree while Troy (-2), Jenna (-9) and Autumn (-2) all decreased.

Woolley and Woolley (1999) cautioned that the behaviorist and constructivist theories should not be viewed as opposites, but instead separated into the BM, BT and CT categories in order to account for some behaviorist tendencies that may exist within constructivist teachers. Thus, I created separate continuums of beliefs for each of the three categories in order to create a more complete picture of the teachers.

**Continuum of Beliefs**

During Phase III I first analyzed each teacher’s pre and post responses and then averaged the responses to each type of question; the tables below report their average theoretical and practice scores. Based upon the average of the calculated mean scores of the pre and post survey data, teachers were placed on a continuum to represent the beliefs the two surveys revealed. Teachers who fell on the continuum around 3.0 would be considered neutral regarding that particular category. For example, Troy demonstrated a neutral tendency in the constructivist teaching continuum shown below where he fell in the middle at 3.0. Thus, a person who falls at a 5.0 would strongly agree with a constructivist teaching philosophy and those falling near 1.0 would lean more towards behaviorist teaching.

Table 4.3 provides each teacher’s system of beliefs. All four teachers possessed some qualities of each type. Overall, Summer was an outlier in that her constructivist beliefs are closer to the constructivist end of the continuum than the scores of her colleagues. Summer’s placement on the continuum at 1.78 towards agrees with behaviorist teaching and 4.64 at the other end of the spectrum on the constructivist
### Table 4.3  Teacher Belief Continuums

#### Behaviorist Management

<table>
<thead>
<tr>
<th></th>
<th>SS</th>
<th>TJ</th>
<th>AS</th>
<th>JJ</th>
</tr>
</thead>
<tbody>
<tr>
<td>Value</td>
<td>2.71</td>
<td>3.07</td>
<td>3.07</td>
<td>3.21</td>
</tr>
<tr>
<td>Rating</td>
<td>strongly disagree</td>
<td>neutral</td>
<td>agree</td>
<td>strongly agree</td>
</tr>
</tbody>
</table>

#### Behaviorist Teaching

<table>
<thead>
<tr>
<th></th>
<th>SS</th>
<th>TJ</th>
<th>JJ</th>
<th>AS</th>
</tr>
</thead>
<tbody>
<tr>
<td>Value</td>
<td>1.78</td>
<td>2.22</td>
<td>2.50</td>
<td>2.69</td>
</tr>
<tr>
<td>Rating</td>
<td>strongly disagree</td>
<td>neutral</td>
<td>agree</td>
<td>strongly agree</td>
</tr>
</tbody>
</table>

#### Constructivist Teaching

<table>
<thead>
<tr>
<th></th>
<th>AS</th>
<th>JJ</th>
<th>TJ</th>
<th>SS</th>
</tr>
</thead>
<tbody>
<tr>
<td>Value</td>
<td>2.43</td>
<td>3.71</td>
<td>3.85</td>
<td>4.64</td>
</tr>
<tr>
<td>Rating</td>
<td>Strongly disagree</td>
<td>neutral</td>
<td>agree</td>
<td>strongly agree</td>
</tr>
</tbody>
</table>

*JJ = Jenna Jenkins, TJ = Troy Johnson, SS = Summer Stephenson, AS = Autumn Sanders*
teaching continuum indicates relatively strong constructivist tendencies. This characteristic is reinforced above in Episode 4.2 when Summer likens math to reading in that you need to “understand the concepts in math you have to use the same process that you might use with a piece of text to tear it apart and put it back together.” Observation data mirrored these same findings. For instance, the IB unit Summer designed for fall semester named “Where We are in Space and Time” invited students to explore lines of inquiry centered around the notion that every person’s home is unique to their own personal journey. Summer allowed for student transaction with text and encouraged them to find meaning based on personal experiences and connections to “home.”

The average mean calculated from her pre and post-survey data revealed that Autumn Sanders (AS) fell on the beliefs continuum at 3.43 towards agree with constructivist teaching. Autumn’s observation data aligned with her beliefs as is evidenced in Episode 4.7 in which she talks about the importance of open-ended questions and the similarities between math and literacy strategies. In terms of behaviorist management tendencies, Autumn was among the highest at 3.07 among her peers; and her orientation towards behaviorist teaching landed at 2.69—close to neutral. According to the survey averages, however, observations support Autumn’s a constructivist tendency.

Despite an average score indicating higher constructivist tendencies than Autumn (3.41), neither Jenna (3.71) or Troy (3.85) indicated an increase in their post survey data. Troy decreased (-2) from 4.0 to 3.71 and Jenna showed no change remaining at 3.71. The average of Jenna’s pre/post responses to the survey resulted in her placement on the continuum at 3.21 in the area of behavior management and 3.71 towards strongly agree
with constructivist teaching. However, neither average was reflected in my field note memos or video-taped observations. Observations of Jenna’s classroom mirrored the importance to her in maintaining “relationships” with students (see Episode 4.4) rather than maintaining classroom management or content learning. In that same episode (4.4) Jenna also refers to the need for students to possess a “toolbox full of reading strategies” but she did not make a connection in how the toolbox of strategies might be implemented across content areas. My researcher memos also indicated extremes, meaning a lack of classroom procedures at times vs. strict “no talking” rules at other times. In other words, one day Jenna leaned towards constructivism and the next day she demonstrated behaviorist tendencies.

Troy Johnson was near agrees towards constructivist teaching landing at 3.85 on the continuum. There were no clear distinctions in his tendencies toward behaviorist teaching (2.22) or behaviorist management (3.07). Troy’s beliefs revealed a tendency towards a constructivist stance, yet observations and dialogue indicated that he most often taught as if he might have held behaviorist beliefs. For instance, observations revealed Troy’s classroom structures were often verbocentric, despite intentional mixed-ability groupings that were supposed to help students to solve problems through dialogue. Rarely did Troy incorporate a collaborative learning strategy such as Think-Pair-Share (Lyman, 1981) to elicit student responses; but rather he relied heavily on whole-group student responses written on whiteboards.

Placement on the continuum provided me with the opportunity to consider discrepancies between what a teacher said and did, or in Summer’s case non-discrepancies. I could also see that team members were paired with teachers of opposing
beliefs. From these discrepancies the notion that each teacher was dealing with a type of conflict emerged. Thus, with the idea that different types of conflict exist, the following section discusses the types of conflict the teachers exhibited and the role reflection played in the instructional decisions they made.

**Types of Conflict Teachers Encountered**

Teachers in this study encountered three types of conflict: 1) external (e.g. outside pressure to meet assessment, evaluation and school or district expectations), 2) a combination of both external and internal (e.g. outside pressures + mismatch of beliefs vs. self, colleague, site or district) or 3) internal (e.g. beliefs as to how students learn - skills vs. conceptual; growth vs. fixed mindsets are challenged; or beliefs as to how teachers teach – success vs. theoretical orientations). Autumn’s quote featured in chapter 1, “We are at war with misunderstandings-misunderstanding at so many levels.” indicates her belief that teachers encounter multiple types of conflict. At the core, these findings strongly suggest and are affirmed by Richardson and Anders (1994) that beliefs are related to practices and that if incongruence between held beliefs and attempted practices exist then conflict results.

In Episode 4.1, Summer, acknowledges in her interview that assessments are not true indicators of what students know and can do in terms of reading. Yet district and state assessments are used to determine what kids know and are able to do. Summer is forced to combat external conditions, the assessments that oppose her constructivist beliefs. Additionally Summer is plagued by another type of conflict, a combination of external and internal conflict, which is illustrated in Episode 4.5. This type of conflict arises when the third grade teachers’ perceptions as to why students learn to read are at
odds with her colleague, Troy. During the conversation Summer redirects the dialogue back to the article Troy cannot seem to recall and says, “I had a lot of feelings about this article.” Summer goes on to recall, “so much blame was being placed upon things that were outside of their (teachers’) control.” Her remarks reveal not only an external tension between her and her grade level colleague, Troy, but also the internal struggle she feels regarding the blame placed on teachers (including herself) that is beyond their sphere of influence. Her beliefs about literacy and learning are at odds with those around her and the policies she is asked to implement. Summer, apparently a conflicted constructivist, not only struggles within as to what she can control, but outwardly struggles with colleagues who do not share her common beliefs and with policies that contradict her beliefs.

Troy’s near neutral stance towards behaviorist management and behaviorist teaching on two of the three belief continuaums contrasted his (3.85) constructivist tendencies on the surveys. However his tendency to teach using a whole-group structure, plus his reason for integrating subject areas and teaching reading is so students can “pass the AzMerit test” (as indicated in Episode 4.5) may indicate a behaviorist stance. In Episode 4.5 Troy cannot recall his reflection and appears to be at odds with the reflective practices called for in the university-led LIMES class in which he is enrolled. This young teacher, with three years of teaching experience under his belt, has found a teaching structure and purpose that works for him, what Schön (1983) refers to as knowing-in-action. To him, the internal conflict arises from being asked to shift from what Schön (1983) calls a ‘success orientation’ to a ‘theory orientation’ (p. 58). Thus, Troy, a conflicted-behaviorist, struggles to enter a world in which he continues to practice and
prepare for future classroom scenarios. The conflict he seems plagued by is not opposing theories, but instead how theory might transfer to his practice.

Another example of external and internal conflict arises on the sixth grade team. The “war” Autumn refers to in the quote at the onset of chapter one rages both inside and outside of her. The theory she has been exposed to in the university-led class LIMES class is providing a rationale for her to teach in a way she is more at peace with and yet she is experiencing many of the same battles Summer is facing. Her beliefs do not align with district or state mandates, nor do they align with her teaching partner, Jenna. Autumn’s belief that learning is conceptual is in stark contrast with their colleague, Jenna, who feels she needed to “back it off and go back to baby steps” in order for her sixth grade students to progress (see Episode 4.8). During their PD session Autumn does not confront her teaching partner. Rather she insistently tries to persuade Jenna to reconsider the notion students “are not ready” and instead consider “how can I get them ready or how can I approach this differently?” Like Summer, Autumn is partnered with a colleague who does not share similar beliefs. Rather than outwardly confront their colleagues, they tried to share alternate ways of teaching in hopes their partners might embrace a new approach. Thus, similar to Summer, my analysis seems to suggest that Autumn is considered a conflicted-constructivist.

Similar to Troy, Jenna’s conflict is internal. Her teaching experiences, spanning over twenty years, have more to do with her apparent resistance to or her justification not to change. Jenna’s beliefs, however, unlike Troy, are contradictory. For example, in one classroom observation (see section 6 of Table 4.3), Jenna attempts to explain to students and herself that she is embracing a new approach. However, her internal beliefs surface
in the instructions, which are in opposition to the learning approach she is attempting, she
insists “all of your boxes filled in by the time we are done” rather than asking open-ended
questions and encouraging student transaction through discussion.

Several times during the study Jenna resorted to narrative to explain or justify her
resistant behaviors. Recalling Episode 4.8 in which Jenna recalls a past attempt to try
something new, she reminisces, “I literally would take what [two other social studies
teachers at the site] were doing and try to bring it to 6th grade and fall flat on my face. [I
realized] well okay my kids are not cognitively ready for that.” In an effort to cope Jenna
seems to rationalize the new approach to teaching did not work for her in this instance
because her students were not cognitively ready. At times it is as if she fights with
herself between a constructivist and a behaviorist stance. In her initial interview Jenna
explains, “I’m trying to foster the joy of reading, just for reading sake, not reading
because I want you to read a specific book.” She says this, and yet assigns books and
requires students to complete copious “fill in the blank” answers to questions she asks
regarding the books. The behaviorist tendencies Jenna displays outweigh her
constructivist statements and thus, she is characterized as a conflicted-behaviorist.

What emerged from the triangulation of the data was not only the notion there
was at least two different types of teachers, but there were also different types of conflict.
Taking into consideration the types of conflict teachers were experiencing along with the
type of teachers, Table 4.4 represents the data discussed above including a summary of
the pre/post survey mean averages indicated on the continuums in Table 4.1.
Reflection In and On Practice

Teachers’ use of reflection to inform their instructional *next steps* is presented in the following tables. Two distinct types of reflection took place: 1) Reflection in action (during the act); and Reflection on practice (after the act). The following charts (see Tables 4.5 & 4.6) present statements made by the informants in a variety of contexts demonstrating the two distinct types of reflection that took place and how the reflection led to the instructional decision-making by the four informants in the study. Analyzed data sources for this section include excerpts from recorded classroom and professional development observations, field notes, written reflections and comments made during reflective conversations among LIMES colleagues while viewing GoReact videos, which were part of the data collection explained in chapter three (see Table 3.2).

**Conflicted Constructivists-Summer and Autumn.** These two constructivist-oriented teachers used their reflections--both in and on practice--to set instructional goals and to evaluate if the goals were being met or in some cases to revise or reframe (Schön, 1983) their original instructional decisions. The chart below (Table 4.5) provides examples of a) what the teacher said about the strategy, b) what kind of reflection was

<table>
<thead>
<tr>
<th>Types of Teachers</th>
<th>Teacher n=4</th>
<th>Pre/Post-Survey Average</th>
<th>( \bar{x} )</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td>BM</td>
<td>BT</td>
</tr>
<tr>
<td><strong>Conflicted Constructivist</strong></td>
<td>Summer Stephenson</td>
<td>2.71</td>
<td>1.78</td>
</tr>
<tr>
<td></td>
<td>Autumn Sanders</td>
<td>3.07</td>
<td>2.67</td>
</tr>
<tr>
<td><strong>Conflicted Behaviorist</strong></td>
<td>Jenna Jenkins</td>
<td>3.21</td>
<td>2.50</td>
</tr>
<tr>
<td></td>
<td>Troy Johnson</td>
<td>3.07</td>
<td>2.22</td>
</tr>
</tbody>
</table>
demonstrated, and to whom the reflection was said and c) the impact of the reflection on practice for revising the task card instructional strategy.

<table>
<thead>
<tr>
<th>Table 4.5 Instructional Decision-making of the Conflicted Constructivists</th>
</tr>
</thead>
<tbody>
<tr>
<td>Practical Reasoning /Data source (What the teacher said)</td>
</tr>
<tr>
<td>---------------------------------------------------------------</td>
</tr>
<tr>
<td>1. We need to start working on what the task is and which group [leaders] are making sure what everyone [in the group] needs to know” Summer 9/30 field notes</td>
</tr>
<tr>
<td>2. “I have seen some great thinking. We need to know more about what we are supposed to be doing. We may need to postpone science and come back to this. Summer 9/30 field notes</td>
</tr>
<tr>
<td>3. “What we need to do is order these (task) cards. Please put the items back in envelopes.” Summer 9/30 field notes</td>
</tr>
<tr>
<td>4. “I had a similar difficulty with students understanding the task card and following the steps prior to doing the mathematical thinking.” Summer 10/5 video observation of Troy</td>
</tr>
<tr>
<td>5. “The role cards are pretty complex for my students—at this moment—to understand. I am working hard to teach and model these roles and get them to understand they are not hierarchal, but complimentary…” Summer PD reflection 10/6</td>
</tr>
<tr>
<td>6. As I was walking around the groups I</td>
</tr>
<tr>
<td></td>
</tr>
<tr>
<td>---</td>
</tr>
<tr>
<td>6.</td>
</tr>
<tr>
<td>7.</td>
</tr>
<tr>
<td>8.</td>
</tr>
</tbody>
</table>

Summer is conflicted by the idea of reading the task card to her students. She feels students do not understand the task, but is torn because she knows reading the card to them undermines the intent of the assignment. One of the components--multiple
dimensions--contributing to complex instruction (Cohen, 1994) recognizes all students come with multiple abilities. Part of the group’s task is to tap into particular skills or strengths individual students possess. Summer’s feedback from one of her LIMES instructors indicated reading the task card was part of the struggle of the group and that together they would figure out the meaning. Through reflection on her own practice and the practice of her colleagues, Summer eventually came to terms with the conflict she felt over the task card. She used a think-pair-share strategy in which students read the task card directions with a partner. Then, partners noted any important information before beginning the task; and then understandings were shared with the whole group. Over time and through reflection, the conflicted-constructivist abandoned her rationalization to over-compensate through direct instruction (a decision a behaviorist-oriented teacher might have made) and instead settled for a gradual release of responsibility approach to learning for her students, which is more constructivist-oriented.

In the end, data (field notes, classroom observations, PD GoReact comments, and PD reflective conversations) also suggests that Autumn recognized growth in her students’ approach to the math tasks and how they worked together. Incorporating a consensus board, establishing group norms, and explicitly stating the norms on the task card were strategies she adopted based upon her continuous reflection both in and on her practice. Realizing her goal was important in that it strengthened and instantiated her beliefs in the approach she was undertaking. This is evident when Autumn attempts to share her affirmations regarding equitable teaching strategies with Jenna during their sixth grade professional development time in hopes her colleague might also try something new. Recalling Episode 4.7 Autumn describes designing a task as “not just a
series of questions that can just be easily answered,” but instead she suggests Jenna should incorporate open-ended questions in the design of her own language arts task. In an upcoming reflective conversation on the purpose of group norms Autumn explains to her teaching partner the purpose of the group norms is twofold. The focus Autumn says, ‘is on conceptual learning and …how we treat each other.” However, Jenna’s use of the norms is because, “I [want to] remind them [students] that being focused means when somebody’s speaking you’re actively listening, you’re looking at them, your ears are on them.” Hence, the differences in the two teaching partners (Jenna’s behaviorist tendencies and Autumn’s constructivist tendencies) emerge from their reasoning statements.

**Conflicted-Behaviorists: Jenna and Troy.** Again, both informants reflected on their practice; but the ways in which Jenna and Troy used reflection were in stark contrast to their constructivist-oriented colleagues. The behaviorist-oriented teachers used their reflections—both in and on practice—to focus on student behaviors or to explain their own behaviors. Similar to Table 4.5, the chart below provides examples of 1) what the teacher said about the strategy, b) what kind of reflection was demonstrated, and to whom the reflection was said and c) the impact of the reflection on practice for revising the task card instructional strategy.

<table>
<thead>
<tr>
<th>Instructional Decision-making of the Conflicted-Behaviorist</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Practical Reasoning /Data source</strong> (What the teacher said)</td>
</tr>
<tr>
<td>1. “I need the rest of you to listen because eventually you will be the scribe.”</td>
</tr>
</tbody>
</table>
| Jenna field notes  
10/22 social studies | Directly addresses students | She unintentionally assigns status to one of the roles |
<table>
<thead>
<tr>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>2.</td>
<td>Reflection in practice</td>
<td>Jenna summarizes there are two outcomes she is looking for, but as she talks Jenna decides there is an additional outcome she “wants.”</td>
</tr>
<tr>
<td></td>
<td>Directly addresses students</td>
<td>Number 1 on her list is having the boxes filled in. Second is discussion practice using a triad summarization strategy she often uses to structure student dialogue.</td>
</tr>
<tr>
<td></td>
<td></td>
<td>She realizes the standard she is focused on – citing evidence – should also be an outcome and adds it as a third “thing.”</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Jenna is adamant the boxes will be completed.</td>
</tr>
<tr>
<td>3.</td>
<td>Reflecting on practice</td>
<td>Jenna decides to incorporate group norms and mixed-ability groupings into the lesson she intends to teach the same day.</td>
</tr>
<tr>
<td></td>
<td>Discussion w/grade level colleague and researcher</td>
<td>She does not need additional time to plan. Her plans are not set in stone.</td>
</tr>
<tr>
<td>4.</td>
<td>Reflecting in practice</td>
<td>Jenna makes a connection with her students as to a strategy they are using in a different class</td>
</tr>
<tr>
<td></td>
<td>Directly addresses students</td>
<td>She wants to try what Autumn is doing.</td>
</tr>
<tr>
<td>5.</td>
<td>Reflection on practice</td>
<td>Troy tries to keep mixed ability groupings on track through whole group feedback.</td>
</tr>
<tr>
<td></td>
<td>Comment on GoReact video of a LIMES colleague</td>
<td>Despite attempt at mixed ability grouping, Troy is focused on accountability rather than how individual groups are running. The video indicates not all groups were running smoothly. No problem-solving or future planning takes place.</td>
</tr>
</tbody>
</table>
Based upon sections 3 and 4 in Table 4.6, Jenna, a conflicted-behaviorist, seemingly wants to adopt the strategies her teaching partner Autumn has outlined for her. Yet in section 2 of Table 4.5, Jenna contradicts the open-ended question approach she is attempting by insisting her students fill in all of their boxes. Another conflict my analysis of Jenna uncovered was in her use of role cards. She consistently used role cards in her “Individual in Society” class, but some roles (e.g., scribe, resource manager, etc.) required more work than others. For instance, in section 1 of Table 4.6, Jenna unintentionally assigns status to the role of scribe in order to regain control of the chattering class. She explains students “need to listen” because eventually they will all
be responsible for the scribe job. Often times, my researcher memos indicted Jenna used phrasing such as “I need you to...” to bring about behaviors.

Troy has been involved in a reflective cycle of observing lessons he and his cohort have taught and then reflecting on the observations. His reflective practices, however, are for surveying student accountability, not problem-solving how a particular strategy such as mixed ability groupings could have been improved. Troy, a conflicted-behaviorist, missed opportunities to think about what he was doing or to prepare for future lessons. In the preceding excerpts Troy does not allow himself what Schön (1983) would call opportunities “to experience surprise, puzzlement or confusion” (p. 68). In Troy’s reflection on his practice in section 6 of Table 4.6 the seemingly behaviorist oriented teacher equates student explanations of their thinking as a means not only for slowing down student thinking, but as a way to cut down on “shout-outs.” Troy does not consider an improvement to the whole-group approach he is using to elicit student thinking. Instead he uses the reflection more as a justification for his approach. In section seven of Table 4.6 Troy apologizes for presenting material that confused a student by offering an explanation to the student to not be concerned with a certain type of mathematical computation until fifth or sixth grade. Here Troy does not use his reflection in practice to problem-solve how to address the student’s misconception. Instead he rationalizes the misconception as the student not being developmentally ready to solve the problem.

As described in the excerpts above, Jenna and Troy reflected in and on practice when asked. Both teachers incorporated role cards, group norms, and mixed ability groupings. Jenna and Troy also required students to explain their thinking; nonetheless,
for the most part, their reflections do not result in changing instruction. Any of Jenna’s or Troy’s uncertainties are not embraced as they were when Summer and Autumn immediately began to problem-solve in the midst of teaching (see Table 4.5 sections 2 and 5). Jenna adopted the ideas Autumn and I suggested mere hours before she attempted to implement the lesson, indicating her willingness to try new ideas. Jenna explained to her students she wanted to try an approach her colleague, Ms. Sanders, was using; but even though she tried the new idea, while teaching she slipped toward her belief that students needed to provide fill-in-the-blank answers, a behaviorist-oriented tendency, to be successful.

**Summary**

In sum, all four teachers possessed some qualities of BM, BT, and CT. However, each teacher type was also conflicted in some manner, whether internal, external or a combination of the two. While plagued with both internal and external conflicts over her beliefs, Summer stood out as an outlier in that her constructivist beliefs clearly overshadowed those of her colleagues. Thus, she was identified as a conflicted-constructionist.

While Autumn’s post survey results (2.56) indicated slightly higher behaviorist teaching tendencies than Jenna’s (2.00) results, Autumn viewed subject area learning (i.e., reading or mathematics) as a process of knowledge construction in which students actively make connections to prior knowledge. She was also intrigued with the notion of a gradual release of responsibility to students as indicated in the following PD reflective discussion. Autumn confided
One of my goals this year is to not do the thinking for the students but to help them; you know, prompt them to think or maybe some way guide them or scaffold them into something. One thing I really got out of this class, and I’ve heard it before but just I’ve been really think about is that when I’m doing the talking I’m not the one doing the learning.

Here Autumn demonstrates a shift in beliefs. For Autumn, conflict arose both internally and externally from her own beliefs which opposed not only district and state mandates, but those of her teammate, Jenna. As a result, she appears to be a conflicted-constructivist.

Jenna viewed the construction of knowledge as building skills sequentially in order to arrive at the correct answer. In other words, learning was viewed as a hierarchy, or as Jenna described something that might need to be "dialed back a little more to a [lower grade] level." Furthermore, despite incorporating the discussion strategy *Save the Last Word for Me* (Buehler, 2009) in an upcoming episode (Table 4.5) Jenna is more concerned that the boxes are filled in rather than questions or connections that may have emerged from students’ rich literature discussions of the novel. Despite her behaviorist teaching tendency decreasing from 3.0 to 2.0, Jenna still demonstrated behaviorist tendencies. Conflict for Jenna was internal in that she wanted to try new things, but her beliefs got in the way. Statements and actions such as these resulted in my placing Jenna in the conflicted-behaviorist category.

The conflict Troy experienced arose from internal conditions he struggled with. As a result I categorized Troy as a conflicted-behaviorist. Troy’s conflict did not appear to be tied to tension between two opposing theories, but instead between what reflective
practices had to do with his teaching actions. In accordance with Schön (1983), who makes a distinction between practitioners who rely on practical knowledge (knowing-in-action) vs. reflective practitioners who reflect in and on their practice, Troy relies heavily on his own knowing in practice. The shift from knowing in practice to assembling a repertoire of instructional practices seems to be at the center of Troy’s conflict. Troy does not appear to be threatened by any uncertainty brought about through reflective conversations, nor by the act of reflecting in and on practice. Troy, behaviorist stance, while unbeknownst to him, seems more congruent with his actions than the constructivist stance his survey results pointed towards. Further distinctions between these two types of reflection (in and on) are discussed in the following section. Keeping in mind that different types of conflict exist, the following section also discusses the role reflection played in the instructional decisions of the informants and includes more findings.

**The Criticality of Reflection in Professional Development**

All four teachers, regardless of their belief systems, implemented research-based literacy strategies across the disciplines. Professional Development provided opportunities for the teachers to reflect on the strategies they employed in their instruction. The following episodes are representative examples of how teachers used their reflections on the use of the instructional strategies to identify contradictions they encountered, and the next steps this reflection brought about. I collected artifacts during classroom observations consisting of specific strategies that teachers used (e.g. task cards (Featherstone et al, 2011), which included group norms) and role cards for mixed ability groupings (Boaler, 2008) as a basis for our discussions during Professional Development times. These artifacts along with classroom observations and
statements extracted from belief interviews and PD sessions were compared throughout this analysis. The following excerpts were either written or spoken during professional development sessions and are organized by grade level. The participants’ initials: AS (Autumn Sanders), JJ (Jenna Jenkins), TJ (Troy Johnson), and SS (Summer Stephenson) are used to indicate the speakers.

**Sixth Grade Reflection on Purpose of Group Norms**

**AS:** Well, I think we’re [using] strategies and understanding math and not focusing so much on steps or procedures. So when we do math we are trying to figure out what does that actually mean? Does it make sense? How does it relate to other problems we’ve been doing? Instead of focusing on, first you do this, second step you do that, third step you do that. So [the focus is] just getting really away from procedural math. Also, every day how do we talk to each other? How do we show respect for each other? Having students rephrase things even that is not related to math but just like I bumped into you, what do you say? Okay, go back and say excuse me or I’m sorry, I bumped into you. So I think it’s a combination of a focus maybe on conceptual development and then just how do we talk to each other. How do we treat each other?

**JJ:** See, that’s one part of what I want to include…I [want to] remind them [students] that being focused means when somebody’s speaking you’re actively listening, you’re looking at them, your ears are on them.

Both teachers used and found value in establishing group norms for the mixed ability groups that each teacher formed in order for students to accomplish a content area specific task. The third grade teachers likewise reflected on practice during professional
development sessions. Below are examples of comments they made in written reflections regarding the theory discussed during a PD session.

**Third Grade Reflection on Relational Equity**

**SS:** When one thinks about math holistically, as conceptual and deeply connected topics that are not fixed or linear, then students can engage in thinking about mathematics at any “level” because it is a part of developing conceptual understanding. No one person’s path to learning is the same – when we try to make it the same it can be really dreadful – for the learner, as well as, for the teacher.

**TJ:** I find forcing them to explain their reasoning behind their answer REALLY helps slow down the "fast" students. In my experience, the "fast" students have never had [such opportunities].

It appears Troy is using the language he has been exposed to in Boaler (2008) and Horn’s (2007) articles regarding ‘fast’ and ‘slow’ kids and applying it to his own teaching. Troy may be experiencing change (Richardson & Anders, 1994) as he plays with key terms from the article during a professional development reflection. His behavior and theory may be incrementally changing. However, his teaching partner, Summer, who has firm constructivist beliefs is changing in her own right. In the excerpt above Summer demonstrates she is continuing to develop concepts and come to terms with her beliefs that do not seem to mirror those of the district or her teaching partner, Troy.

**Dimension of Reflective Thinking and Types of Teacher Talk**

Professional Development time gave grade level team members a forum in which to practice reflective thinking and then to articulate their thinking. As pointed out
previously, both the conflicted-constructivists and conflicted-behaviorists used reflective thinking--both in and on their practice--(see Tables 4.6 and 4.7). Two teachers (Summer and Autumn) used reflection as a means for creating a repertoire of teaching actions or routines from which to draw and problem-solve. Jenna and Troy, on the other hand, used reflection but demonstrated little change in their instructional approaches.

The first two dimensions of reflecting in action--referred to as Dimension 1: Rapid Reaction and Dimension 2: Repair (Griffiths & Tann, 1992)--were consistently used by all four teachers during professional development sessions. Dimensions 3 through 5, however, were not. I first discuss the different dimensions of reflection on action that were employed by the four participants and then use parts of that analysis to discuss the use of Dimensions 1 and 2 among the primary participants.

**Reflective thinking on action of conflicted constructivists.** The following excerpts from teachers’ reflections during PD time specifically focus upon reflecting on action, which according to Griffiths and Tann (1992), would fall into one of three dimensions--Dimension 3: Review, Dimension 4: Research, or Dimension 5: Reauthorizing and Reformulating. I looked for the highest dimension of reflective thinking teacher used and identified that dimension in my analyses of teachers’ reflective practices. Tables 4.7 and 4.8 are extractions of the exemplar statements used to present the types of reflection in Tables 4.5 and 4.6.

| Table 4.7 Reflective Thinking On Action of Conflicted Constructivists |
|--------------------------|------------------|---------------------------------------------|
| **Practical Reasoning/Data source** | **Type of Reflection to whom** | **Dimension of Reflective Thinking & Types of Teacher Talk** |
| (What the teacher said) | (What the teacher did) | (personal or public theory) |
| 1. | “The role cards are pretty complex for my Reflection on action | Dimension 4: Research |
According to Griffiths and Tann (1992) there are differences that exist between the every day words spoken in personal theories versus the technical terminology found in academic language. Summer and Autumn each used technical terminology such as “hierarchal” and “conceptual” in their discussion of one of the strategies they attempted to use. In identifying the dimension of reflectivity that was used, I considered the goal setting and planning that had gone into perfecting the role cards that worked in tangent with, along with the essential agreements incorporated into, their task cards. The task cards, which involved a group-worthy problem--meaning the problem did not separate mathematical thinking from skills or concepts, was cognitively demanding, invited curiosity, and had more than one reasonable answer (see Figure 4.1). Through reflective

<table>
<thead>
<tr>
<th>Time</th>
<th>Activity</th>
<th>Reflection on action</th>
<th>Dimension 4: Research</th>
</tr>
</thead>
<tbody>
<tr>
<td>10/6</td>
<td>Discussion w/ grade level colleague</td>
<td>Act-observe systematically and Analyze rigorously-evaluate-plan-act: more systematic</td>
<td>Academic Language “not hierarchal, but complimentary…”</td>
</tr>
<tr>
<td>Autumn 12/7 PD reflection</td>
<td>Reflection on action</td>
<td>Dimension 4: Research Act-observe systematically and Analyze rigorously-evaluate-plan-act: more systematic</td>
<td>Academic Language “it’s a combination of a focus …on conceptual development and then just how do we talk to each other”</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Time</th>
<th>Activity</th>
<th>Reflection on action</th>
<th>Dimension 4: Research</th>
</tr>
</thead>
<tbody>
<tr>
<td>Autumn 12/7 PD reflection cont.</td>
<td>Discussion w/researcher (Voice 5)</td>
<td>Dimension 4: Research Act-observe systematically and Analyze rigorously-evaluate-plan-act: more systematic</td>
<td>Academic Language “it’s a combination of a focus …on conceptual development and then just how do we talk to each other”</td>
</tr>
</tbody>
</table>
discussions during PD sessions, the teachers problem-solved and found ways to improve the task cards. For example, Summer decided to incorporate a consensus board (see Figure 4.2), which required all students members of a mixed-ability student group to write out the strategies they used to solve a mathematical task. Summer then shared this strategy with all of the members of her cohort.
Although complex instruction (Cohen 1994), which involves these strategies (e.g. task cards, role cards, group norms, etc.), draws from Vygostsky’s (1978) notion that the use of language in social settings mediates understanding, through discussion and reflection the teachers found some students were still overshadowing their peers. In a GoReact posted comment in early October Summer shared with her LIMES cohort, “I had a similar difficulty with students understanding the task card and following the steps prior to doing the mathematical thinking.” As a result of sharing her struggle in a reflective forum, a consensus board was soon adopted by all cohort members in order to provide a space for each student to think on paper and then discuss their thinking among their peers. It was Summer and Autumn, however, who continued to revise, the task card, role card and consensus board throughout the semester. Much of their reflection on action was centered upon improving this instructional strategy (see Table 4.7) and involved reflective thinking from a more systematic dimension of reflective thinking--Dimension 4: Research Act-observe systematically and Analyze rigorously-evaluate-plan-act.

**Reflective thinking on action of the conflicted-behaviorist.** Excerpts from Jenna’s and Troy’s, the conflicted-behaviorists, suggest the highest level of reflective thinking attained was Dimension 3. Consistent with my field notes, interview and survey data, both Jenna and Troy relied on personal theory related to Dimensions 1 and 2 to guide their reflection rather than employing academic language or public theory to guide their reflective thinking (see Table 4.8). Jenna’s reflection on her action took place during a PD session in which she was justifying why she had not taught a previously planned lesson. Her language is less formal, but still the type of reflection (reflecting on
Table 4.8 Reflective Thinking On Action of the Conflicted-Behaviorist

<table>
<thead>
<tr>
<th>Practical Reasoning /Data source</th>
<th>Type of Reflection to whom</th>
<th>Dimension of Reflective Thinking &amp; Type of Teacher Talk</th>
</tr>
</thead>
<tbody>
<tr>
<td>(What the teacher said)</td>
<td>(What the teacher did)</td>
<td>(personal or public theory)</td>
</tr>
</tbody>
</table>

1. “I was going to do it [the lesson] yesterday but then I remembered ‘oh shoot, I got to take everybody to the book fair. We’ll do it tomorrow’. It all worked out on purpose somehow.” 11/15 6th grade PD session

Type of Reflection: Reflecting on action

Discussion w/grade level colleague and researcher

Dimension 3 Act-observe-analyze and Evaluate-plan-act: less formal

Every day Language “I was…but,…”

2. I work really hard to not let students just give me an answer; they need to include an explanation as well. I find this really helps them think about how they solved the problems, as well as cuts down on shouting out. There is too much that I expect for an answer, so students think twice before blurring out what pops in their head. 10/5 Troy video observation

Type of Reflection: Reflecting on action

Comment on GoReact video to a LIMES colleague

Dimension 3 Act-observe-analyze and Evaluate-plan-act: less formal

Every day Language “There is too much I expect for an answer so…”

practice) led me to label the statement as reflecting on action (Dimension 3).

During their PD session in which Jenna was planning for the use of norms in a group activity she again draws from personal theory, “See, that’s one part of what I want to include…I [want to] remind them [students] that being focused means when somebody’s speaking you’re actively listening, you’re looking at them, your ears are on them.” In a similar fashion Troy draws from his personal theory when discussing equitable teaching practices (Cohen, 1994). During a third grade PD session he explains. “I find forcing them [the students] to explain their reasoning behind their answer REALLY helps slow down the "fast" students. In my experience, the "fast" students have
never had [such opportunities]. While he uses the terminology “fast” from the Boaler (2008) article, not once did he use the academic term ‘relational equity’ from the article or refer to assigning competence as a means for equalizing status (Cohen, 1994) also referred to in the article. Both Jenna (an experienced teacher) and Troy (an intermediate teacher) appear to choose every day language rather than academic language to articulate their reflective thinking. Hence, their reflective thinking on their actions does not appear to go beyond the third dimension, which uses less formal terminology, of reflective thinking on action.

The primary participants’ use of reflective thinking dimensions. Both primary participants, Jenna and Summer used different dimensions of reflective thinking. Jenna’s reflective thinking (see Table 4.9) cycles between three dimensions rather than the five dimensions Griffiths and Tann (1992) argue is necessary. Examples of Jenna’s practical reasoning statements were extracted from a variety of data sources--field notes, classroom observation videos, and PD sessions--used to make distinctions between reflecting in and on practice in an earlier section. Again, by viewing Jenna’s use of reflective thinking, but this time in terms of reflecting in and on action, the language she uses seems to be the every day talk of a teacher. Hence, Jenna shies away from academic terminology suggesting the theories she draws from are personal rather than public.

Table 4.9 Jenna’s Use of Reflective Thinking Dimensions

<table>
<thead>
<tr>
<th>Practical Reasoning /Data source</th>
<th>Type of Reflection to whom</th>
<th>Dimension of Reflective Thinking &amp; Types of Teacher Talk</th>
</tr>
</thead>
<tbody>
<tr>
<td>Jenna field notes 10/22 social studies</td>
<td>Reflecting in action</td>
<td>Dimension 1: Act-react: immediate and automatic</td>
</tr>
<tr>
<td>“I need the rest of you to listen because eventually you will be the scribe.”</td>
<td>Directly addresses students</td>
<td>Every day Language “I need…”</td>
</tr>
</tbody>
</table>

1.
2. “Now, two things… One, I want you to have your answers filled out. Two, I would like you to practice talking to each other about what you think. And three, I also want you to practice backing up what you think” Jenna class video language arts 12/4
“The bottom line is I would like all of your boxes filled in by the time we are done.” Jenna classroom video 12/4
Reflection in action
Dimension 2: React-monitor-react: Thoughtful
Every day Language “One…two…bottom line”
Directly addresses students

3. “I was going to do it [the lesson] yesterday but then I remembered ‘oh shoot, I got to take everybody to the book fair. We’ll do it tomorrow’. It all worked out on purpose somehow.” 11/15 6th grade PD session
Reflecting on action
Dimension 3 Act-observe-analyze and Evaluate-plan-act: less formal
Discussion w/grade level colleague and researcher
Every day Language “It all worked out on purpose somehow.”

4. So…you know how in math class and science class you are working on your groups and the group tasks and all that good stuff? I like what She [Ms. Sanders] is doing. So I am going to try it. Ok? 12/11Jenna classroom video
Reflecting in action
Dimension 2: React-monitor-react: Thoughtful
Directly addresses students
Every day Language “I like what she [Ms. Sanders] is doing. So I am going to try it”

Summer, the other primary informant, moved throughout four of the five dimensions of reflective thinking. While the excerpts in Table 4.10 appear to be hierarchical, they are not intended to be. The practical reasoning statements were selected in order to present Summer’s systematic attempt at planning and evaluating the development of the role cards described above.

<table>
<thead>
<tr>
<th>Table 4.10 Summer’s Use of Reflective Thinking Dimensions</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Practical Reasoning/Data source</strong></td>
</tr>
<tr>
<td>(What the teacher said)</td>
</tr>
</tbody>
</table>
Summary

This section has discussed the criticality of reflection in professional development settings. The role reflection played in the development of instructional strategies was discussed first for the sixth grade team (group norms) and then the third grade team (relational equity). Then the dimensions of reflection the four teachers moved within was presented along with the types of teacher talk that transpired during reflection in and on action.
In sum, three of the four informants were involved in the LIMES project and were learning to select and design group worthy tasks, which by definition are challenging and mathematically rich. In turn they designed task cards that explicitly explained the mathematical task at hand including the instructions for each assigned role, materials needed, objectives, final product and group norms. The strategy of using the task card, however, proved to be problematic for all three teachers. Through reflective discussions during PD sessions, the two teachers (Autumn and Summer) problem-solved and found ways to improve the task cards. Their use of reflective thinking suggests the opportunities they were given in Professional Development to articulate their beliefs (both personal and public) encouraged them to make use of different dimensions of reflective thinking. Jenna and Troy reflected in and on their actions, but their movement within the dimensions of reflective thinking was limited to only three dimensions. While some studies (e.g., Allen & Caspergue, 1996) suggest there are differences in the types of reflective thinking among novice and experienced teachers, Jenna (a veteran teacher, with over twenty years of experience) and Troy (an intermediate teacher with less than four years experience) appear to have similar reflective thinking practices. Summer and Autumn, who both have close to ten years experience and would be considered closer to expert teachers, appear to be reflective and can articulate their thinking. Hence, differences between novice and expert seem to be blurred.

**Research Questions Revisited**

All four teachers in this study embraced the collaborative process set forth in our professional development meetings. Through mutual support of their colleagues they explored new ideas and their teaching practices. While their beliefs were not the same,
reflection served to be a powerful tool for each teacher but in different ways. In the following section I revisit the questions that initiated this study and consider them in light of the data I collected and analyzed.

*Question 1: What is the role of reflection in teachers’ instructional decision making?*

Teachers used reflection to inform the decisions they made concerning their classroom instruction. Both constructivist and behaviorist-oriented informants in this study reflected in and on their practice. However, close examination of the four teachers reveals that reflection was used in different ways depending upon the core beliefs the teachers held. For example, constructivist-oriented teachers used their reflections to set goals and evaluate if the goals were being met. Note the progression in Autumn’s attainment of her goal in Table 4.5 sections 5-8. The excerpts in Table 4.5 dating from September to December indicate the process of establishing norms and revising the task cards was ongoing for Summer and Autumn. Both constructivist-oriented teachers applied theory to their practice and reflected on the goals they set for themselves. Through this instructional decision-making cycle both constructivists provided meaningful learning experiences for their students.

The behaviorist-oriented teachers, although less-articulated, used reflection in and on practice to bring about student behaviors or to explain their own teacher actions. In Table 4.6 both Troy and Jenna use strategies such as mixed-ability groupings and role cards to ensure accountability of students rather than provide equitable learning experiences for their children. Through statements they make to students their beliefs of fixed mindsets, as opposed to growth mindset models (Dweck, 2006), is apparent as demonstrated in Episode 4.8. A break-through for Troy seemed to materialize in the
reflective conversation during his grade level team meeting with Summer when he says, “I find forcing them [students] to explain their reasoning behind their answer REALLY helps to slow down the "fast" students. Troy is beginning to embrace the language demonstrating a minimal change in behavior.

Recalling Episode 4.8 Jenna reflected in a professional development discussion that her kids were not “ready” for the constructivist-type lessons she had observed other colleagues teaching. And when she attempted to teach in that style, Jenna lamented she “was expecting too much” and “needed to dial down a little bit. Then they [her students] started soaring from there.” Through self-descriptions Jenna reflects in a PD session reflects her own teaching and student learning. Jenna’s narrative not only provides belief statements, but also offers reasoning into why a certain way of teaching [constructivist] may have failed. Her reasoning may explain why in Table 4.6 section 2, the outcome Jenna expects is that students have all of their boxes filled in. Jenna’s informal story seems to give her a vehicle for resolving the conflict she has experienced from a failed attempt to bring theory and practice together. Thus, in the cases of Jenna and Troy reflection on their practices assisted them in making sense of him (or her self). They appeared to be locked into their views of self--Jenna a self-proclaimed relationship builder and Troy who did not affiliate himself with either the behaviorist camp or the constructivist camp--yet they were attempting to manage and make sense of their teaching.

**Question 2: What is the relationship between reflection and professional development?**

Professional development provided all four teachers with spaces to encounter uncertainty or doubt and through reflection discover possibilities for resolution. Summer
and Autumn embraced these opportunities with thoughtful discussion and reflection on both theory and practice. For example, Summer reflected on the idea of conversational categories teachers used from the Boaler (2008) article during one of our PD sessions in mid-November. She reflected

What I found powerful about the conversation [of the teachers] in case study one [was their] rephrasing. Like taking that word ‘fast’ and that word ‘slow’ and really thinking about it more [in the way] we have been talking about in the math class as strengths and stretches.

Autumn’s reflections were likewise thoughtful and filled with connections to theory and her practice. In one session in which she and I were reflecting on a video-taping of her classroom teaching she concluded

Well, I did call students up at the end, but I just didn’t have it written down.

[What] I want to do [is state that] so and so from this group used this strategy. What I basically did at the end is just focused on this group because I thought their strategies were so interesting and diverse. So I asked this group to present but in the future [will do it differently]. She continued to reflect that when students explained their strategies at the end of the lesson “they have an opportunity to say ‘look, this is how I did the math and it worked out.’ There’s this big misconception that there is only one right way to do math.”

In addition, both Summer and Autumn moved throughout four of the five dimensions of reflective thinking described by Griffiths and Tann (1992). Dimension 5, Reauthorizing and Reformulating, is a long-term type of reflection this study was not designed to capture. This type of reflection may be more observable in a study such as
this that incorporates action research project, which Griffiths and Tann (1992) argue is sometimes the only dimension addressed in such projects. These findings suggest using practical arguments to examine movement through several dimensions of reflective thinking can encourage teachers to more openly articulate, examine and check their theories (personal and public) for coherency and consistency.

Jenna and Troy, however, did not reflect on the introduction of new ideas or theory in the same manner as Summer and Autumn. They did attempt to discuss the articles, but their remarks were disjointed. For example, during a collaborative PD session in mid-November Troy reflected

Summer’s reflection [on the Boaler (2008) article] did come to her mind. Mine has not…I honestly did what most people do so often is they focus on it and then file in their drawer. I do remember thinking of the lazy kid and the fast kid and how uhm so often they can either be connected...or just....I don't know where I am going with that.

In this excerpt Troy cannot recall the article and yet tries to use some of the vocabulary to appear he has some recollection. In the end Troy cannot make a connection and gives up. When Jenna was asked in a PD session about her recollection of the Boaler (2008) article, she explained “I did not do the homework, but did [at least] start it.” Jenna had previously read excerpts from Lee and Spratley’s (2010) article and did attempt to make comparisons. She drew on key vocabulary and from the experience of her school becoming an IB school and remarked on the existing division at her site in the following excerpt
I think at Downtown Central we tend to have a mixture of inquiry-based and ‘pseudo communities’. If you can’t get everybody close to the same page, it is difficult.

Jenna was picking out key words and attempting to hold a discussion, but her connections were fragmented. In addition, Jenna and Troy moved throughout the first three dimensions of reflective thinking using every day language to articulate their personal theories, but shied away from academic language and any articulation of public theory. Thus, for Jenna and Troy connecting theory to practice was not accomplished during these reflection opportunities.

Concluding Thoughts

This chapter describes the findings from my study of four conflicted teachers. These findings strongly suggest and are affirmed by the literature that core beliefs are related to instructional practices and when beliefs and practices are not congruent, conflict exists (Richardson & Anders, 1994). In accordance with Woolley and Woolley (1999) the study also suggests that in-service teachers possess both behaviorist and constructivist tendencies.

In the first section teachers were characterized according to their beliefs about literacy and learning and incongruences between beliefs and practices were reported. For instance all four participants believed that interdisciplinary teaching was valuable, but used practices that were designed to explicitly keep subject-areas separate.

In the second part of the chapter the core beliefs of teachers were examined. Two categories of teachers emerged: the conflicted-constructivist and the conflicted-behaviorist. The teachers in these categories, however, were experiencing different types
of conflict. The three types of conflict the date suggested were; internal, external or a combination of the two. The role reflection played in and on practice was likewise discussed in order to more thoroughly describe the core beliefs of the teachers in this study. Purposes for reflection differed among the participants depending upon the type of theoretical stance each held. For instance, teachers with behaviorist tendencies used reflection to focus on student behaviors and missed opportunities to think about future instructional possibilities. Teachers with constructivist tendencies set instructional goals and continuously evaluated and made adjustments if the goals were not being met. This was the case of the task card strategy when Summer and Autumn both reflected in and on practice in order to make improvements to the instructional strategy.

The relationship of reflection in professional development was subsequently explored. The PD sessions in this study were tailored to the interests of teachers and not a top-down approach with little or no regard for the individual teacher’s needs. Those who found theory to be relevant to their practice used the PD sessions to reflect and make connections between the two. For example, discussions regarding the assigned articles or book chapter were embraced by the two teachers leaning towards a constructivist stance. The other teachers chose not to either not read or could not recall the assigned reading. The use of the five dimensions of reflection in and on action was also viewed as a means for teachers to examine their own theories. While this study was not designed to elicit the 5th dimension of reflective thinking, the conflicted constructivist teachers in the study interchangeably moved throughout four of the dimensions while the conflicted behaviorists were moving between dimensions one through three. The use of academic language appears to be more difficult for some teachers and not for others.
The questions that framed my research were discussed at the conclusion:

*Question 1: What is the relationship between reflection and professional development?*

*Question 2: What is the role of reflection in teachers’ instructional decision making?*

What is apparent in answering both of these questions is that reflection served as a tool for each teacher, but depending on each teacher’s beliefs the tool was used in different ways. Professional development that was tailored towards their specific interests gave all four teachers a space in which to discuss and reflect on their practice. Understanding the importance of reflection in the instructional decision-making cycle may be a necessary key in providing meaningful professional development sessions.

In sum, through the support of colleagues and an instructional leader, or other (Richardson & Hamilton, 1994), this collaborative process afforded each participant in the ‘case’ opportunities to view new perspectives and theories and to consider new possibilities for their teaching. Reflection on the implementation of the new strategies and theoretical frameworks provided a cycle for teachers to embrace uncertainty and to come to terms with conflicts that surrounded them. Participants’ individual beliefs, however, shaded their uptake of the new ideas and they experienced conflict that remains unresolved.
CHAPTER 5. COPING WITH CONFLICT:
DISCUSSION AND IMPLICATIONS

“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, constitutes reflective thought.” --John Dewey, 1933, p. 6

The purpose of this chapter is to provide an overview of the dissertation study, a discussion of the findings including how the findings inform the literature, and the implications of the study for professional development and teacher education. I also consider possible limitations or “missed opportunities” of my work; in a sense, my reflection is on the experience of doing the study and considerations of what I might have done differently. Finally, I conclude with a passionate plea for educators, policy makers and others to recognize the complexities of teaching and the importance of reflection for teachers to understand their teaching.

Overview

I came to study processes of reflection and professional development because after six years as a literacy professional developer in the Tucson Unified School District, I was concerned about a number of issues. One key issue was that I observed teachers in conflict. Their conflicts not only involved battling student misconceptions and misunderstandings, but also grappling with 1) colleagues and administrators whose beliefs were different from their own; 2) themselves; and 3) mandates from state, district and school site levels. Thus, conflict for teachers can be either external, internal or a combination of the two.
A second issue was that the district adopted a fairly typical “top down” professional development model. For example, after arriving at Downtown Central I was tasked with leading a variety PD sessions that were created by the district. Time was set aside on Wednesday afternoons for the entire faculty to attend whole group sessions for one hour and fifteen minutes. Topics focused on curriculum and instruction (e.g., cultural relevance, close reading, etc.) were pre-determined by district leaders; in addition, supporting scripts and slide shows were provided to sites. The following year district leadership turned their focus to Professional Learning Communities (PLCs) rather than curriculum and instruction. Rather than promoting a research-based teacher directed PD model, however, the district-mandated PLCs remain a “top-down” model for professional development. The PLCs have for the most part resulted in contrived collegiality (Hargreaves, 1994) or what one teacher at Downtown Central coined “pseudo communities.”

My understanding of professional development was that it should be much more “bottom up” and based on teacher’s beliefs and needs. I further understood that teacher change happened when teachers have opportunities to reflect and to examine policies and practices through their personal theoretical beliefs. Through this lens, teachers are more likely to use practices and support policies that are coherent and consistent. Reflection involves thinking about their practice, students, and community by talking, reading, and writing about successes and challenges in their teaching and the school culture.

**Theoretical Framework**

Reflection has a long history in the literature--most prominently in the progressive literature. According to Dewey (1924, 1933/1997, 1938), teachers who do
not reflect on their practice accept every day realities (routine actions) without critique of the quality or outcome of their practice. Dewey was the first to regard teachers as reflective practitioners, a view that Donald Schön (1983) adopted and Gary Fenstermacher (1987) expanded upon. Schön’s work recognized that practitioners reflect “in” and “on” their practice. In turn, drawing from Thomas Green (1976), Fenstermacher (1987) offered practical arguments as “a way to explain how empirical findings could affect practical action” (p. 359) of teachers. Hence, reflective thinking can reveal shortcomings or problems that in turn can assist practitioners to problem solve. Their foundational work continues to influence both theory and research on reflective thinking.

The theoretical literature suggests reflection is both challenging and necessary for teachers. First, studies such as the Reading Instruction Study (RIS) (Richardson, 1994; Richardson & Anders, 1994; Richardson, Anders, Tidwell & Lloyd, 1991) suggest changes in practice can be brought about by examining beliefs. This is achieved by giving teachers the opportunity to link theory to practice by reflecting in and on their practice (Schön, 1983). A second body of literature (e. g., Wildman & Niles, 1987; Wlodarsky & Walters, 2006; Woolley & Woolley, 1999) sought out how teachers become reflective. These studies suggest differences exist in the reflective practices of expert versus novice teachers. Woolley and Woolley (1994) argue teachers concurrently possessed behaviorist teaching, behaviorist management and constructivist teaching belief. The researchers, however, found that some of the constructivist tendencies of pre-service teachers shifted towards more behaviorist beliefs once they became in-service teachers. Third, characteristics of reflective thinking have been considered by researchers. In such studies (e. g., King & Kitchener, 1994; 2004; Livingston & Borko,
a Reflective Judgment Model was used to consider seven different levels of reflective thinking that exist. Finally, Griffiths and Tann (1992) studied five dimensions of reflective thinking that are used interchangeably by experienced, reflective practitioners. Considering the notion of reflective language used to articulate reflective thinking both in and on actions, Griffiths and Tann (1992) along with Lampert (1997) suggest the ability to articulate one’s theory is a necessary component in reflective thinking.

Consistent with the literature, findings suggest the beliefs of teachers change over time (Richardson & Anders, 1994) and when beliefs and practices are not congruent, conflict exists. While differing in methodology, the literature suggested that professional development sessions should be designed to include teachers’ examination of their beliefs. This includes opportunities to both articulate and critique one’s theories—both personal and public. Hence, PD sessions designed in this fashion are more likely to result in teachers adjusting their beliefs to accommodate a new practice. My positionality afforded this opportunity. Stemming from a school-wide PD plan, I designed a research study based upon the theoretical framework discussed above. The guiding questions that framed this study were:

- What is the role of reflection in teachers’ instructional decision-making?
- What is the relationship between reflection and professional development?

Methodology

This study was designed to be an instrumental case study. Stake (1995) explains an instrumental case study is used when there is a “need for general understanding” and a feeling “that we may get inside the question by studying a particular case” (p. 3). The
The case of the four teachers who participated as informants in this study became instrumental in helping me understand more about the role of reflection.

**Participants.** I collected and analyzed data from two primary informants (one sixth grade teacher and one third grade teacher) and two secondary informants (one sixth grade and one third grade). The secondary informants were teammates of each primary informant, and they contributed to reflective discussions.

**Data sources collected and analyzed.** I conceptualized data collection and analysis in three phases. The data collected throughout the three phases included:

- a teacher belief interview for primary informants
- belief surveys for primary and secondary informants
- records of instructional materials, lesson plans, participation quizzes
- seating arrangements
- field notes/photographs from classroom observations
- researcher memos
- audio and/or videotaped classroom interactions
- audio and/or videotaped PD sessions
- field notes and artifacts from PD sessions
- GoReact observation videos filmed among peers in LIMES cohort
- Peer observation comments posted on GoReact videos

The data analysis that took place over the three phases (see Table 3.1) consisted of analyzing the collected data. From this three phase analysis, I developed a concept map (see Figure 3.1) of the instructional decision-making cycle of teachers, made predictions based upon survey and interview data as to what beliefs teachers held, recorded relationships between what a teacher said or did in a variety of settings e.g. (interviews,
classroom observations, PD reflections, etc.) and averaged pre and post survey data to compile Teacher Belief Continuums (see Table 4.3).

**Findings.** The first question framing my research was: What is the role of reflection in teachers’ instructional decision-making?

Examining the types of conflict (internal, external or a combination of the two) and the beliefs (constructivist vs. behaviorist) each teacher held helped reveal the following answers to this question:

- Conflict was inherent in the existing theoretical framework of the district (behaviorist-based) and that of the site (constructivist-based). For example, district mandated curriculum and quarterly progress monitoring assessments are at odds with the collaborative, reflective inquiry-based units and types of formative and summative assessments called for in the IB standards of practice.

- Reflection (in and on practice) was used by all of the teachers to inform their instructional decision-making. Practical argument examples of both types of reflection were recorded for each teacher.

- Purposes for reflection differed among the participants depending upon the type of theoretical stance each held. For instance, teachers with behaviorist tendencies used reflection to focus on student behaviors, while teachers with constructivist tendencies set instructional goals and continuously evaluated those goals in order to make adjustments in their teaching.

- The language used in reflective conversations differed between behaviorist-oriented and constructivist-oriented teachers. For instance, teachers with
behaviorist tendencies used reflection to focus on student behaviors and missed opportunities to think about future instructional possibilities. Teachers with constructivist tendencies set instructional goals and continuously evaluated and made adjustments if the goals were not being met.

The second question framing my research was: What is the relationship between reflection and professional development?

Examining the practical reasoning statements and reflective discussions of teachers during PD sessions helped reveal the following answers to this question:

- Professional development afforded all of the teachers a space in which to reflect upon and grapple with uncertainty or doubt, but they did so in different ways. For example, discussions regarding the assigned articles or book chapter were embraced by the two teachers leaning towards a constructivist stance. The other teachers chose to either not read the assignment or could not recall the assigned reading.

- Reflective language in the form of every day language was used by all to articulate their personal theories, but the use of academic (or formal) language to articulate public theories was only attained by teachers with constructivist tendencies and with at least eight years of teaching experience. For the most part, Jenna and Troy relied on personal theory to guide their reflection rather than employing academic language (or public theory) to guide their reflective thinking.

- Fluid movement between the reflective thinking dimensions interchangeably took place for all, but higher dimensions of reflection were only attained by
some. For instance, the conflicted-constructivist teachers in the study interchangeably moved throughout four of the dimensions while the conflicted-behaviorists moved only between dimensions one through three. Jenna, the veteran teacher, with over twenty years of experience and Troy, an intermediate teacher with less than four years experience, appeared to have similar reflective thinking practices.

I discuss these findings and suggest implications in the section below.

**Discussion and Implications**

This research focused on how collaborative professional development sessions may have influenced the instructional decision-making cycle of four teachers. I was particularly interested in the role reflection played in this process. The four participants were in distinctly different places in their careers: one veteran teacher (Jenna), one relatively new teacher (Troy), one sixth grade math and science teacher transitioning to a specialist position (Autumn), and one former middle school turned elementary teacher (Summer). Summer and Autumn, both with close to ten years teaching experience, appeared to be reflective and able to articulate their thinking; however, the veteran teacher, Jenna, and Troy, a young teacher, were less articulate and reflective.

**Reflecting In and On Practice.**

The professional development sessions offered throughout this process provided opportunities for teachers to reflect. Despite finding that reflection in and on practice brought about different results, what stands out is that the teachers did reflect and that reflection seemed to bring about a change. While Schön (1983) makes distinctions between reflecting in and on practice, at times his lines are blurry between reflecting in
action and reflecting in practice. In this study teachers used reflection in and on practice in differing ways. This action may be of interest in developing PD programs to assist teachers in becoming their own agents of change. Findings suggest behaviorist-oriented teachers, although less-articulated, used reflection in and on practice to bring about particular student behaviors or to explain their own teacher actions. Constructivist-oriented teachers, on the other hand, used their reflections to set goals and evaluate if the goals were being met (e.g., the progression in Autumn’s attainment of her goal). Professional development settings also gave teachers a space in which to reflect in and on their actions allowing for thoughtful discussions and reflections on both theory and practice.

**Reflecting in and on actions.** Findings from this study suggest analyzing teacher talk can help sort through personal and public theories. For example, Summer reflected on the idea of conversational categories teachers used in the Boaler (2008) article. What she “found powerful” was that “the conversation [of the teachers] in case study one [was their] rephrasing.” Summer related the term ‘fast’ and the word ‘slow’ to her own classroom references as “strengths and stretches” rather than strengths and weaknesses. In doing so, Summer was not only able to articulate her understandings of theory, both personal and public, but was also able to move throughout the different dimensions of reflective thinking (Griffiths & Tann, 1997). This may help avoid situations such as the study in which Lampert (1997) recalls teachers were unable to integrate intuitive and formal knowledge. Lampert theorized that part of the problem may have been that the teachers did not have the formal language (academic) to articulate the public theories they were exposed to by researchers. Teachers in Lampert’s study may have relied on
their own personal theories, theories for which they had every day language to articulate, rather than considering the empirically-based theories because they were laden with academic language. Hence, movement between the personal and public theories can be impeded by language; and in a similar manner, movement throughout the five dimensions of reflective thinking may likewise be impeded by a lack of academic language. The language employed by Troy and Jenna when reflecting on their actions was less formal (Dimension 3) than the academic language (Dimension 4) used by their colleagues Autumn and Summer in similar situations.

**Competing Principles**

In Dewey’s 1908 address to teachers with opposing beliefs (instrumental--emphasis on measurable outcomes in learning vs. expressive--quality of experience impacts learning), the progressive philosopher suggested that art and theory come together. Schön (1983), recognizing the split between research and practice, made a similar comparison between technical and artful approaches to teaching.

Competing principles continue to surround teachers; and as mentioned in chapter one, the teachers in this study are no different. Not only do they face dueling principles at a national level (e. g., standards, assessment, evaluation formulas), they are plagued by district level mandates such as the Unitary Status Plan brought about by decades of segregation practices, and at the site level they are torn between the International Baccalaureate Philosophy (constructivist) and the behaviorist practices such as quarterly benchmark testing or influenced by their own personal educational experiences.

So often teachers are offered research-based practices such as those of Marzano, Pickering & Pollock (2001) in professional development settings, but the theory that
supports the best practices remains in the book on a shelf. Lifting the theory off of the pages and connecting it to practice through reflection may offer a means for lifting the book off the shelf and into the hands and minds of teachers. In this way reflection would not only provides a catalyst for wonderment, but also provides the basic ingredients necessary to create the magical concoction referred to by some as the art of teaching. Rather than choosing between binaries or as Dewey (1938) terms it, an either-or, art vs. technical teaching does not have to be viewed as practical or theoretical extremes positioned at either end of a spectrum. Instead, reflective thinking offers teachers a way of merging theory with practice.

Recently I attended a district sponsored professional development session on culturally relevant curriculum (CRC) and culturally responsive pedagogy (CRP). The presenter, a classroom teacher, explained to the audience that theorists often split hairs over the differences between the terms CRC and CRP; but educators should not be concerned with the minutia. The talk reminded me of Schön’s 1983 comparison of theorists and practitioners in which he described

the high, hard ground where practitioners can make use of research-based theory and technique, and then there is a swampy low-land where situations are confusing ‘messes’ incapable of technical solution (p. 42).

The presenter went on to delineate between academicians and practitioners by pointing out that the theory and the magic of teaching are separate. I do agree as Fenstermacher (1987b) states that “[p]ractice is there, its own phenomenon, to be understood in its own right” (p. 421); however, I disagree that theory should be viewed separately from the whole. To me, theory is the catalyst for wonderment and should be embraced by teachers.
Missed Opportunities

Future studies may consider incorporating teachers doing action research to provide opportunities for the fifth dimension of reflective thinking. This dimension is explained in the following section. The use of conversational categories and the role of “other” may likewise be potentially missed opportunities for this study. One last possibility I consider is how the focus on math may have in the end promoted a discipline specific approach as opposed to promoting literacy across the content areas.

Dimension Five: Act-observe-analyze and Evaluate-plan-act

The consideration that different levels of reflective thinking exist is not new to research (Allen & Casbergue, 1996; Collier, 1999; Griffiths & Tann, 1992; King & Kitchener, 2004, Van Manen, 1977; Wlodarsky & Walters, 2006). In this study and in accordance with Griffiths and Tann (1997), movement through the dimensions was viewed fluid rather than hierarchical. However, Dimension 5: Act-observe-analyze and Evaluate-plan-act (which accounts for long-term research) was not attained by any of the four participants. This study was not designed to account for the types of reflective thinking necessary in the long-term research associated with Dimension 5. Future studies which engage teachers in action research along with opportunities to reflect in the other four dimensions may help to increase reflective thinking interchangeably throughout the five dimensions.

Conversational Category Systems

The notion that teachers place students in categorical systems (Boaler, 2008; Dweck, 2006; Gilmore, 1983; Horn, 2007; McDermott, 1993) has been discussed and discouraged throughout this paper. Yet, for purposes of describing the teachers, I placed
teachers in categories, i.e., conflicted-constructivist and conflicted-behaviorist. I did so to point out the conflict teachers were experiencing along with the differences between the teachers’ beliefs. The use of categories was only a starting point used to characterize the teachers, not a goal of the study. By characterizing teachers, categorization assisted me, the ‘Other’ (Fenstermacher, 1994; Richardson & Anders, 1994; Vasquez-Levy, 1993), in pinpointing literature that offered alternative perspectives that might act as a catalyst to shake up beliefs. The terms conflicted-constructivist and conflicted-behaviorist were not used to discuss participants. Similar to the need for teachers to avoid use of categorical systems to describe students, professional development leaders should likewise avoid the use of conversational categorical systems to describe teachers. The method described in this study is based upon the core beliefs and understandings teachers allegedly possess; pinpointing and identifying incongruences in beliefs and practices was a necessary component of the research, but should be implemented with caution.

**The Role of Other**

The need for a professional development leader to possess a deep base of theoretical and research knowledge is a necessary component in this process (Richardson & Anders, 1994). Furthermore, Fenstermacher (1994) argues that the role of “Other” is a critical component in eliciting, appraising and reconstructing the practical arguments of teachers. Thus, in order to bring about strong, articulate, empowered teachers it is important to understand the importance of placing knowledgeable, articulate professional development leaders in the role of “Other.” By doing so, we can take aim “at producing teachers” who as Fosnot (1980) describes are “decision makers, researchers and articulate change agents” (p. xiii).
Interestingly, Horn & Little (2009) found that “teacher participants reported being more frank and open with the researchers as a result of” their [the researchers’] participatory roles (p. 188). Rather than being viewed as outsiders, Horn and Little each taught a class along with the teachers in their study. While the researchers did not take on the role of Other as I did, like me, Horn and Little (2009) were privileged to frank discussions as colleagues rather than an outside researchers. By doing so, participants were more at ease in the interactional spaces that were created during PD time. Thus, it is important to note that teacher interactions may be enhanced or inhibited depending upon the levels of trust among themselves and/or with the Other.

**Interdisciplinary Approaches**

The university–led class concentrated on disciplinary literacy, not content area literacy; this may have mitigated my efforts to promote interdisciplinary planning and approaches. Borasi and Siegel (1989) contend beliefs about mathematics may be a cause for concern since beliefs can be “unfounded and hence dysfunctional for learners” (p. 25). For instance, examples of teachers’ misrepresentations of mathematical thinking that Borasi and Siegal (2000) point out are:

- There is only one correct way to solve any mathematical problem--usually the rule the teacher has most recently demonstrated to the class;
- Mathematics is a solitary activity done by individuals in isolation;
- Students who have understood the mathematics they have studied will be able to solve any assigned problem in five minutes or less;
- The mathematics learned in school has little or nothing to do with the real world (Schoenfeld, 1992).
While Borasi and Siegel were focused on math students’ beliefs, teacher beliefs stemming from their experiences may likewise be unfounded. After reviewing the interview transcripts of the primary participants, it appears that beliefs about math learning are tangled in a similar fashion to beliefs about the reading process. The very same belief statements pertaining to math that Borasi and Siegel (2000) recognized were also unfounded literacy beliefs theorists parenthetically mentioned below have argued against. For example,

- There is only one meaning in a text (Rosenblatt, 1995);
- Reading is a solitary act (Street, 1984; 2006);
- Good readers are fast readers (Smith, 1998);
- Academic reading has little to do with real world reading (Schoenbach, Greenleaf & Murphy, 2012).

Thus, the opportunity to infuse literacy strategies across the content areas may have been missed because 1) the disciplines were viewed separately and 2) unsubstantiated beliefs about math and literacy teachers may have held.

**A Revolutionary Approach to Change**

Over the course of seven months and through a systematic three phase design my study comes to a close. And thus, my story becomes part of their story (the teachers I worked with during this study); and together our story becomes a story of hope and change. The purpose of this study was to investigate reflection: specifically how reflection relates to professional development and the role reflection plays in the instructional decision-making of teachers. Systematically, this instrumental case study was directed at the reflections and actions of teachers while aiming at larger structures
(e. g., top-down PD models, completing educational principles, etc.) in need of transformation or in other words, occasioned by what Freire (1970/1993) terms “praxis” (p. 107).

Stake (2010) reminds us, “the complexities are great, and the Powers that Be end up setting policy based upon the pressure they are under and the experiences they have had” (p. 214). Perhaps some of the interpretations offered here can in some small way address some of the misconceptions that exist in our educational institutions whether in the classroom, at a site or district and state levels. Reflection in and on practice offers a way to assist teachers in combating some of the conflict they are faced with and at the same time help them make more congruent instructional decisions. Wildman and Niles (1987) argue and I concur that “administrators have to develop a radically different vision of how teachers should function if the model of teacher as reflective practitioner is to receive a fair opportunity” (p. 30). Through reflection those of us in the educational trenches may find ways to both grapple with and embrace conflict as a catalyst for change rather than compliance.
APPENDIX A: TEACHER BELIEF INTERVIEW QUESTIONS

Background
How many years have you been teaching?
And grade levels that you have taught?
During that time the types of kids typically that you have worked with?
Preservice education, where did you do that?
Were there any other special programs you participated in? Reading endorsement?
Where did you do your student teaching? In TUSD?
What grade was that?
Did your cooperating teacher teach reading?
Did you feel good about the experience?

Reading and Learning to Read
When a student enters into ___ grade what should that student be able to do in terms of reading?
What should a really good reader be able to do versus a vulnerable or poor reader?
When a student leaves ___ grade what can they do?
What accounts for a good reader? (e.g. parents, genetics, etc.)?
Learning styles, does that play a part do you think (or not)? At any grade level?
Is it possible for a teacher or other person to help a poor reader become a good reader?
How would you define reading comprehension?

Reading Instruction
Could you describe the way you teach reading comprehension?
Did you find it hard in middle school versus 3rd grade?
Where did you learn to teach that way?
Did your experience with vulnerable readers help you?
Have you had any graduate level courses or in-service, any kind of PD, that helped you?

Did you ever walk away from a PD or one of those where you observed a teacher or was there a time when you just came back and did something totally different from the way you’d been doing it?

Is there something different you think you might want to do this year?

Does that look very different in 3rd grade than it does in 6th grade.

How do you use groupings?

Have you ever tried to teach whole group?

Why are you a fan of the mini lesson?

What indicates that your lesson has gone amuck or it’s going poorly? To you what’s an indicator or indicators?

How is teaching reading different from teaching math?

In terms of social studies or science do you feel the same?

What about writing?

Would you say it might be more difficult to teach writing than reading?

Do you ever feel like you’re getting behind in reading?

**The Students**

Describe the students in your class. Do you think students in your class have a good chance of making it through school?

What is it that you try to concentrate on or what did you as teacher try to do for the vulnerable?

How do you see yourself assisting or helping a student who is just slightly behind?

How do you assist the students who are doing really well?

**The School**

Do you feel there is a characteristic way of teaching reading comprehension in this school?

Do you know what the other teachers are doing? How do you know?
Have you been able to go and observe the same grade level/other grade level teachers?

Do you exchange materials, ideas, methods or communicate with other teachers?

Do you meet with a colleague(s) who teaches the same grade level?

Do you have time to meet with Specialists?

Do you collaborate with other teachers?

**Personal Reading**

What types of things do you read now when you have the chance?
APPENDIX B: TEACHER BELIEF SURVEY QUESTION CATEGORIES

Behaviorist Management (BM)

1. Establish control first
12. Intervene in disputes
13. Learn best on fixed schedules
19. Direct events to prevent chaos
29. Decorate classroom with posters
30. Take care of materials
31. Important to learn to obey class rules

Behaviorist Teaching (BT) – 9 questions

5. Responsible to make choices
6. Base grades on homework, quizzes and tests
8. I follow the textbook or workbook
9. Teach subjects separately
20. Individual seatwork time
21. Individual assessments
25. I use the teacher’s guide for story discussion
27. Textbook sources are used for curriculum
32. Believe in paper/pencil tests

Constructivist Teaching (CT) – 7 questions

2. Believe in students’ ideas to build curriculum upon
3. Prefer to cluster desks
4. Students create bulletin boards
10. Involve students in evaluating
15. Have students work together
24. Thematic units based upon student interest
26. Assess students informally
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