Employing National Board Certification Practices With All Teachers:

The Potential of Cognitive Coaching and Mentoring

by

Kirsten Anne Diaz

A Dissertation Presented in Partial Fulfillment
of the Requirements for the Degree
Doctor of Education

Approved March 2013 by the
Graduate Supervisory Committee:

Mary Roe, Chair
Catherine Weber
Karen Tankersley

ARIZONA STATE UNIVERSITY

May 2013

ABSTRACT

National Board Certification is an esteemed certification and professional learning and reflective opportunity for teachers. Cognitive coaching is also a method of support many teachers receive over the course of their National Board Certification journey. The certification process involves reflective practices and opportunities for teachers to think differently about their instructional decisions and overall teaching practice. This project involves teachers who are not affiliated with the National Board Certification process. The researcher provides them with reflective opportunities and components from the certification process. An analysis of qualitative and quantitative data unveil the following results. First, coaching and practices associated with the National Board Certification process benefit all teachers. In addition, qualitative data from the findings reveal that frequent and consistent reflective opportunities provided to teachers impact their awareness of content knowledge and their students' needs. The findings from this study also suggest that when teachers are given reflective opportunities, time to collaborate with others, and consistent and frequent time to work with a coach, then student achievement is positively affected.

DEDICATION

I dedicate this project to the teachers who work so very hard to be creative, reflective, and the best teachers they can possibly be for their students. I also dedicate this study to the students I have taught over the years who have inspired me to continue my professional growth and share my passion and commitment for teaching with others.

ACKNOWLEDGMENTS

As I look back over the course of my studies in this doctoral program and specifically this research project, I smile. I realize my role as a change agent has been small but my contribution to the teaching world is noteworthy especially within the relationships I have formed with the participants in this study, the members of my cohort, and my instructors and professors who have guided me a long the way.

First, I would like to thank and acknowledge my chair, Dr. Mary Roe. I thank you for the guidance and support as a writer and researcher. Thank you for your patience as I developed as a writer and researcher and thank you for pushing me to remember the "so what" in my research and "aiming for that period at the end."

I would also thank and acknowledge my cohort and especially Michele Hudak, Jeffrey Williams, and Juan Ceja. When I was discouraged you all would lift me up. The laughter, conversations, and community motivated me when times were tough. I would also like to acknowledge the district, school, and teachers for their willingness to participate in this study. The teachers at Summit Elementary are remarkable. It was an honor to do research at your school. Without the teachers at Summit, this project would not have been possible. It is also important that I thank and acknowledge The Arizona K12 Center. The Arizona K12 Center provided me with cognitive coaching training and coaching support when I was a candidate for National Board Certification.

Finally, I must acknowledge my family and friends. They truly believed in me over the course of the three years and the entire research and writing process. Mom and Dad, you believed in me and constantly reminded me how proud you are. Your support and love helped drive me to stay on course. Alaina Adams, Sarah Baird, Kara Estes,

Nancy Fraccola, Pete Kovats, Dara Stephens, Michelle Steik, Kim Wass and every one of my friends and colleagues who cheered me on these past three years. I will never forget the "doctoral student survival kit" I received for my birthday the summer I started the program. Your sweet gestures, love, and support over the years have brought me sunshine and smiles that were much needed and meant the world to me.

Last but not least I must acknowledge Bryan, Aaron, and Tyler, the three most fabulous men in my life. Bryan, I love you with all of my heart. Thank you for believing in me, listening to me rant about my work and smiling at me when I expressed my passion for teaching and teachers. Aaron and Tyler, my boys. You are my heart. I love you both so very much. Thank you for putting up with me when I was grumpy and tired from writing or studying. Aaron, thank you for picking up your brother from school on the nights I had class. You are a remarkable young man and a wonderful role model for your younger brother.

As I write this my eyes well with tears. I cannot imagine not having my friends and family in my life and being my cheerleaders through everything.

TABLE OF CONTENTS

CHAPTER Page

LIST OF TABLES

Chapter 1

CONTEXT AND RATIONALE

What attributes are associated with quality teaching? This question seems to be ill defined in educational research, but is a prevalent topic in relation to what needs to be a focus amongst teachers and reform in schools. The annual report from the Carnegie Foundation (1989) eloquently states, "Americans have always had a love affair with education but we've been enormously ambivalent about teachers" (p. 16). I believe teachers hold a critical role in the scheme of education and reform. This becomes the basis for my commitment to teach, mentor, and coach teachers who strive to put forth quality teaching practices in their classrooms.

Determining what efforts support quality teaching deserves research and discussion. Having always been committed to deliver quality instruction in my own classroom, I reached a point in my career where I realized I needed to continue to grow and learn more about my classroom teaching practice. Ultimately, I was unsatisfied as I realized I faced a professional plateau. I decided to prepare for the utmost challenge: I sought National Board Certification as a means to improve the quality of my practice and as an opportunity to redefine my passion for teaching. I felt confident in my ability to teach and believed I was a "good teacher." I consistently earned positive performance reviews, parents requested me for their children year after year, but still I desired an opportunity to grow and improve my practice. In addition to wanting to pursue National Board Certification as a means for professional growth, I saw an opportunity to bring National Board Certification to my school and district with the hope of inspiring more teachers to take on the National Board Certification challenge.

The National Board Certification Process

During my National Board Certification process, I spent months analyzing and reflecting upon my teaching practice. I completed a portfolio, which included my analysis and reflection and evidence of my teaching practices. The evidence I submitted to the National Board included a portfolio of written analysis of student work samples, my written analysis and reflections of classroom video recordings, and numerous descriptions and analyses of my documented accomplishments. This portfolio was submitted for review amongst a group of assessors who knew nothing about me except for the evidence and written commentary I provided them. The start of this process began in August of the 2007 school year. I planned multiple lessons to video record connected to the areas or science, math, social studies and art. I also analyzed student work samples linked to my students' development in literacy and writing. I spent countless hours reviewing my video recorded lessons and writing many pages of analyses of student learning based upon my instructional practices.

Some professionals embark on this journey of National Board Certification alone. However, I chose to pursue the assistance and support of individuals who already earned their certification. The learning and assistance I experienced through my work with another individual is associated with Lev Vygotsky's view of developmental learning through social interactions in which a learner might seek support from a more knowledgeable other with a task or process (Loyd & Ferneyhough, 1999; Vygotsky & Cole, 1978; Glassman, 2001). The interactions between the coach (the more knowledgeable other) and myself resulted in my having a deeper understanding of the National Board Certification process and requirements for my portfolio submission

(Forman et al., 1996). I achieved National Board Certification in November 2008. At the time I embarked on the process, there was only one National Board Certified Teacher (NBCT) in the school district. Achieving certification was a proud moment for me and has been the catalyst for my continuous professional growth and learning. I experienced firsthand how the process impacted my practice and motivated me to embrace aspects of quality teaching defined by the National Board for Professional Teaching Standards (NBPTS). These standards are content area specific and linked to the competencies and commitments that accomplished teachers should know and be able to demonstrate as defined by the NBPTS. Since my certification is in early childhood, the following standards were the framework and basis of every decision and reflection I had in my classroom related to my teaching practices and the portfolio requirements for certification. The following Early Childhood Generalist standards are provided by the NBPTS:

- Using Knowledge of Child Development to Understand the Whole Child;
- Partnering with Families and Communities;
- Fostering Equity, Fairness, and Appreciation of Diversity;
- Knowing Subject Matter for Teaching Young Children;
- Assessing Children's Development and Learning;
- Managing the Environment for Development and Learning;
- Planning for Development and Learning;
- Implementing Instruction for Development and Learning;
- Reflecting on Teaching Young Children;

- Exemplifying Professionalism and Contributing to the Profession (NBPTS, 2012).

During the National Board Certification process, I specifically chose to seek support from the Arizona K12 Center, an organization in Phoenix that provides coaching and support for teachers pursuing National Board Certification. I worked with several National Board Certified Teachers who were trained in cognitive coaching. The coaching I received helped me plan and reflect on lessons I was considering to video record or use for submissions as part of my portfolio. Cognitive coaching involves the mediation of thinking between a coach and coachee (Costa & Garmston, 2002). During the coaching sessions, my coach often collaborated with me, paraphrased my thoughts and feelings and provided questions to promote my reflective thinking. These reflective conversations with a coach helped me connect my instructional decision-making to the needs of my students. I often asked myself, "Why is this practice important for these students, at this time and in this setting?" Many times during these coaching sessions, we watched video recordings of my teaching, which helped me look at my practice from a reflective lens and helped me better understand my students' needs and the every day decisions I made to teach them and support their learning. The coach and I often met after I recorded myself teaching and I had the opportunity to watch the video recordings of myself interacting and instructing my students. My skills, style, and the approaches I took to teach were on display in these video recordings. In viewing the recordings of my teaching, and having coaching sessions afterward, I began to think differently about the way I planned instruction for my students, the way I spoke to my students, redirected them, encouraged them, and interacted with them. I also began to think more about what

instructional challenges they represented and how I differentiated my instruction to meet their individual needs. I also began looking more closely at the curriculum and content I was required to teach my students and making sure I had a rich understanding of the academic state standards and the Early Childhood Generalist Standards provided by the NBPTS. In every conversation with a coach, I experienced a high level of self-reflection and learned something new about my instructional decision-making and myself. I became more thoughtful when I planned instructional learning sequences and delivery of new content. I integrated more opportunities for student inquiry and cooperative learning. I even thought more creatively about opportunities to integrate subjects such as math, science and technology and social studies and art. Most importantly, I reviewed what I knew about each one of my students and planned my instruction to be more attuned with their needs, challenges, and learning styles. My approach to teaching completely changed after each reflective cognitive coaching conversation and interaction I had with a coach and NBCT.

Impact on My Practice

As previously mentioned, I began the National Board Certification process in August 2007 and achieved certification in November 2008. Three aspects of my practice were most profoundly impacted: (a) I rediscovered why I became a teacher in the first place, (b) I acquired a more profound depth of knowledge of my students, and (c) I began to think more systematically and reflectively about my instructional decisions. In my everyday practice, I began to reflect on the importance of individualized instruction and became more aware and knowledgeable of individual student's needs. This knowledge supported the instructional approaches and decisions I made within my teaching context

to meet each student's needs. Thus, the level of analysis of my teaching practice and the self -reflection I experienced were transformational and empowering.

The Innovation

I believe the National Board Certification process and the coaching and assistance I received along the way contributed to my personal and professional transformation. I shared my experience with other teachers, principals, and district officials. My experience with National Board Certification, in turn, inspired 36 other teachers to pursue National Board Certification within one school district in the last two years. After my experience with National Board Certification, I became trained in cognitive coaching and have also had the opportunity to provide coaching and mentoring to teachers who chose to pursue National Board Certification. I also coached and mentored the 36 teachers in the Litchfield School District. The coaching I provided these teachers was in addition to my regular professional duties as a classroom teacher and instructional coach. Witnessing teachers' profound self-reflection and hearing how they better meet the needs of their students have been inspirational and ultimately contributed to the initiation of this innovation and study.

As a result of the impact the National Board Certification process had on so many teachers in the Litchfield District, I wondered how I might support other teachers who are interested in refining their practice, but may not desire to seek National Board Certification. Therefore, I intended to design a study that explored certain practices present within the National Board Certification process and employing cognitive coaching and mentoring in their use by teachers who are not seeking National Board Certification.

To summarize, this study examined the role that cognitive coaching and mentoring serves for teachers who are not National Board Certified as they embark on opportunities presented to them through coaching and mentoring to analyze and reflect upon their practice. This study initiated an informal coaching and mentoring structure designed by me. I wondered about the potential wider impact that National Board Certification practices (e.g., cognitive coaching, video taping of instruction, and reflection) might hold for all teachers whether or not they have or have not participated in the certification process. Specifically, I extend the tenets of National Board Certification and the assistance offered to teachers hoping to receive this certification to non-certificate seeking teachers to potentially influence more teachers at a school to refine their educational practice.

Theoretical Framework

I considered the perspectives and theories of constructivism, situated cognition communities of practice, and transformational learning theory to frame this study. These theories involve the association of individuals who aspire to greater levels of learning through modeled and shared interaction. In the following sections, I provide a more complete explanation of the theories and how each connects and particularly applies to this project and theoretical framework.

Constructivism

Constructivist theories are based upon the process in which knowledge is understood as continual and cumulative and the constructivist learner builds on their own learning through interactions with their environment (Knowles, Holton & Swanson, 2005; Lambert, 2002; Wenger 1998). The constructivist theory illustrates how personal

experiences impact the way people interpret and construct knowledge (Lambert, 2002). In this section I review teacher learning and how it connects to constructivism through social learning and situated cognition theories.

Coaching conversations and mentoring practices are examples of how teachers might learn from their environment and others through social interactions. This practice is associated with Vygotsky's (1968) more knowledgeable other theory. When teachers provide peer coaching to other teachers, this is an example of constructivism through teacher collaboration in a peer learning communities (Chan & Pang, 2006). Lambert (2002) reviews the relationship between teacher learning and the link to constructivism. "Constructivism, therefore, has emerged as an important educational perspective that is changing how educational researchers, writers, professional developers, and leaders view the world. This learning perspective has given rise to the recognition that constructivism is critical to adults" (Lambert, 2002, p. 34). Meaningful and relevant teacher learning experiences and opportunities are critical for teachers today. Collegial support through learning interactions and coaching is cited as an approach to teacher learning (Guskey, 1999). The link between teacher learning and constructivism is clear and critical in a constantly changing educational world.

Social learning. Social learning is connected to constructivist learning. Vygotsky's learning processes through social interactions is a constructivist method of learning through informal and formal interactions (Vygotsky & Cole, 1978; Glassman, 2001; Forman et al., 1996). The learning process which occurs through social environments, domains, and interpersonal activities contribute to one's ideals and acts toward making meaning (Cobb & Bowers, 1999; Kegan, 1982). These interactions are

identified as reciprocal social learning interaction. The function of social learning between a coach and teacher being coached relates to creating a process for teacher learning among the two, where a common ground and mutual understanding can be made around teaching. Thus, social learning, within the constructivist theory is connected and relevant to this study. Vygotsky identifies learning from a more knowledgeable other through peer collaboration in informal or formal settings in the zone of proximal development (ZPD) (Glassman, 2001; McLeod, 2007; Vygotsky & Cole, 1978). In this case and study, the ZPD will be the conversations and interactions between the coach and coachee in which collaboration and sharing of new instructional strategies or practices may take place. Specifically, in this study the coach and coachee, may potentially encounter impact and new understandings based on their interactions with each other, the social context of their relationship, and their shared experiences through conversations, collaboration of ideas, and mutual reflection.

Situated cognition. Lave (1991) defines situated cognition as a process in which practitioners within a learning community come together and share and experience and levels of expertise (Lave & Wenger 1991). Further, Wenger's (2000) definition of a community of practice as a group of people who have a shared interests, engage in learning from each other and experience, which in turn results in bonding and relationships are formed through these learning experiences is linked to situated cognition. Lave (1991) also suggests that there are processes of learning in which practitioners gather to discuss commonalities, themes or connections related to one another's practice. The term Lave uses to describe these practitioners and the extent of their learning from one another is referred to as legitimate peripheral participation.

In this study, the legitimate participation and teacher learning may take place through coaching conversations between the coach and teacher as two come together to discuss the teacher's practice. The social learning aspect of Lave (1991) and Wenger (2000) community of practice theory connects to this study because the participants will socially engage in learning through coaching conversations with a coach. The focuses of these conversations will relate to common themes in teaching such as classroom management, standards, and student engagement. The coachee may walk away with new learning from the conversation with new ideas, strategies, or reflections about his/her teaching and instruction and the coach may walk away with new learning from the conversation with new ideas and approaches on how to best support the teachers/coachee.

In summary, these concepts of situated cognition are significant for this study because the purposeful application of incorporating structures within learning conversations through coaching and mentoring teachers is an aspect of constructivism and a part of the innovation in this study. For example, when an instructional coach and teacher work together around specific areas of the teacher's instruction, the focus of the conversation or structured interaction between the two parties offers a joint opportunity for learning. Both parties may construct new meaning from these interactions. The teacher may learn something new that she may want to implement into his/her practice and the coach may learn a potential possibility for further support the teacher may require.

Transformational Learning

Transformational learning theory is derived from Jerome Bruner's four modes of making meaning and an adult learning theory (as cited in Mezirow, 2000). In

transformative learning, the learner critiques old or new experiences from a reflective lens. Therefore, new meaning and interpretations may result in a change of a perspective (Mezirow, 1991). With transformational learning, the learner draw on past experiences, existing knowledge, and awareness to critically examine their assumptions and expectations before making an interpretation (Mezirow, 2000). This section will provide a summation of the transformational learning theory as it applies to this research and teacher learning.

"Transformative learning, especially when it involves subjective reframing is often an intensely threatening emotional experience in which we become both aware of the assumptions undergirding our ideas and those supporting our emotional response to the need to change" (Mezirow, 2000, p. 249). Learners may be challenged to examine their current set of beliefs, which might be uncomfortable in these transformational experiences/encounters. Ensuring that the setting and context of these potential encounters is safe and non-threatening is a critical element of reflection and transformative learning (Cranton, 2006). This is an element that the coach will need to be mindful of when developing rapport during this study and innovation.

Mezirow (2000) further defines transformative learning as a process in which learners transform perspectives, habits of mind, mental models, and beliefs into a more, discriminatory, inclusive, vulnerable, reflective, and emotionally open approach. This new approach and based on transformation learning results in the new opinions and beliefs. These opinions and transformed beliefs lead to more true or justified future actions.

Moreover, transformational learning involves a level of discourse and social participation within a learning context. Mezirow (2000) contends that reflective discourse leads to emotional vulnerability and "involves a critical assessment of assumptions" (p. 292). He notes that the following conditions are optimal for adult learning through reflective discourse and transformation: (1) accurate information, (2) freedom for coercion and self deception, (3) open-mindedness, (4) objective mindset and free of judgment, (5) awareness of the context and openness to self reflection, (6) open and willing participation in discourse, and (7) willingness to accept new judgments, perspectives, and new learning. Research on learning suggests when one learns over a period of time, that transformation of their knowledge and skills will occur (Putham & Borko, 2000).

Adult learning is described as opportunities for individuals come to reflect and think about who they are, while questioning their previously internalized beliefs, values, norms, and mental models (Knowles et al., 2005). The relationship between adult learning and transformational learning is linked to the new understandings one develops about current and past behaviors and the new perspectives one has on their mental models. Adult learning and transformative learning are connected based on the previous mentioned conditions that need to be in place which are optimal for adult learning to occur (Knowles et al., 2005). Again, in this study teachers will engage in adult learning opportunities through cognitive coaching and mentoring.

Within the National Board Certification process, teachers/candidates are required to critically analyze, reflect, and learn from their assumptions of their experiences as an educator, their knowledge of students, and their work as a leader, learner, and partner

with families and the community (NBPTS, 2002). Putham and Borko (2000) discuss the relationship between knowledge within ones' context and interactions and skills put forth based on that knowledge. It is important for teachers to consider how their actions, behaviors, and knowledge affect their students. Therefore, the reflective, behavioral, and collegial aspects of transformational learning are relevant to this study. Participants in this investigation will be part of reflective conversations and discourse that will engage them in new behaviors and thinking about their classroom practice, content, and teaching in completely different ways and may tap into emotional realms of reflection. The following social elements of effective discourse are present within the lens of transformative learning theory: empathy (understanding one another's perspectives and diverse experiences), social skills (the abilities to be adept in getting responses from others), and self-regulation (monitoring one self and maintaining integrity and honesty). Therefore, the social aspect of this study involving a coach/mentor and teacher/mentee is supported by transformative learning theory in which these social competencies will be practiced by the researcher and may occur during interactions with participants and may be present over the course of the investigation.

The focus of the project is intended to explore how constructivist theories and the overall theoretical framework guide this research through coaching and mentoring and act as a transformational approach to promote quality teaching. The overall purpose of this research involves using cognitive coaching and mentoring to support teachers around dimensions of teaching included in the National Board Certification process: (1) knowledge of awareness of students and their needs, (2) application of specific methods for teaching and evaluating student learning (3) self-reflection on effectiveness of

instructional decisions, and (4) collaboration and work with members of the school community. These dimensions of teaching are supported by researchers and scholars as possible areas to investigate, therefore this notion warrants this action research study (Danielson, 2008; Larrivee, 2000; Darling-Hammond, 1998; Lovat & Clement, 2008; Lyons, 1998; NBPTS, 2002; Raber-Hadbeg, 2008; Wellingsly, 2000).

For this study, I will serve the dual role of investigator and cognitive coach as I work with teacher participants. The elements of cognitive coaching will address efforts to plan, reflect, and problem resolve aspects of the teachers' practice that relate to the aforementioned dimensions of teaching included in the National Board Certification process (Costa & Garmston, 2002). These elements of coaching receive further explanation in chapter two. In addition, the mentoring aspects of this study will entail consulting, collaboration, and coaching around the aforementioned dimensions. I will return to these terms and other relevant concepts within my review of existing scholarship.

The four questions guiding this investigation are:

(1) In what ways do teachers not seeking National Board Certification benefit from exploring the practices associated with the National Board Certification process?,

(2) In what ways does cognitive coaching support teachers in developing knowledge, skills, abilities, and commitments associated with quality teaching?,

(3) What is the role of self-reflection with a coach who focuses on specified aspects of teaching?

(4) In what ways do these efforts impact teaching and student achievement?

Chapter 2

REVIEW OF SUPPORTING SCHOLARSHIP

The roots of this study begin with examining the components of The National Board for Professional Teaching Standards (NBPTS.) The relationship between the NBPTS and their definition of quality teaching deserves exploration (Cantrell, Fullerton, Kane, & Staiger, 2008). According to a body of research, quality teaching is defined as what teachers should know and be able to do. This research suggests that teachers should have knowledge of content and pedagogy; skills that demonstrate their ability to monitor students' learning; and beliefs and practices that allow for opportunities to collaborate with others (Berry, 2011; Goldhaber & Anthony, 2003; NBPTS, 2002; NBPTS, 2007; Okpala, James, & Hopson, 2009).

Since coaching and mentoring enhanced my experiences with the National Board Certification process, I want to further understand how the wider educational community perceives the process and the concept of coaching and mentoring. The certification process of The National Board for Professional Teaching Standards (NBPTS) intends to promote quality teaching, which they define as the knowledge, skills, beliefs and commitments associated with what accomplished teachers should know and be able to do. My personal experiences with National Board Certification specifically identified the support, coaching, and mentoring I received along the way that supported my acquisition of these teaching quality attributes. Therefore, I wondered whether teachers not seeking NBPTS certification might benefit from receiving coaching and mentoring linked to components of the National Board Certification process. The following review of literature provides an in- depth examination of five topics: (a) the tenets of NBPTS, (b)

attributes of quality teaching, (c) conditions that support quality teaching, (d) cognitive coaching, and (e) mentoring.

Tenets of National Board for Professional Teaching Standards

The National Board for Professional Teaching Standards (NBPTS) provides National Board Certification as one pathway to improve the quality of teaching. Candidates for National Board Certification engage in evaluation and reflection of their practice throughout their National Board Certification process. Historically, scholars such as Darling-Hammond (2010) and Fullan (2007) see National Board Certification as positively impacting the individual teacher who chooses to pursue certification. In the following section, I fully describe the National Board Certification process and look more closely at the components related to this process. In addition, I address the empirical research linked to the effects of National Board Certification as well as the purpose and challenges associated with the process.

The Process of National Board Certification

The process of National Board Certification provides a reflective opportunity for teachers to analyze their instructional decisions and create a written portfolio of evidence. Their portfolio is then examined, assessed, and scored by people trained in their content. To achieve National Board Certification, a teacher must score well against a set of standards linked to specific content areas by providing evidence in written form (Cantrell et al., 2008). The requirements include planning and designing instruction, analysis of practice, and reflection (NBPTS, 2002). While engaging in self- reflection, candidates for certification analyze their teaching, student work, and accomplishments in their efforts as a learner, leader, and partner with colleagues outside their normal classroom

efforts. The tasks required for National Board Certification include four classroom-based portfolio entries. Each entry includes planning and designing instruction, analysis of practice, and reflection. A final portfolio expectation addresses student impact. This requires an attention to the teachers' work as a leader, learner, and partner with families and the community. As part of the requirements for the portfolio, teachers must video-record their lessons and provide a written analysis and reflection upon two fifteen-minute video recordings (Bond, 1998; NBPTS, 2002).

After its origination in 1987, the NBPTS released a policy statement that included the foundation and framework of the knowledge, skills, dispositions, and beliefs an accomplished teacher must know and be able to do. The framework included Core Propositions: "(a) Teachers are committed to students and their learning, (b) Teachers know the subjects they teach and how to teach those subjects to students, (c) Teachers are responsible for managing and monitoring student learning, (d) Teachers think systematically about their practice and learn from experience, and (e) Teachers are members of learning communities " (NBPTS, 2002, p. 3).

The National Board Certification process provides reflective opportunities for teachers to think about what works well and what needs to be improved. Instead of choosing models from the commercial world that disconnect from their contexts and students, teachers are expected to personalize their instructional decisions (Sato, Wei, & Darling-Hammond 2008). During this reflection process teachers also put their practice up for review. While engaging in self- reflection, they analyze their teaching, student work, and accomplishments based on a set of National Board for Professional Teaching Standards, which differ by content area (refer to www.nbpts.org for a complete account

of these standards). In an effort to further examine the NBPTS and National Board Certification, I now turn to discuss the effects and purpose of National Board Certification.

The Effects of National Board Certification

Whether National Board Certification has positive effects on teachers has receives a mixed review in the existing research (Goldhaber & Hansen, 2009; Serafini, 2002). Some research suggests that the process transforms teachers to thinking about their practice in new ways. In addition, some reports suggest that NBCTs have more influence in their schools and policy than teachers who have not participated in the process (Cannata, McCrory, Sykes, Anagnostopoulos, & Frank, 2010; Anagnostopoulos, Sykes, McCrory, Cannata, & Frank, 2010; Darling Hammond, 2010; Goldhaber & Hansen, 2009; Okpala et al., 2009). Darling-Hammond (2010) notes that the National Board Certification process requires teachers to analyze their practice, engage in deep planning, and evaluate their actions, which in turn may result in positive changes in their practice and new approaches to teaching. Participants from the Cannata et al. (2010) study reported that the certification process transforms teachers who participate in the process into more reflective, aware, and conscious practitioners.

Further, the exploration of the influence and impact that NBCTs have on school culture and policies is yet to be explicitly explained. However, additional findings that emerged from Cannata et al. (2010) and Okpala et al. (2009) studies suggest that NBCTs influence school policy and involve themselves in various leadership activities in schools. In addition, NBCTs have been reported to be more involved in learning communities and

are highly effective in instruction and personal skills (Cannata et al., 2010; Darling-Hammond, 2010; Fullan, 2007; Goetze, 2006; Okpala et al., 2009).

The purpose of National Board Certification is upheld as a means for professional learning (Garet, Porter, Desimone, Birman, & Yoon, 2001; Goldhaber & Hansen, 2009; Serafini, 2002). Some teachers view National Board Certification as a means for personal growth and improvement in their classroom practices (Bond, 1998; Cantrell et al., 2008; Goetze, 2006). Cohen and Rice (2005) focused on the professional learning potential that National Board Certification holds. For example, the certification process is intense, the duration to complete the portfolio requirements is lengthy, an emphasis on pedagogy and content knowledge is required, and collaboration between educators is encouraged (Cohen & Rice, 2005). These examples of learning are evidenced across literature linked to the purpose of National Board Certification and aspects of professional learning within the process. The aforementioned research portrays many examples and effects of National Board Certification. I believe there is room for further exploration and study on the National Board Certification process and practices associated with certification requirements. However, there is research linked to the challenges associated with National Board Certification and this will be discussed in the next section (Cohen & Rice, 2005; Garet et al., 2001; Goldhaber & Hansen, 2009; Guskey, 1999).

Challenges Associated with National Board Certification

In contrast to some of the positive research that upholds National Board Certification as a good thing for teachers, several findings also unveil challenges or offer conflicting findings. One primary challenge the NBPTS faces as an educational

organization is that less that 25 percent of teachers hold National Board Certification. In addition, the process is voluntary and there are mixed reviews and research on whether the process is a beneficial approach to standardize teaching practices (Goldhaber & Hansen, 2009; Hargreaves & Shirley, 2009). The process application to become a candidate for certification currently costs $2565 and the writing required for the certification has been charged with being too difficult and not an authentic measure of quality teaching (Burroughs, 2001; Serafini, 2002). The following examples further underscore some of the challenges associated with National Board Certification.

Burroughs (2001) examined two vignettes of teachers who were candidates for National Board Certification. One achieved certification and one did not. Burroughs states that there could potentially be some problems with the validity in the requirements of the National Board Certification process. He argues that the writing requirements could potentially be noted as unfair. He states, "NBPTS certification can be thought of as a test in writing about one's teaching in which candidates must solve a number of rhetorical problems to be successful " (p. 2). Burroughs suggests that the requirement of writing within National Board Certification process becomes more of an assessment of one's writing skills. One of the candidates felt that the evidence she was required to provide to the national board assessors as part of her portfolio could not possibly reflect her true teaching practices. Serafini (2002) also reports possible challenges with the NBPTS. Specifically, Serafini notes that while the National Board Certification supposedly promotes reflective practice and collegiality amongst teachers, concerns with the process include whether this process actually contributes to competitiveness rather than collegiality. While there are conflicting findings and negative evidence associated

with the NBPTS and National Board Certification, further exploration and discussion of the positive effects of the process is warranted (Serafini, 2002). In a final review linked to research on National Board Certification in the coming section, I report findings on the impact that National Board Certification has on student achievement.

Impact of National Board Certification on Student Achievement

Recently, some scholars have specifically investigated the claims that teachers who are national board certified impact student achievement (Vandevoort, Amrein-Beardsley & Berliner, 2004; Darling-Hammond, 2010). A recent study conducted by the nonpartisan National Research Council cited by the Arizona Education Association found that students taught by NBCTs make higher gains on achievement tests than students taught by other teachers (AEA advocate, 2011). Amrein-Beardsley (2008) also looked at achievement in her study. She found that students of NBCTs gain about one month more per year across subjects than students who do don't have NBCTs as teachers. In general, evidence from these studies support the claim that NBCTS impact student achievement gains more than teachers who are not National Board Certified Teachers (Amrein-Beardsley, 2008; Vandevoort at al., 2004). As with previous claims, conflicting evidence on whether the National Board Certification process produces higher student achievement levels also exists. Harris and Sass (2009) conclude that they found no significant improvement in teaching or productivity among NBCTs in their large sample of teacher participants out of Florida. While the preponderance of evidence regarding achievement gains seems to favor National Board Certified Teachers, more research seems warranted.

Overall, a synthesis of this literature demonstrates further research is needed to determine whether the National Board Certification process provides opportunities for

teachers to improve or enhance aspects of their teaching. Despite conflicting research findings on the effectiveness of NBCTs and the credibility of the National Board Certification process, Darling-Hammond (2010) contends that many teachers who participate in the certification process learn more than from any other professional development opportunity.

This study builds on and expands inquiry into the National Board Certification process. Specifically, this innovation selects aspects of the National Board Certification process, i.e., the Five Core Propositions associated with the NBPTS, provides professional development via a coaching model to share these propositions with teachers not seeking this credential, and investigates their influence on teachers' practices. The findings of this study will further determine the appropriateness of promoting National Board Certification practices as part of a professional development initiative for a broader range of teachers.

Attributes of Quality Teaching

The centrality of five propositions promoted by The National Board for Professional Teaching Standards (NBPTS) to this investigation informed a decision to take a close look at their relationships to attributes of quality teaching stemming from existing scholarship. Therefore, this review moves beyond the NBPTS recommendations to discover and explore other scholars' proposals for aspects of quality teaching. These recommendations generally evolve around the following attributes: reflection, pedagogical content knowledge, and collaboration. I consider each attribute in turn.

Reflection

Reflection is about looking at one's practice at a deeper level and learning from experiences. This attribute applies to this study since participants will engage in reflective coaching conversations. John Dewey (1910/1997) defines reflection as "active, persistent, and careful consideration of any belief or supposed form of knowledge in the light that grounds support it and the further conclusions to which it tends" (p. 6). Likewise, Schoen (1987) presents a perspective on reflection as being a critical practice for teachers. According to Nagel (2009), and based on Schoen's theories, teachers should think about meaningful issues that involve their practice. These ideas are included in NBPTS Core Proposition Four: "Teachers think systematically about their practice and learn from experience" (NBPTS, 2002, p. 3). Candidates who pursue National Board Certification engage in reflection as they examine their practice. This study examines the role of reflection when teachers who are not candidates for National Board Certification work with a coach who focuses on specific aspects of teaching.

The NBPTS provides many opportunities for teachers to reflect upon their practice such as when they review student work, interact with colleagues, and think about previously taught lessons. As mentioned earlier as part of the requirement for National Board Certification, candidates present their reflections and analyses of their teaching practices in written entries for their required portfolio.

Much research related to reflective experiences within education and specifically pre-service teacher preparation programs exists (Freese, 2006; Lyons, 1998; Ward & McCotter, 2004). Lyons (1998) studied reflection in teaching with participants in a teacher preparation program who completed portfolio assessments based on their

classroom practices and new learning. These participants demonstrated emerging and elaborative elements of reflection. Lyons defines "emerging elements" as being able to tell others, justify reasons, and share personal experiences. Reflection is not simply about making change, but a process of critically examining teaching practices. The elaborative elements in Lyons' (1998) study coincide with the National Board Certification processes and practices (e.g., engaging in critical and collaborative conversations about one's practice, bringing to the surface knowledge of one's practice at a deeper level, and increasing knowledge of self in relation to teaching practices). Further, in a study related to pre-service teachers engaging in a peer coaching model that focused on reflective elements, the teachers were less anxious about their teaching assignments when they experienced reflection after working with their peer coach (Cruickshank, Kennedy, & Williams, 1981). In addition, Harford and MacRuaire (2008) reveal that pre-service teachers value opportunities to videotape their instruction and engage in reflective dialogue with peer coaches. To reiterate, much recent research around reflection in education relates to pre-service teachers and teacher induction programs, and further study related to teachers other than pre-service teachers is needed (Freese, 2006; Lyons, 1998; Ward & McCotter, 2004). Most importantly, further study is also needed in relation to whether teacher reflection (a practice and skill) is linked to quality teaching.

A considerable body of theory suggests the importance that reflection holds for educators (Freese, 2006; Larrivee, 2000; Lyons, 1998; Ward & McCotter, 2004; Walkerden, 2009). Simple reflection over a period of time leads to more elaborate thinking and inquiry into one's practice. For example, Raber-Hedberg (2008) reveals research on learning theories and suggests that learning is observing, acting, being,

telling, and listening. Educators can experience reflection through these interactions. When we reflect, our brains open up for more learning to be processed, understood, and more likely applied and integrated in future thoughts, actions, and practices (Raber-Hadbeg, 2008). Therefore, teachers may become more reflective when they slowly transition, apply, and integrate their learning to fit specific contexts and are mindful of continuous reflective opportunities (Larrivee, 2000; Raber-Hedberg, 2008; Schoen, 1987).

The aforementioned research and theories support the possibilities that reflection might hold for educators. For example, when teachers reflect upon their teaching they transform their practice and think about their instructional decisions in new ways (Danielson, 2008; Larrivee, 2000). These findings offer support for including the practice of reflection in this innovation.

Pedagogical Content Knowledge

In this section, I explain the importance of pedagogical content knowledge (PCK) as it relates to student achievement and explain research-based professional teaching standards that outline the importance of pedagogical content knowledge. According to numerous scholars, strong pedagogical content knowledge is the foundation of teacher education and an attribute of quality teaching (Bullough, 2001; Halim, Meerah, Buang, 2010; Holloway, 2002). For these researchers, PCK includes practical and formal knowledge of learning, teaching, and content in ways that students understand and demonstrate learning. The NBPTS (2002) defines content knowledge as the "wisdom about teaching, learning, students and content" (p. 2). Segall (2004) examines the

connection between content and pedagogy in education. Content is linked to subject matter and pedagogy is related to the approach to teaching the content.

Improving pedagogical content knowledge seems necessary to improve student achievement (Darling-Hammond, 1998; Lovat & Clement, 2008; Wellingsly, 2000). Specifically, research shows that teachers who possess a high level of pedagogical knowledge have strong subject knowledge of their content area, have studied their content, and have a high impact on student achievement (e.g., Lovat & Clement, 2008; Rinaldo, 2009; Watson, 2005). In addition, a study in rural schools also revealed the importance of teacher expertise and pedagogical content knowledge in the classroom as factors that contribute to student achievement (Holloway, 2002). Holloway (2002) suggests that providing teachers pedagogical training will shift the culture of schools to focus on teaching and student learning. This notion supports the above research that having strong content knowledge and extensive training and study within that content may impact student achievement.

The Council of Chief State School Officers (CCSSO), through its Interstate Teacher Assessment and Support Consortium (InTASC), recently provided a new set of professional teaching standards that provide a framework for what teachers should know and be able to do in the classroom (Council of Chief State School Officers & Interstate Teacher Assessment and Support Consortium Model Core Teaching Standards, 2011). These InTASC professional teaching standards outline basic principles of effective teaching and pedagogical content knowledge. These standards are centered around the knowledge, performance, and dispositions that contribute to quality and effective teaching. The standards are broken into four categories: (a) the learner and learning, (b)

content knowledge, (c) instructional practice, and (d) professional responsibility. With these standards on the forefront and present in teachers' minds, many schools and teachers will be looking for ways to improve aspects of teaching that will result in student achievement. These standards specifically align to the NBPTS Core Propositions and connect to various definitions of pedagogical content knowledge provided by research.

Evidence from the NBPTS, empirical research, and other literature provide rationale for how pedagogical content knowledge is a critical attribute of quality teaching. According to the above research, pedagogical content knowledge is directly correlated to student achievement gains and professional teaching standards incorporate content knowledge as an attribute and standard for teaching. These research findings and research-based standards are important and relevant to this study because one area being researched is whether teachers not seeking National Board Certification benefit from exploring the practices associated with The NBPTS and the National Board Certification process, and the literature above specifically relates to the NBPTS Core Propositions.

Collaboration

Collaboration is identified as a critical attribute of quality teaching in schools. The NBPTS Core Proposition Five states, "Teachers are members of learning communities." Teachers who seek out opportunities to collaborate with others on curriculum and professional development contribute to the productivity of a school (NBPTS, 2002, p. 3). An example of collaboration occurs when teachers seek the expertise of others in the areas of planning and consultation. Collaboration is yet another attribute of quality teaching that research has shown to have a great impact on student learning and effective schools (Darling-Hammond, 1998; Center for Teaching Quality,

2008). Darling Hammond (2010) and others contend that collaboration in schools leads to high levels of student learning (Croft, Coggshall, Dolan, Powers & Killion, 2010; Hargreaves & Fullan, 2012). Many research studies confirm that collaborative efforts in schools include teachers observing one another, planning together, critiquing each other, and talking about students' problems and overall classroom practices. These efforts lead to high performing schools and student achievement (Darling-Hammond, 2010; Little, 1982; Center for Teaching Quality, 2008; Teachers I.F.G.Y, 2011). Providing frequent, consistent, and collaborative opportunities for teachers are approaches that many schools want to explore as efforts to support quality teaching. Findings from study titled "Workplaces That Support High-Performing teaching and Learning" (2011) suggest newer teachers coming into the profession have certain expectations for what collaboration might look like in a school. Newer teachers "expect collaboration to go beyond talking and sharing ideas about instruction, to opening their classroom doors to share their practice with one another" (p. 12). According to the above research, schools that provide collaborative opportunities for all teachers, new and veteran, produce highly performing teachers which will likely result in student learning and a possible impact on student achievement.

Participants in this study will focus on pedagogy and content when working with a coach. Collaboration is also a critical component of the study. Each of these attributes connects to the proposition associated with the National Boards for Professional Teaching Standards and the National Board Certification process. Further, this study will investigate whether teachers not seeking National Board Certification benefit from exploring these attributes and the propositions associated with the National Boards for

Professional Teaching Standards. The following section will uncover research and literature linked to cognitive coaching.

Cognitive Coaching

Costa and Garmston (2002) define cognitive coaching as a nonjudgmental, interactive strategy that focuses on supporting and cultivating cognitive processes, liberating internal resources, and accessing the states of mind to more effectively achieve goals while enhancing self-directed learning. The states of mind are behaviors and perspectives linked to efficacy, flexibility, craftsmanship, consciousness, and interdependence. The characteristics of these states of mind are:

1. Efficacy: having internal resourcefulness, being a problem solvers, and initiating responsibility
2. Consciousness: being aware of self and others, knowing about ones thinking, and monitoring one's owns decisions.
3. Craftsmanship: being intentional, striving for improvement, pursuing ongoing learning.
4. Flexibility: seeing multiple perspectives, being willing to consider change, adjusting to other's styles and generating alternatives.
5. Interdependence: participating with others, knowing that others share collective expertise, seeking collaboration, balancing one's own needs with the needs of a group (Costa, Garmston, Ellison, & Hayes, 2007).

Cognitive coaching is a structured interaction between a coach and teacher after the teacher has participated in an event or completed a task. The cognitive coach is aware of the state of mind of the teacher being coached. As Costa and Garmston (2002) further

state, “cognitive coaching is the non judgmental mediation of thinking” and “describes the assistance provided to support a teacher in self-directed learning while improving instruction” (p. 12-13). The cognitive coach works with teachers to mediate thinking and foster a development of understanding through reflection and metacognitive processes on how to move forward with practice. This section will include a discussion relevant to the framework of the cognitive coaching model, theories that support cognitive coaching, other support models that are similar to cognitive coaching, and research related to the impact that cognitive coaching has on teachers.

The framework structure for cognitive coaching involves a cognitive coaching conversation. The cognitive coaching conversation provides an opportunity for the coach and coachee to engage in an interaction that supports the intellectual skill of cognitive thinking. Verbal and non-verbal signals are evident within the cognitive coaching conversation which may lead to a possible cognitive shift in thinking and might also provide evidence of reflective thought (Costa & Garmston, 2002). Costa and Garmston suggest that the purpose of a cognitive coaching conversation is to mediate the cognitive thinking process of reflection. The thinking around planning and reflecting become the focus of the conversation. Reflection is associated with practices linked to quality teaching, mentioned in the previous section. The mediation of thinking through the possibility of four support functions within the cognitive coaching conversation is part of the framework of cognitive coaching. These support functions include consulting, collaborating, evaluating, and actual coaching and mentoring (Costa & Garmston, 2002). For example, a coach may realize that the teacher being coached might benefit more from a collaborative conversation or consulting rather than an actual coaching conversation.

The two support functions that are relevant to this study are collaboration and coaching. There might be times when the teacher may be stuck and cannot reflect or plan and may need assistance from the coach and request collaboration or advice/consulting on how to move forward.

Through exploration of theories related to cognitive coaching, the relevant features of inquiry and thinking have come to surface. Kuhn (2005) discussed the intentional act of people engaging in "knowledge acquisition" (p. 61) and that one's capabilities are enhanced when experiencing this type of intentional thinking. The participants of cognitive coaching may experience these high levels of intentional thinking. Furthermore, Costa and Garmston (2001) uphold that cognitive coaching provides an opportunity for a coach to work with a teacher to individually support the teacher in thinking about planning an upcoming lesson or reflecting upon a lesson or experience and identifying the potential impact and meaningfulness of the instruction. Kuhn, (2005) notes that cognitive thinking is an intellectual skill. Kuhn states, " If we regard thinking as something people do in the context and purposeful activity (rather than as a hidden competency they possess), we can only see that people are likely to employ more demanding thinking skills only to the extent they appreciate the value" (p. 14). The following list is a summation of the aspects of cognitive coaching as they relate to constructivist theories, which is one theoretical lens in which this study is framed: (1) cognitive coaching is parallel to constructivist environments because cognitive coaching encourages self-directedness, (2) cognitive coaches view themselves as mediators of thinking and involve a community of learners, (3) cognitive coaching draws upon constructivists approaches by beginning with raw data and direct experiences in which

the teacher being coached can later make abstractions, (4) the constructivist theory suggests a sequence aligned to the framework of the cognitive coaching conversation, (5) constructivist cognitive coaches challenge mental models and limiting perspectives, and (6) cognitive coaching also supports on demand learning and alerts verbal and non-verbal signals, which lead to possible cognitive shift and evidence of reflective thought (Costa & Garmston, 2002). Thus, theories relative to thinking and learning connect to cognitive coaching and the possibility that teachers experience new learning or knowledge acquisition.

While the roots of cognitive coaching did not begin with Costa and Garmston (2003), today many models for supervision in schools include elements of their cognitive coaching framework. Cognitive coaching and the supervision models typically include a pre-conference, observation, and post-conference. The difference is the terms used. In cognitive coaching, "planning conversation" or "reflecting conversation" is used instead of "conference." The primary difference between coaching and supervision models is that coaching practices are not used for evaluation purposes (Showers, 1996). These supervision models are designed to provide feedback and support and evaluate teachers to improve their classroom practice. In the clinical supervision model (Marzano, Frontier, & Livingston, 2011), the emphasis on dialogue reinforces effective classroom practices through observation and data analysis. Marzano et al. (2011) explain the developmental/reflective model as a holistic model focused on the development of teachers through various methods including action research. The developmental/reflective model emphasizes various aspects of teaching and classroom practices. Both of these models encompass certain attributes of cognitive coaching,

specifically dialogue related to instruction, reflective dialogue, and dialogue related to specific data. Many schools have adopted these supervision models as a framework to evaluate teachers.

Various research findings on cognitive coaching identify the extent that coaching impacts teachers and students. This research suggests that some of the tools and skills that a coach must possess include content skills, interpersonal skills, and pedagogical expertise. These are noted as essential skills that coaches must possess to support teachers. Collaboration and planning for professional development are also suggested as part of the role of a coach (Borman, Feger, & Kawakami, 2006).

Moreover, this study's innovation explores teachers working with a coach to promote reflection and collaboration. As mentioned in a previous section, collaboration is considered by some researchers as an attribute associated with quality teaching. Collaboration is also a feature of cognitive coaching. Thus, the collaborative features of cognitive coaching are relevant to this particular study because participants may collaborate with a coach during cognitive coaching sessions. Cognitive coaching also includes a focus on planning and reflection, which again relates to attributes of quality teaching as previously mentioned. The specific coaching and collaborative practices used for this study will be explained in detail in the upcoming methods section.

The Effects of Coaching

Coaching is reported to have effects on teachers and student learning. Coaching provides an increase in teacher effectiveness, teacher empowerment, teacher efficacy, and a willingness to try new things in the classroom (Batt, 2010; Knight, 2008; Edwards & Newton, 1995). According to Edwards and Newton (1995), if coaching structures are

implemented correctly, an increase in teacher empowerment occurs. For example, Edwards and Newton contend that the specific cognitive coaching process encourages teachers to try new things and results in higher levels of efficacy amongst the selected group of teachers. Batt's (2010) study on teacher effectiveness in teaching culturally and linguistically diverse students revealed that cognitive coaching provides reflective opportunities and collegiality amongst teachers when implementing new methods of instruction. In addition, teachers who were cognitively coached reported positive effects on students' learning. Lipton (1993) examined cognitive coaching as a method to support teachers in transforming information into knowledge. Lipton determined that the participants expressed vulnerability and insecurity regarding their effectiveness but also experienced positivity in regards to areas of successful application of areas of their expertise. The participants in Lipton's study expressed value and appreciation for many of the tools that engaged their reflective practice and an increased repertoire of teaching practices. Further, Lipton's findings reveal that cognitive coaching is a powerful process that provides opportunities to mediate professional knowledge. In addition, the cognitive coaching framework "offers multiple lenses for focusing attention, organizing and processing information, linking prior knowledge, building conceptual understanding, and facilitating transfer of new professional knowledge to new settings and situations" (p. 13).

Not all studies concurred with these positive findings. Carver (2009) examined the individual professional learning process and the professional development opportunities that enhance teachers' learning. Carver indicated that teachers felt that the literacy coach in the school was not helpful in changing their practice because the coach

was virtually non-existent. Moreover, the coach in the study felt that teachers had a perception that she was evaluative in her position. Teachers indicated that the coach was overworked and overwhelmed by paperwork and duties required by her other than coaching. Moreover, in a study affecting areas in teaching such as planning, instruction, analyzing, evaluating, and application of practice, some teachers reported that cognitive coaching had little impact on the teachers' thought processes (Edwards & Newton, 1995). These studies are important in noting the opposing beliefs, potential effects of coaching and assertions as they relate to the impact of cognitive coaching. Therefore, cognitive coaching deserves further research and study.

The innovation in this study includes teachers participating in cognitive coaching conversations with a coach. The possibility that the teachers will experience reflection is something that will be explored. The specifics of the innovation capitalize on the attributes that this review of research supports (i.e., pedagogical content knowledge, collaboration, and reflective practice). The positive coaching attributes of cognitive coaching (i.e., establishing rapport, paraphrasing, and questioning) will be applied as participants explore the practices associated with the National Board Certification process. This study will consider whether cognitive coaching that includes these identified attributes supports teachers who do not seek the National Board Certification accreditation.

Conditions of Quality Teaching

Having explained the certification process associated with the National Board for Professional Teaching Standards (NBPTS) and their relationship to attributes of quality teaching stemming from existing scholarship, I now turn to conditions that support

quality teaching as another critical matter related to this study. According to Hargreaves and Fullan (2012,) quality teaching cannot occur unless certain conditions are in place within a school environment. I unveiled the following conditions: leadership and trust, an established coaching/mentoring structure, and job-embedded professional development (Goldhaber & Hansen, 2009; Forsyth, Adams, Hoy, 2011; Fullan, 2007; Lovat & Clement, 2008). Since my innovation for this study occurs in a school setting, understanding these conditions assume overall importance. To illustrate each of these conditions I discuss each in turn.

Leadership and Trust

Several scholars agree about the importance of leadership and trust within a school (Forsyth et al., 2011; Fullan, 2007; Lovat & Clement, 2008). Forsyth et al. (2011) suggest that high quality and effective leadership is a critical condition that supports efforts of quality teaching. When high quality and effective leadership is in place, sustainable conditions such as ongoing teacher collaboration and trust amongst teachers improve (Watson, 2005; Wright, 2009). According to Wright (2009,) effective leadership provides opportunities for teachers to reflect, problem solve, and make decisions and actions towards school improvement. Further research suggests that trust amongst staff and leadership enhances teacher collaboration and student learning (Goddard, Goddard, & Tschannen-Moran, 2007).

Devecchi and Rouse's (2010) study about teachers, teacher assistants, and school team members suggests that trust amongst a school staff may be challenging, but ultimately when team members trust one another's competence and knowledge, teacher effectiveness and collaboration become possible. Teachers in schools often collaborate

with other teachers, leadership, support staff, and assistants. When teachers collaborate and work together with students' interests in mind, positive results in teacher effectiveness and students' achievement occur (Devecchi & Rouse, 2010). Of note, Hargreaves and Fullan (2012) discuss the conditions of quality teaching and the importance of teachers working together. They argue when conditions such as stable leadership are not in place then interactions amongst staff may be unproductive. The presence or absence of leadership and trust might assume importance for the teachers involved in this innovation. I further explore them in the action plan and design of the study.

Mentoring Structure

An established mentoring structure within a school is yet another condition deemed significant in supporting quality teaching. The American Federation of Teachers and American Institute conducted various case studies of schools where teachers worked towards improving their teaching and overall conditions of the school (Teachers I.F.G.Y, 2011). The findings revealed that the schools made efforts to provide new conditions to improve performance. One new condition was a mentoring structure in which the school provided access for new teachers to work with a veteran/mentor teacher over a period of time. The mentor provided support with lesson planning, observing, and evaluation of classroom practices. The mentor also provided general feedback and comfort to the new teacher. The teachers in this study perceived their work with the mentors to be beneficial. These benefits lend support to the consideration of a mentoring structure and system within schools.

Teemant, Wink, and Tyra (2010) discuss the implications of implementing a mentoring structure within a school. A mentoring structure may influence teachers' practices by increasing teacher collaboration and teacher inquiry (Hanson & Moir, 2008). Further, a mentoring structure may provide new ways for the mentors to learn from one another and the teachers they work (Wildman, Magliaro, Niles, & Niles, 1992). In addition, mentors encourage reflection as a way for teacher to improve their practice (Wildman et al., 1992; Freese 2006). These implications suggest that future research is necessary to deem mentoring as a means to improve quality teaching (Hanson & Moir, 2008; Teemant et al., 2010).

Mentoring and coaching. Lipton (1993) defines mentoring as involving consulting, collaboration, and coaching. Mentoring is a process in which learning focused relationships are formed with the intention of offering support, creating a challenge, and facilitating a professional vision which are upheld by the mentor and mentee (Lipton & Wellmen, 2001). The different approaches to coaching that are similar to mentoring include peer coaching, cognitive coaching, literacy coaching, and instructional coaching (Knight, 2008). A question as to whether mentoring and coaching support teachers in developing knowledge, skills, abilities, and commitments associated with quality teaching is still an area that requires further exploration and research. Nevertheless, research from the National Assessment of Educational Progress (NAEP) demonstrates that there is a link between quality teaching practices and a coaching/mentoring model established within a school environment.

Much of the literature that defines and explains the roles, skills, duties, and responsibilities of a coach is similar to definitions of a mentor. Therefore, coaching and

mentoring may be synonymous terms because of their similarity. According to Borman, Feger, and Kawakami (2006), teachers have certain perceptions of what coaching and mentoring should include, i.e., modeling instructional practices, co-teaching, co-planning, providing feedback, consultation, opportunities for reflection, and planning of professional development. In addition, research shows that collaboration and planning for professional development at a school site along with having strong interpersonal skills are all suggested as duties and responsibilities of a coach (Borman et al., 2006). Some of these mentioned practices, duties, and responsibilities are relevant to this study because this innovation involves cognitive coaching and mentoring. They led to the inclusion of the following practices: providing feedback, consultation, and reflective coaching conversations.

In Knight's ongoing study with the Kansas coaching project, he determined that equality is critical in the relationship building between a coach/mentor and teachers. Knight (2011) conducts ongoing research at the Kansas Coaching Project at the Center for Research on Learning at the University of Kansas on instructional coaching and works with coaches, teachers, and school districts across the United States and Canada. His work consists of partnering with schools, instructional coaches, administrators, and teachers with the commitment to improve student learning and instruction. Knight states, "Skillful coaches use a variety of subtle communication strategies to create equality between themselves and their collaborating teachers" (p. 23). A critical premise for Knight's research findings and a theoretical foundation that revolve around the factors he presents is the importance of building relationships and creating partnerships with

teachers. He explains seven principles that align with a partnership approach between the coach and coachee:

> (1) equality - professional learning is done with teachers rather than training done to teachers, (2) choice - teachers should have choice regarding what and how they learn, (3) voice - professional learning should empower and respect the voice of teachers, (4) reflection - reflection is an integral part of professional learning, (5) dialogue - professional learning should enable authentic dialogue, (6) praxis - teachers should apply their learning to their real-life practice as they are learning, and (7) reciprocity - we should expect to get as much as we give. (p. 46).

These principles apply to the coaching aspect of the innovation since it involves a relationship between the coach and teacher. Thus, the critical relationship between a coach and a teacher is a starting point for a strong learning partnership.

In addition, research related to the relationship between a coach and teacher can be most clear within a peer-coaching model. Peer coaching is one aspect of coaching. Edwards and Newton (1995) conducted a study in which 40 teachers participated in peer coaching. After the teachers/participants received coaching, many reported that they felt affirmed, empowered, and competent. They felt the experience of receiving coaching was transformational and that they had new insight and perceptions of their responsibilities at the school. Overall, the teachers who participated in peer coaching sustained a new joy for teaching. These findings are relevant because the researcher in this study serves several roles: practitioner, peer, and coach. These multiple roles will receive more explicit explanation in the methods section.

Harris and Sass's study (2009) suggests that NBCTs who have mentored other teachers helped to improve the overall effectiveness of the colleagues with whom they mentored and worked. Mentoring and coaching serve similar purposes. Practices such as collaboration are noted as an attribute of quality teaching and an aspect of mentoring for which this study proposes to explore. In addition, the relationship between the mentor and teachers is also a critical component of this study. More explanation of the innovation and the role of the coach/mentor and teacher will be explained later in the methods section.

Aspects of the assistance provided to teachers pursuing National Board Certification invite exploration since limited research exists on many of their premises such as the effect of coaches and mentors working with teachers as they examine their practice through ongoing study, self-reflection, and collaboration (Freund, Russell, & Kavulic, 2005). Due to limited research on the potential impact that NBCTs who also serve as mentors has on teachers and students' achievement, this notion further supports the rationale for action research.

Effective Professional Development

A final condition that supports quality teaching is linked to effective and embedded professional development. Professional development is defined as an approach for teachers to improve teaching and learning in the classroom (Borko, 2004). Many types of professional development are considered to be ineffective such as when teachers are mandated to tale a workshop, class, or meeting. Kennedy (2006) suggests effective professional development provides teachers with an opportunity to address specific problems connected to their practice. Embedded professional development is

considered to be ongoing and sustainable and linked to transforming and improving teacher practice (Borko, 2009). Embedded professional development provides teachers with learning opportunities to draw upon their own experiences, knowledge, classroom context, work with colleagues, and relevant issues in education (Croft et al., 2010). Effective professional development must support teachers' growth and understanding of the subjects they teach (Borko, 2009).

Activities such as coaching and mentoring where teachers receive feedback and discuss and examine their classroom practices with another person may be considered an embedded and effective professional development approach because teachers learn about themselves and their practice by analyzing their practice and skills (Croft et al., 2010; Knight, 2011). Kennedy (2006) suggests that when teachers have the opportunity to engage in learning that is meaningful and relevant to their practice they can better solve problems and grow internally.

In a study related to professional development and effectiveness of activities involved, teachers who have opportunities to learn through embedded professional development such as coaching and mentoring experience positive effects (Teemant et al., 2010). Mentoring and coaching as a form of embedded professional development for teachers is an area yet to be fully explored and deserves more research (Teemant et al., 2010; Wildman et al., 1992).

Combining the Pieces

The purpose of this literature review was to critically examine the National Board for Professional Teaching standards, aspects of teacher quality and the various conditions that support it, as well as several of the features included in this study (e.g., coaching).

In final summary of the reviewed literature, a growing body of research suggests that National Board Certification practices support quality teaching. Some of these practices include the conditions within a school that support efforts to promote quality teaching and the attributes of quality teaching that connect to the NBPTS. Further, National Board Certification is suggested as one pathway to improve quality teaching. National Board Certification practices offer opportunities for analysis and self-reflection and the option to work with a coach to support these practices. Cognitive coaching also provides a framework for structured collaborative dialogue in which analysis and reflection can me mediated by the coach. The relationships that are formed to make new meaning from new experiences are a critical piece of transformation and teachers who have a mentor may possibly engage in a strong partnership with the coach/mentor with whom they work. These areas are all related to the research questions for this study: (1) In what ways do teachers not seeking National Board Certification benefit from exploring the practices associated with the National Board Certification process?, (2) In what ways does cognitive coaching support teachers in developing knowledge, skills, abilities, and commitments associated with quality teaching?, (3) What is the role of self-reflection with a coach who focuses on specified aspects of teaching?, and (4) In what ways do these efforts impact teaching and student achievement? In the upcoming chapter, I detail the specific steps and processes to answer these questions.

Chapter 3

RESEARCH DESIGN

Methods

According to the U.S. Department of Education, and the results from a teacher follow up survey (Keigher, 2010), approximately 3.6 million actively working full time teachers were teaching in the United States in the year 2010. Most recently, the National Board for Professional Teaching Standards (NBPTS) revealed that in the United States there are close to 100,000 NBCTS (NBPTS, 2012). The National Board Certification process is a highly esteemed and rigorous process associated with accomplished teaching (NBPTS, 2002) and yet not all teachers choose to pursue certification as evidenced by the relatively small percentage of NBCTs in the United States in relation to the actual number of actively working teachers (Keigher, 2010; NBPTS, 2011). The purpose of this study is to investigate whether the tenets and practices related to National Board Certification can benefit all teachers, not just teachers who are candidates for National Board Certification. Therefore, I designed the innovation for teachers in this study to receive cognitive coaching and mentoring focused on practices related to the National Board Certification process.

The design of my study involves an action research framework (Stringer, 1999) and employs a mixed method approach (Creswell, 2009, Greene, 2007). The use of mixed-methods seeks a broader and better understanding of a topic under consideration by using both qualitative and quantitative data (Greene, 2007). As a reminder, I will investigate the responses of teachers not pursuing National Board Certification to cognitive coaching and mentoring. Furthermore, Greene (2007) contends that

triangulation of mixed methods is one approach to avoid biases of findings from data analyses. She describes features of triangulation as being intentionally used to assess the same concept. Each method is implemented simultaneously and independently. I selected an array of data to address this call for triangulation. In this chapter, I describe this action research design through an explanation of the setting, action plan, data sources, data collection, and data analysis.

Setting

The setting for the innovation portion of this study took place at a K-5 elementary school (Summit Elementary) located in a low socio-economic suburban community of the Phoenix area. Two other groups of teachers teaching in the same district were also involved to the extent that their student achievement data was used as a data source. The principal and teachers at Summit Elementary School expressed interest in improving performance and enhancing the quality of their pedagogical practices. Of note, National Board Certification had become of interest to many teachers in the district in which this school is located. The tenets of the National Board Certification process also became of interest to the principal who expressed a positive response to the teachers in her school who have participated in the National Board Certification process in the past. However, she realized that not all teachers can afford the certification process nor are they ready for the potential three-year commitment that the process entails. On site, the school has one instructional coach who also provides mentoring and coaching to all teachers. To clarify, the other two other groups of teachers were not directly involved in the innovation portion of the study but their student achievement data was used as a data source. All three groups of teachers taught in the same district and the groups were matched

according to grade levels. The teachers in Group Two who had participated in National Board Certification were teaching at various schools throughout the district. However, for the third group of teachers not involved in the innovation or National Board Certification the setting was consistent with Group One, they also taught at Summit Elementary.

Participants

Participants in this study included twelve teachers whose teaching assignments ranged from grades two to five. Their students also became participants since their achievement scores became artifact data. Finally, my role as the provider of the innovation as well as the researcher also made me a participant. Being a researcher and participant in this study allowed me to collect data and provide the cognitive coaching to teachers as part of the innovation.

Teachers. I used characteristics of convenience sampling and purposeful sampling (Gay, Mills, & Airasian, 2009) to select a desired number of teachers for three sub groups: (a) Group One, a coaching group, (b) Group Two, a group of National Board Certification candidates, and (3) Group Three, a non coaching group. For example, I invited teachers who were available and willing at Summit Elementary and not affiliated with the National Board Certification process to be part of Group One. I then invited teachers within the school district who were available and had participated in the National Board Certification process to be part of Group Two. Finally, I invited teachers at Summit Elementary who were not part of the innovation or had any affiliation with the National Board Certification process to be part of Group Three. The rationale for purposeful sampling of participants for all groups was to match group members

according to similar characteristics (e.g., demographics of students and grade taught). Teachers in all groups had three or more years experience and were all teaching in the same school district. Groups one and three were at the same school. Unfortunately, I had to reach outside of Summit Elementary to get participants who had gone through National Board Certification since there were not enough teachers who had gone through the process and matched the characteristics of the other participants at Summit. The matching of participants reduces the possibility that the outcome related to student achievement might be influenced by extraneous factors (Creswell, 2009; Gay et al., 2009). The different groups of teachers are important to this project and my research question that relates to student achievement. Student achievement data will be compared between the three groups to measure the possible impact of the innovation. This will be explained in more detail later in the data collection section. The coaching group was specifically selected from a school in the district where I and previously worked in and I was familiar with. I approached the principal at first and asked her if I could invite some of her teachers on the staff. Four teachers agreed to participate in this study based on their interest.

Group One (Coaching group). Group One consisted of four primary grade teachers. One taught grade two, a second grade three, a third taught grade four, and the last teacher in this group taught grade five. These teachers received the innovation. They contributed to understanding whether cognitive coaching supports teachers in developing knowledge, skills, abilities, and commitments associated with their teaching practice. In addition this group of teachers engaged in reflective practices associated with cognitive coaching and the National Board Certification process.

Group Two (National Board candidates). Group Two participants were current candidates for National Board Certification waiting on their results to be released in November 2012. This group of teachers had the experience of the National Board Certification process prior to this action research study and received cognitive coaching and mentoring support over the course of their certification process. The student benchmark scores from this group will help to answer the research question related to student achievement.

***Group Three (Non-coaching group*).** The remaining group of teachers did not hold National Board Certification and, like Group Two, did not receive the current innovation. The students of the teachers in these three groups will allow a collection of student data in November 2012, and afford comparisons with the students of the teachers across the three groups.

Researcher. Prior to this action research, I served as an instructional coach within this school district. In that role, I provided unstructured mentoring and coaching to all teachers at my school site. I also have extensive experience with cognitive coaching as I have mentored and coached candidates for National Board Certification since 2008. During the course of the implementation of the innovation, I held a different teacher leadership position at another educational institution. My role and title was Professional Learning Director at the Arizona K12 Center. I worked with agencies, consultants, and facilitators to provide professional learning opportunities for teachers across the state. Based on my expertise and experience with National Board Certification, mentoring teachers, and cognitive coaching, I approached the teachers for Group One at Summit Elementary School and invited them to be part of this research

study. My specific role as researcher in this project involved collecting data from all qualitative and quantitative measures and analyzing the data and findings. My specific role as practitioner and provider of the innovation included organizing and scheduling coaching sessions with each participant from the coaching group. I also acted as cognitive coach and mentor to these teachers over the course of the innovation. The coaching sessions entailed cognitive coaching conversations, video recording coaching, and feedback and reflective coaching questions in each participant's reflection log. I considered the importance of developing relationships and rapport with each teacher. This was critical as it is important to build trust between the coach and teacher as discussed in my review of supporting scholarship. I had never met the participants in the coaching group prior to the innovation, so over the course of the innovation we built a professional mentor/mentee relationship. To clarify, my role of researcher and practitioner was intertwined because of the extent of the personal and one on one coaching and mentoring I provided to each participant. It was important as a researcher to inform my participants of the agenda and procedure of my innovation, the neutral stance I played as their coach and researcher, and my position to support them along the way as coach (Stringer, 2007). Most importantly, my role in data analysis was critical. I had to put personal biases aside since I developed relationships with each of the participants. The implications of my intertwined role will be discussed in the findings and strategies for validity sections.

Students. The students of the teachers were not directly involved in this study. However, they provided artifact data for comparing the student achievement amongst the three groups of teachers. The artifact data included student district benchmark scores and

was provided to me in the form of averages. More explanation of this data source will be explained later in this chapter.

Timeline

The timeline for the innovation and data collection spanned the months of August 2012 to December 2012. The sessions with the coaching group participants (Group One) involved planning cognitive coaching conversations or reflective conversations. As the researcher, I arranged 8 to 10 coaching sessions with Group One, the coaching group, over the course of four months. Each meeting was prescheduled after school hours and involved coaching conversations focused on specific aspects or attributes of their teaching and practices associated with the National Board Certification process (e.g., video taping, analysis of student work, and analysis of videos of their teaching). During these months I also conducted one group interview with all of the participants from the coaching group and collected student achievement artifact data from the other groups of teachers. The rationale for these data sources will be explained later in the data sources section. The overall innovation and data collection ended in December 2012.

Action Plan

The four-month action plan for the innovation involved cognitive coaching conversations and mentoring of four elementary teachers. The cognitive coaching conversations were structured around a planning conversation or reflecting conversation (Costa & Garmston, 2002). The planning conversations were coaching sessions about lessons that the teachers were thinking about and had not yet planned. The reflective conversations took place after they had completed a video recording or a lesson that they desired to discuss with a coach. After they video recorded a lesson, we planned a

reflecting conversation at another date to discuss their video recording. At times the participants chose to discuss instances from their teaching or lessons that were not video-recorded. For example, one participant chose to talk about a particular scripted curriculum that she was learning and wanted to talk through her nervous feelings. A planning conversation includes the following purposes: (a) clarify the goals of instruction, (b) specify success indicators of the instruction and a plan for collecting evidence, (c) anticipate strategies, approaches, and decision on how to monitor them, (d) identify personal learning focus and process for self-assessment, and (e) reflect on the coaching process and explore refinements. The reflecting conversation includes the following goals: (a) summarize impressions from instruction and recall supporting information/data, (b) analyze causal factors based on the supporting information from the instruction, (c) construct new learning based on the previous experience, (d) commit to application of new learning, and (e) reflect on the coaching process and explore refinements (Costa & Garmston, 2007).

Prior to each meeting, the participants selected a lesson or idea as the focus of the cognitive coaching conversation. As practitioner and cognitive coach, I also engaged in collaborative efforts when necessary with the participants and stepped out of the structured cognitive coaching conversation to support them. For example, if the participant was stuck on an idea or was not ready to plan a lesson, I collaborated and brainstormed some possibilities. The intention of this collaboration was to help the participants form ideas, approaches, solutions, and a focus for inquiry. The purpose was to help them solve instructional problems, apply and test shared ideas, and learn together. This type of response is identified as a support function in the cognitive coaching

framework and literature related to mentoring practices (Costa & Garmston, 2007). This approach coincided with the National Board Certification process and I wondered if providing a consistent and systematic approach to mentoring and cognitive coaching would result in teachers developing more knowledge, skills, abilities, and commitments associated with quality teaching. The ultimate goal of this innovation was to explore whether teachers benefit from their cognitive coaching planning and reflective conversations with a cognitive coach and through their reflective practices associated with the National Board Certification process.

Data Sources

My purpose for gathering data was to understand whether teachers not seeking National Board Certification benefit from exploring the practices associated with the National Board Certification process and whether cognitive coaching supports teachers in developing knowledge, skills, abilities, and commitments associated with their teaching. Several sources of data contributed to this goal. I collected data between August 2012 and December 2012 (see Appendix B for a fuller account of this data collection timeline). Following a recommendation by Creswell (2009), I selected instruments and methodologies for a concurrent collection of data from multiple sources (i.e., electronic portfolio, video recording observations of their teaching, one semi-structured group interview, a pre/post individual semi-structured interview with each participant, pre/post reflection survey, self- reflection log, cognitive coaching summaries, digital ethnographic photo collection, and reading benchmark assessment data). A description and rationale for each source follows the research question it proposes to help answer.

In what ways do teachers not seeking National Board Certification benefit from exploring the practices associated with the National Board Certification process?

Electronic portfolio collection. To monitor the development of these teachers, participants in Group One, the coaching group, kept a digital self-reflection log, a digital photograph log, and video recordings of three lessons or classroom learning experiences over the course of the innovation. These data relate to the portfolio requirements for National Board Certification where candidates must submit a video recording, written analysis, and reflection of their experiences in the written commentary of the portfolio (NBPTS, 2010).

Video recording note-taking template. The coaching group video recorded three lessons or learning experiences in their classrooms. Each video recording was approximately 20 minutes in length and part of a larger learning sequence. This practice aligns with the National Board Certification portfolio requirement. In addition to video recording three lessons, the participants completed a video recording note taking template. Colasante (2011) discusses the value of video recording teaching and the potential for reflective opportunities while viewing the video recordings through collaborative discussion. The video note-taking template is based on a template used and developed by the Arizona K12 Center (see Appendix C for a sample of the template). The template helps candidates for National Board Certification find evidence in their practice aligned to the NBPTS Evaluation of Evidence Guide of both the middle and early childhood generalist documents derived from the National Board for Professional Teaching Standards. I selected the specific Evaluation of Evidence Guide linked to each participant's content area (e.g., early childhood, middle childhood). The participants

completed this note-taking template after they watched each video recording of themselves. The purpose of the template is to provide them with a guide to support them in reflection. I piloted this instrument in my experiences working with three teachers in Spring 2012. After each participant video recorded a lesson I met with them individually and facilitated a semi-structured cognitive coaching conversation around their video (Colasante, 2011). Some of the reflective questions I asked included:

1. What was your overall impression of the video recorded lesson? How do you think it went?
2. What were some of the specific successes indicators you observed from your students?
3. What were some of your actions that attributed to your students' successes?
4. What did you notice and learn about yourself from this video recording lesson
5. How did this conversation support your learning?

We looked for evidence aligned to the certificate area for National Board Certification for their grade level and teaching context (e.g. middle childhood or early childhood). They used the note-taking template to individually write down examples from the video that represented key attributes of their teaching associated with the Evaluation of Evidence guide from the NBPTS. For the attributes that did not align with the Evaluation of Evidence Guide, we discussed their rationale for these non-examples of evidence that did not connect to the NBPTS.

Semi-structured group interview. Gall, Gall, and Borg (2003) contend that group interviews are becoming more increasingly interesting to researchers. Therefore, I conducted one group interview with the participants in the coaching group and engaged

them in a group discussion with specific protocol and questions aligned to the NBPTS Five Core Propositions (see Appendix D for the group interview protocol). In a semi-structured interview the researcher asks participants a series of predetermined questions with the allowance to probe, clarify, and follow up to obtain deeper responses **(**Gall et al., 2003). I audio recorded and transcribed the interview data. I controlled the scheduling and mutually agreed upon a time with all of the participants. The interview encompassed a carefully planned discussion and a nonthreatening environment. These characteristics were important so the participants felt comfortable to influence each other with their responses. I also controlled the question pace and sequence to fit the needs of the participants while also maintaining structure to the questions related to the Five Core Propositions (Gall et al., 2003).

In what ways does cognitive coaching support teachers in developing knowledge, skills, abilities, and commitments associated with quality teaching?

Pre/post semi-structured interview. I conducted a pre/post semi-structured interview with the participants in the coaching group (see Appendix D for a complete list of pre/post interview questions). The interview protocol consisted of five open-ended questions designed to encourage participants to openly discuss their experiences with coaching. The interviews took approximately 30 minutes per person and were conducted in person or via the telephone. I audio recorded and took notes during the interview and later summarized the interview data (Creswell, 2009). Audio recordings allowed me to focus on the interviewee and to fully engage with each participant. As a result of a piloting of this interview tool with three teachers in Spring 2012, I revised the questions. Specifically, I edited the wording in the post interview. For example, instead of the

original questions stating 'In what ways do you make efforts to improve your overall knowledge and awareness of your students?' I modified it to reflect the innovation, i.e., 'How might working with a coach impact your overall knowledge and awareness of who your students are at this time and this setting?' During the pilot, the teachers stated that they appreciated having the questions to follow and go back to if necessary as they were providing responses. Therefore, I also provided a hard copy of the questions during the actual interview to each of the participant.

In what ways does cognitive coaching support teachers in developing knowledge, skills, abilities, and commitments associated with quality teaching?

What is the role of self-reflection with a coach who focuses on specified aspects of teaching?

Pre/post reflection survey. In order to understand the role of reflection with a coach who focuses on specific aspects of teaching, I designed a survey that would help me understand the approaches in which the participants in Group One reflect on and strengthen the effectiveness and quality of their practice. The participants in Group One completed a pre survey in August 2012 and completed the post survey at the end of the innovation in December 2012.

The first section of the survey focused on demographic information such as grade level, years, and teaching (see Appendix E for the survey). Five constructs were measured using this questionnaire. These constructs were derived from the National Board for Professional Teaching Standards, from the Early and Middle Childhood Generalist reflection standards (NBPTS, 2010 p. 51, 59). The constructs are: (a)

individual sources, (b) outside sources, (c) intrapersonal ideas, and (d) professional aspects.

The first measurable construct, *individual sources,* asked participants to answer questions related to their individual classroom contexts such as assessment of student work, interactions with students, parent/teacher conferences, and student data and how these individual sources contribute to how they may or may not reflect and refine their practice.

In the second construct, *outside sources,* the questions related to ways in which outside sources such as seeking advice from colleagues through informal discussions, peer observations, collective examination of students work and action research may or may not contribute to the ways participants reflect and refine their practice.

The section for the third construct, *intrapersonal ideas,* focused on the contribution of participants' own cultural background, biases, values, and personal experiences to how they reflect and refine their practice. In addition, this set of questions also asked participants if participating in personal learning activities contributed to their reflective practice.

Outside topics was the fourth construct. The questions in this construct related to research, political and outside topics, and ideas that may or may not contribute to the ways participants reflect and refine their practice.

Professional aspects, the fifth construct, addressed life-long learning and professional aspects of teaching that may or may not contribute to the ways participants reflect and refine their practice. Participants used a Likert ranking scale from 11-0 to rank themselves on various statements within the questionnaire.

Reflection log. The coaching group had access to an on-line forum/reflection log created via Google docs where they responded to the following reflective questions after each individual coaching session: *How has the coaching conversation supported your thinking? What areas of your instruction or goals do you want to focus on for the next meeting?* This practice allowed participants to share reflections and thoughts after each cognitive coaching session. Participants replied to the reflective questions prior to the following cognitive coaching session. After a participant submitted a posting, I asked them questions to further their reflective thinking. Participants also provided a reflective response on the Google Doc after each video recording.

Cognitive coaching conversations summaries. The notes and summaries written by the researcher during the cognitive coaching conversations served as a data source. Each coaching group participant engaged in at least one audio-recorded semi structured cognitive coaching conversation (see Appendix F for a sample of the question stems). The cognitive coaching conversation served as a tool and method that supports reflective thought and was a critical element of this data collection. The conversations were semi-structured and followed the planning or reflection conversation map as previously explained in the action plan. Each independent conversation took approximately 30 minutes. Questions followed a specific questioning map that parallels researched-based practices from The Center for Cognitive Coaching (Costa & Garmston, 2002). Each cognitive coaching conversation was recorded and summarized. I did not take notes during the cognitive coaching conversation in order to maintain rapport with the participants; because building and maintaining rapport is a critical characteristic of cognitive coaching (Costa & Garmston, 2002). This is important to ensure the validity of

the authentic cognitive coaching conversation. However, at the conclusion of each conversation I recorded notes in an electronic log describing the conversation and then later I listened to the audio recording and enhanced my written notes in more descriptive summary. Researchers support this practice as a method to ensure validity and maintain a data collection trail (Corbin & Strauss, 2008). The notes and summaries were compiled into an electronic word document for each participant. Each conversation was labeled with the date of the occurrence and whether it was a planning or reflecting conversation. In the written summary I noted the topic, the probing questions I asked, paraphrases, and the final reflective question.

Digital photo collection. Characteristics of digital ethnography are linked to the digital photo collection measure for this study. For example, the coaching group participants used visual images to provide a visual representation of social contexts that represented the images that potentially trigger reflection (Mason, 2005; Pink, 2007). Group One participants took no less than five and no more than ten photographs over the course of the innovation. The participants also were given a log/template (see Appendix G) to label each photograph and write a brief description for each image. A coinciding unstructured interview also took place when the entire digital photo collection was complete. Follow-up dialogue between the researcher and the participants allowed the participants to explain the photos they took, ensured the success of the photographic data collection, and allowed for richer participant responses. Participants were allowed to freely tell their stories according to how they saw the pictures as representing images that trigger reflection (Corbin & Strauss, 2008; Mason, 2005; Pink, 2007).

In what ways do these efforts in working with a coach, focusing on specific aspects of quality teaching impact teaching and student achievement?

Reading benchmark student assessment artifact data. The Fall and Winter district benchmark assessments taken by three student cohorts in August and November were collected. The district benchmark assessments measure concepts aligned to the Arizona State Standards. The student cohorts represented each participant in each group. The rationale for this data measure was to identify a trend for each of these student cohorts' achievement data and establish the mean scores for each benchmark assessment for each class. Cut points and labels such as Falls Far Below (FFB), Approaches (A), Meets (M), and Exceeds (E) were used to establish a mean for their Fall 2012 and December 2012 benchmark assessments. For example, a mean percentage of 25% may represent the number of FFB, 10% APP, 50% M and 20% E. These percentages are examples of potential student cohorts' scores aligned to one participant. The purpose for this approach was to determine whether a possible relationship between student achievement data, the innovation, and these three groups of teachers existed.

Qualitative Data Analysis

The qualitative data analysis procedures for interviews, video-recording templates, reflection logs, digital photo collection, and cognitive coaching summaries included three steps. First, I organized all of the data, which included writing summaries for each interview and coaching session. I also wrote a separate summary for each of the written qualitative sources including the reflection log, digital photo log, and video recording templates. I organized each source according to type, i.e. interview, video templates, coaching summaries etc. The next step involved reading through each

qualitative data source separately (Creswell, 2009). The initial process of reading through all of the raw data helped me get a sense of the participants' responses and the tone of each interview (Corbin & Strauss, 2008). This allowed me to thoroughly reflect on all of the information collected and begin the foundation for future coding and interpreting the data (Corbin & Strauss, 2008; Creswell, 2009). The final step included open coding the data and organizing it into chunks and segments. Before bringing meaning to the raw data the coding process involved labeling and segmenting the raw data into categories. The process of coding provided me the opportunity to ask questions about my raw data, dig deeper into the meaning behind the raw data, and continue to paraphrase the data into segmented categories. To determine what categories arose from the coding process and among the four participants and to quantify these data, I used descriptive statistics (Miles & Huberman, 1994). This method helped me see the numerical relationship between things that got coded. Also, this approach helped to describe common themes and to illustrate the participants' practices aligned to National Board Certification, their reflective statements or evidence based statements linked to their teaching practice, which also aligned to the NBPTS core propositions. I highlighted words and phrases that became my codes from all of the qualitative sources and computed how often each of these were discussed in our coaching conversation. I computed how often these codes were mentioned in the participants' reflection log, video-recording note taking template, and interviews. These various codes were then aggregated into categories and given labels. After I generated the frequency list of these categories from each qualitative data source, I titled each data source and listed them separately and in separate documents. I created the list using a two-column table in

Microsoft Word. In the first column I provided the list of names of categories that emerged from the original raw data. In the second column I defined each category. Finally, I then, identified themes that arose after I collapsed the data from the various sources.

Throughout the entire data analysis process, I also used the researcher's method of memoing. Memoing provides a record of the researcher's thoughts and ideas during this process of coding raw data (Christianson & Burke 2008; Corbin & Strauss, 2008; Glaser & Strauss, 1967). Since an analysis of qualitative data involves interpretive process, strategies such as memoing help track a researcher's ideas, questions, and assertions over the course of data analysis. Each time I reviewed my data I kept an electronic log where I wrote notes, thoughts, or ideas as I listened to my audio data, video data, or written data. I used a separate Microsoft Word matrix/table to insert the codes that emerged from my notes (Greene, 2007). Specifically, the table was formatted into three columns. The first column included the category, the second column included the data and codes that supported the category, and the third column included a researcher's memo interpreting the data. After all sets of qualitative data were complete and the two tables were complete, I reviewed the raw data a second time and my memos to obtain a general sense of the evidence collected, which helped to understand the overall meaning (Corbin & Strauss, 2008; Glaser & Strauss, 1967).

The process for documenting how I analyzed my qualitative data including the activities and decisions I made along the way is defined as an audit trail. The purpose for the audit trail is to document each stage of analysis for this study (Gall et al., 2003). In my electronic word document/log in Microsoft Word, I documented each meeting and

interaction with the participants. I also noted the types of interactions, for example when we had a coaching conversation verses an interview or email exchange.

Quantitative Data Analysis

Quantitative data from the pre and post survey were entered into SPSS to determine the mean, mean differences, and effect sizes between variables (Smith & Glass, 1987). The five constructs were compared against each other as well as the demographic data to determine correlations between approaches in which participants reflect and refine their practice and the role of reflection when working with a coach who focuses on specific aspects of teaching. In this case, participant responses were inputted into SPSS and a Pearson correlation table was used to determine the relationship and any possible statistically significant relationships between participants' responses to each construct.

Student achievement data from each participants' students' reading benchmark assessment data were collected and measured at the end of two intervals and compared between the three participant groups. I used the mean scores from the each class of students to identify a relationship between student data from the three student cohorts that represent each group of participant. According to Smith and Glass (1987), " a positive, or direct relationship is one in which high scores on a scale or distribution of one variable are paired or associated with high scores on the other variable" (p. 200). The mean from each group was compared. I inputted the mean scores into a table as a visual display. The visual display served as a tool as I narrowed my focus and triangulated my understandings about whether the students' scores differed across teachers (Gay et al.,

2009). These findings will evaluate the impact of the innovation on student achievement results during the Fall and Winter of 2012.

Strategies for Validity

To ensure the validity of qualitative analyses I conducted member checks (Creswell, 2009). When deemed appropriate and necessary, I conducted member checks. I used these, as opportunities to further understand the appropriateness of my codes and inferences. In addition, I used concurrent triangulation from the analysis of data to corroborate findings from the various sources and to check the validity of the potential findings (Creswell, 2009; Gall et al., 2003; Greene, 2007). In this case, to collapse information from all measures I looked across data sources and synthesized the data to better explain and justify in more detail the findings and provide a more balanced approach for answering my research questions and avoid biases associated with the data sources. Further, triangulation allowed me to determine what findings were consistent across sources. It also provided more information about the strengths and weakness of each data source.

In this discussion of data collection methods and data analysis procedures, I outlined the variety of qualitative and quantitative sources and the rationale for each source. I also outlined the specificity of my dual role as research and practitioner for this study, since my innovation is personally linked to one on one cognitive coaching and mentoring provided by me.

Chapter 4

ANALYSIS AND RESULTS

I used quantitative and qualitative data to explore findings associated with this research. In this chapter I first recap the sources and the research steps I chose to uncover themes and trends across sources. Then, I explain the findings from the synthesis of these data.

I provide a clear understanding of the quantitative and qualitative sources within the inventory tables as they describe each source and the contents (see Tables 1 and 2). The narrative text will describe the data as I present the findings from the quantitative sources: the reflection survey and student achievement benchmark data (Creswell, 2009). Then, I will explain the qualitative data sources, which led to themes discovered from the cognitive coaching summaries, reflection logs, digital images, and interviews. Since the survey, the cognitive coaching, and reflection logs speak to the teacher's reflective practice it was important to triangulate those data. In the triangulation process, I constantly compared the qualitative codes from the qualitative sources. In this case, the comparisons included cross checking the consistency of the qualitative codes and comparing the qualitative data with the quantitative survey data.

Quantitative Data Sources and Findings

Pre/Post Reflection Survey

I generated descriptive statistics by using IBM's SPSS Statistics, v. 20 to analyze the reflection survey given to participants in the coaching group in Fall and Winter. The rationale for only selecting the coaching group was linked primarily to my research question about the role that cognitive coaching plays in teacher's reflective practice. I

compared the collapsed means and standard deviations from these two administrations. The mean represents the average score on the test for the group and the standard deviation indicates the amount of score variability, or how spread out the scores are (Gay et al., 2009). The mean scores for the participants in Group One for Fall and Winter along with the standard deviation scores were inputted into a spreadsheet for each construct of the reflection survey (see Tables 3-7). The constructs within the survey were derived from the National Board for Professional Teaching Standards, specifically the reflection standard for middle and early childhood generalists (NBPTS, 2010 p. 51, 59). The participants in Group One, composed of teachers participating in the innovation, ranked themselves on a scale of 0-11. A score of 0 indicated that a statement was never true for the respondent while an 11 meant it was always true. The ratings in between consisted of responses ranging from the lowest score of a 4 on a particular question to scores of 6-10. For example, in the construct individual sources, the participants responded by ranking themselves on the 0-11 scale on the following statement: "I gain insight and direction about my classroom climate from interactions or conversations with my students." The post survey results indicated higher ratings overall compared to the pre survey.

I calculated and compared the Fall and Winter mean scores and standard deviation for each item and construct. The purpose of this data was to compare the participants' rankings of their reflective practice before and after participating in the innovation. Specifically, this survey instrument included items related to approaches with which teachers analyze, evaluate, reflect on, and strengthen the quality of their practice (see Appendix E for a sample of the instrument).

Student Benchmark Data

For the student benchmark data, I also collected the average scores from the district benchmark test given to students from the classes of teacher participants in all three groups from the fall and winter (see Table 8). Based on the students' scores, they were placed in one of four categories: Falls Far Below, Approaches, Meets, and Exceeds. In order to understand the shifts in students' categorical placements, I inputted the scores into an Excel spreadsheet and compared the placement of students within them (see Table 9).

Quantitative Findings

After I computed the quantitative data, I analyzed each construct within the reflection survey separately. Below I describe the findings associated with the results from the pre and post reflection survey responses within the following constructs: self reflection linked to individual sources, self reflection linked to outside sources, self reflection linked to intrapersonal ideas, outside topics, and professional aspects.

Self-reflection linked to individual sources. Table 1 shows the first measurable construct: individual sources. The highest mean scores on the post survey occurred on items eight (9.5) and ten (9.5). These items referred to the respondents' approaches to gain insight and direction about classroom climate from interactions and conversations with their students and their efforts to analyze standardized test scores and other data (e.g., demographic data) to gain insights that inform curricular decisions and instructional practice. The mean scores on these items increased for these items from Fall to Winter. This shows a possible connection between an increased amount of self-reflection and the innovation.

Self-reflection linked to outside sources. In the second construct, outside sources, three scores arose from the post survey data that applied to outside sources. Question 12 showed an increase in the mean scores from Fall (6.75) to Winter (8), which connects to the participants' approaches to seek advice from colleagues and critique their practice on a regular basis through classroom observations. In addition, question 16, which refers to the participants' efforts to conduct action research in their classrooms or collaborate with educational researchers to examine their teaching practice critically, also had an increase in mean scores. The mean score for this item in the Fall, 6.25, increased to 8.25 in the Winter administration of this survey. The third item from the same construct selected for comparison was item 15, which maintained a mean score of 10.25 in the Fall and Winter. This consistent response demonstrated no change in how the participants ranked their willingness to adjust their practice as a result of analysis and reflection. This lack of change might indicate that the participants came into the innovation willing to reflect and analyze their practice and at the end of the innovation continued to feel positively about their willingness to reflect and analyze.

Self-reflection linked to intrapersonal ideas. The third construct, intrapersonal ideas, included items 17 to 19. Slight increases in the means for each item appeared. The highest score (8.75) in the winter for this construct came from items 18 and 19 which relates to the approaches the participants take in reflecting upon what they read, their participation in workshops and courses that challenge their current thinking, and their use of various introspective personal learning activities to enrich their practice. Compared to self-reflection linked to individual sources, these areas were ranked lower. Based on

these scores, the participants did not rank themselves as high in their efforts to engage in intrapersonal reflective activities.

Self-reflection linked to outside topics. The fourth construct included items 20 to 24. The mean score (9) for item 20 in the Winter was the highest overall of these items and relates to the extent that prevailing research about knowledge of child development, learning, and intelligence affect the self-reflection of the respondents. For each question, the mean increases slightly from Fall to Winter. The evidence from the data indicates that a shift occurred in the participants over the course of the innovation regarding the influence of outside topics on their self-reflection. The range of the mean scores from fall was 7-8.25 and then increased in the winter from 7.50-9.

Self -reflection linked to professional aspects. The fifth construct included items 25 to30. The participants ranked themselves on the extent of professional aspects that contribute to the ways they evaluate and refine their teaching. On item 26, which related to the extent that the participants respond constructively to the many demands of the profession while recognizing the importance of balance and self- renewal, the mean in the fall was an 8.25 and increased to 9.25. The high mean scores from the pre survey became higher. Like some previous constructs, the participants seemingly reflected on their professional beliefs prior to the innovation. However, the innovation strengthened their stance.

Student achievement. Using data collected from the district reading student benchmark assessment for Fall and Winter, I collected student percentages from each teacher in each group for the following areas: the percentage of students who were placed in the falls far below (FFB) category for reading, the percentage of students who were

approaching (APP) the reading benchmark, the percentage of students who were meeting (Meets) the reading benchmark, and the percentage of students who were exceeding (Exceeds) this benchmark. As previously explained, the teachers in each group were matched with similar characteristics. Most importantly, each group represented teachers for grades two to five. The teachers in Group One started the year in the Fall with percentage of 85% of their students falling in the Meets and Exceeds categories. In the Winter this percentage increased to 87.5% of students classified as Meets and Exceeds. The other groups were slightly lower, with Group Two's Fall Meets and Exceeds scores at 86.75 % and with a decrease in the Winter to 79.5% for this same category. The students of teachers in Group Three had an initial fall percentage average of 78.25% and an increase to 81% in the winter (see Table 8.)

As indicated in Table 7, Group One students' winter Meets and Exceeds average scores were the highest among the three groups. Again, Group One was the group of participants who received the innovation. Compared to the Fall, Group One Meets and Exceeds scores (85 %) were in the middle of the three groups. In addition, the number of students decreased from 15% to 12.5% in the Falls Far Below and Approaches categories for Group One in the winter. Group Three had the second highest Meets and Exceeds average for winter, (81%) and Group Three also had the second lowest average in the winter for Falls Far Below (19%). I then calculated the percentage of increase and decreases in each category for all groups (see Table 8). Group Three had the highest increase of scores in the Meets and Exceeds from Fall to Winter. This was an interesting finding but the increase was only slightly (.25%) higher than Group One. However, in the limitations section I discuss the conditions at this school that may have influenced the

teachers in Group Three and their high student achievement scores as they compare to Groups One and Two. These overall compiled trends lead to several important findings. First, the students' scores from the teachers in the coaching group increased. This trend in student achievement seemingly matters as it is linked to the potential of the innovation to influence student achievement. However, it is important to recognize that Groups Two (the National Board group) and Group Three (the non- national board group) also had students who showed progress. Further, the teachers in Group Two had teachers from several schools in the district. They had participated in the National Board Certification Process, but there were not enough participants from one school to match the teachers receiving the innovation. Teachers in Group Three were at the same school as Group One. School conditions such as leadership, trust, and culture may all have been outside factors that contributed to these students' scores (Devecchi & Rouse, 2010; Hargreaves & Fullan, 2012).

In summary, the findings from the quantitative data reveals an increase of self-reflection linked to individual sources and outside sources from fall to winter. There was minimal change in self reflection linked to outside sources and intrapersonal ideas. However the final construct, professional aspects also showed an increase. In addition, the trend in student benchmark scores of Group One reveals higher student achievement compared to Groups Two and Three from Fall to Winter. These results are important and will be further discussed as they link to the research questions.

Qualitative Data Sources and Findings

As explained in Chapter 3, the approaches I took in analyzing the qualitative data involved several steps. First, I read through each source of qualitative data separately:

the coaching summaries, the reflection logs, the video recording notes, and the digital images templates. The next step involved generating codes for each qualitative source that emerged from the raw data (Corbin & Strauss, 1990). This process began by reading through the coaching summaries and noting patterns of topics that arose in the sessions. Then I read through each reflection log and noted additional topics or subjects as necessary. In reading and reviewing the video recording notes and the digital image explanations, I followed the same process. Before I finalized my list of codes, I read through all of the data several times. Next, I created a matrix in Microsoft Word where I listed each code in one column, the attributes associated with the code in a second column, and the raw data pulled from each source in the third column (see Appendix I for a list of codes and attributes associated with the codes). I then turned to another data source and coded the data with the current identified codes and again added codes to my list as necessary. In applying codes, I bracketed phrases, segments, and quotes from the raw data from each data source that potentially linked to the research questions. Before generating themes from the codes, I read through each data source several times to get an even richer understanding of the data. The entire process of aggregating and coding the raw data contributed to the findings and themes.

To understand the strength of the codes across data sources and the relative importance of various themes, I computed descriptive statistics. Some of the themes illustrate links between the participants' current teaching practices and the components associated with National Board Certification Process, such as reflection, knowledge of students, and working with a coach. In addition, I describe themes linked to ways

cognitive coaching supported the participants, and the role that self-reflection played over the course of the innovation.

Three themes arose that explained the participants' knowledge, skills, abilities, and commitments associated with their teaching practices and beliefs: (a) teachers engage in reflective practice about students, their teaching and instructional practice, and their collaborative efforts, (b) teachers have positive beliefs and dispositions towards teaching, and (c) teachers value coaching. In this section I fully explain these themes and findings, their development across data sources, and their links to my research questions.

Teachers Engage In Reflective Practice

Across data sources, teachers often made reflective statements about their students. These findings link to the research question about the role of self-reflection in working with a coach. The findings that arose are also linked to The NBPTS Core Propositions. Below I provide anecdotal examples and a richer explanation of this theme linked to reflection.

Teachers' commitment to their students' learning emerges through reflection. Teachers exhibited an understanding of who their students are and what they need. The data showed that the teachers set high worthwhile goals for their students and they evaluate student learning based on their deep knowledge of who their students are. For example, one participant utilized her reflection log to make a chart of her students' abilities, potential, and specific needs. The purpose of this exercise was to get her to reflect about her students so she could articulate their needs before designing goals. This is a practice that all National Board candidates go through when they begin their portfolio process and it was something that was relevant to discuss at the time. At first she stated

in her log after a cognitive coaching session, "I feel guilty listing my students and their needs." Later after another coaching session where we discussed her feelings she stated in the conversation and mentioned, "analyzing student behaviors allows me to reflect and find ways to improve their overall engagement through specific instruction to meet their needs individually, and how their response affects those around them." When asked, "How do you analyze and reflect on the development of students in your class across content areas?" she said "the development of students vary as they all make progress. Achieving adequate progress is constantly analyzing as it helps me to make instructional decisions.

Another participant's digital images represented reflection about the feelings she had towards her students. She took pictures of the following images that triggered reflection for her: a student's writing journal, students' expository writing, students working together cooperatively, students' use of resources in the room, and a student's science project. She extended her digital images from the required amount of five and kept taking pictures because she enjoyed the reflective process and thinking about what the images represented for her. In her description of the photos she stated that she was proud that her students use some of the tools she has taught them through modeled writing. She also stated that she was excited to see one of her students use resources in the room to assist them with their reading. She mentioned how proud she was that the student who created the science project had taken away deep learning from the ecosystems she has just taught. Her reflection about students indicated her pride when her students' success is a reflection of her successful teaching. She knew her students

were successful because they demonstrated their learning in their projects and student work. This was enough evidence for her to make a judgment that they were successful.

Another participant reflected on his social studies video recording and stated " students seems to make the connect that the settlers lacked a preparedness…. later they were able to compare and contrast Jamestown to other colonies." In his reflection log he stated that he recognized the things he did to support them in their learning. For example, he said that he posed questions and gave time to discuss with partners. He used opportunities to demonstrate how individuals can look at the same information and still arrive at different conclusions. He recognized his students' need to be complimented on their efforts even when they struggle. In addition, in several coaching conversations this participant provided examples of his rich knowledge of his students. When discussing a video recording he said, "I wish I had recorded today's math lesson. One of my kids is on a baseball team. We talked about the relationship between decimals and fractions and percents. We then talked about batting averages." He demonstrated his ability to reflect on his teaching and his students' experiences and how they contribute to their overall learning. These examples connect to the NBPTS Core Proposition One, "Teachers are committed to students and their learning." In addition the quotes and anecdotal examples provided in the coaching session connect to the theme of reflective practice.

Teachers refine their teaching practice after examining their instruction via self-reflective opportunities. The teachers' continued reflection around instructional practices is important since one intention of this research was to discover whether the coaching and mentoring offered through reflective cognitive coaching conversations would trigger it. I found that the teachers reflected on themselves as practitioners and

examined refinements they could potentially make within their practice. For example, one participant stated in a reflective conversation, " I ask the right questions to my students which cause them to think. I provide guidance. I'm good at probing students by asking high level question." After watching a video of himself teaching he stated,

> When I watch this I am a little bothered. The video logistics were stressful. I feel I came across as stiff and that bothers me…. In the future I don't want to come across as stiff… I realized I am a little uptight sometime.

In another statement made by the same participant in a reflective conversation, he said, "Maybe I could do a better job to monitor as we go. I try to get through everything. I realize now I didn't effectively monitor as we went through the learning sequence." The opportunity to engage in video reflective conversations provided evidence of a change in the way he was thinking about his practice. In a post interview, another participant stated, " Having gone through this reflective process I know how to really identify strengths and weaknesses within assignments." The data also suggest that the participants' reflections about their teaching led to their expression of emotions and feelings. One participant focused on a particular curriculum that she wanted to improve in. She was regularly observed and frequently got nervous when the person and observer would come into observe her. The cognitive coaching summaries provided evidence from one particular conversation, she stated,

> I want people to come in and see that I am doing it right. I feel the worst when they come in. I feel like I have to prove something. I really care about being a better teacher. I don't want people that come in to think I'm not a good teacher. I want to videotape and practice so I can get better when people come in.

This supportive statement exudes emotion and evidences the transformative learning process as illustrated in my theoretical framework. For example, Mezirow (2000) discusses the emotional experience in which a person examines his or her current beliefs and that it may be an uncomfortable situation. Also, Mezirow contends that reflective discourse leads to emotional vulnerability. This participants portrayed emotional vulnerability with me as she described her feelings and desire to be "a better teacher" and her rationale to wanting to be better. Another participant stated after reflecting on a video recording, "The biggest thing I recognize when I do my lessons is to make sure I model. I also provide real world connections and stories. Students were able to make the connection based on real life examples." She also stated, " I feel I could have asked more challenging questions." These examples evidence a connection between these teachers' efforts to reflect on their teaching and instructional practice and the dialogue through cognitive coaching conversations and reflective opportunities such as video-recording and written reflection, all of which are linked to practices associated with National Board Certification. These examples of anecdotal evidence linked to this theme goes beyond one or two participants, as each participant provided frequent and consistent examples of reflective practice during the coaching conversations, the reflection log and their descriptions of their digital images. In addition the practice of video recording frequently arose in coaching conversations and provided evidence of the teachers' ability to reflect on their instructional decisions.

Teachers' Collaborative Efforts Contribute to Positive Partnerships with Colleagues and Parents

Based on the frequency of comments in the pre post and group interviews, participants frequently discussed their collaborative efforts. This collaboration specifically involved their role with families and colleagues and primarily focused on their students. These efforts and examples of work the teachers do outside their classroom are key pieces in the National Board Certification process, as candidates need to discuss their efforts as a leader, learner, collaborator, and partner with families.

Participants' statements made over the course of many coaching summaries, reflection logs, and the group interview, which occurred at the midpoint of the innovation, evidenced these participants' efforts to collaborate and partner with families. These efforts include parent and teacher conferences, family nights, communication with the home via newsletters, weekly email communication, attendance at community events, and invitations to parents to volunteer in the classroom.

After reviewing all of the qualitative data, the evidence showed that the topic of collaboration with colleagues did not come up as frequently during coaching conversations, video notes, reflection logs, or digital image explanations compared to the frequency of collaborative efforts with families. It did, however, occur and these collaborative opportunities mattered.

For example, one participant stated, "As a group and team we reflect on what student data is showing us. We have cross grade level dialogue. I go to other teachers and ask what works well for them." In the group interview, the participants gave examples of team planning and collaboration. For another participant,

> My team and I come up with weekly goals. For example, we say by the end of the week they should know fractions and fact and opinion. We talk about each other's students and get ideas about what we can do differently. I also share with parents what we are doing to support them with strategies they can help with at home.

On occasion, these comments triggered connections to the conditions at the school setting, specifically the subject of trust and roles with colleagues and the principals. As previous mentioned in the reviewed scholarship, conditions such as trust, collaboration, and effective leadership contribute to quality teaching, high performing schools, and student achievement (Darling-Hammond, 2010; Little, 1982; Center for Teaching Quality, 2008; Teachers I.F.G.Y, 2011). Despite the infrequency of the topics of trust, effective leadership, and collaboration, these conditions may have already been in place at this school and influenced the extent in which the participants collaborated and partnered with families.

Teachers' Positive Beliefs and Dispositions Towards Teaching Emerged Via Self-Reflection

This theme arose from the high frequency of instances where the participants discussed and reflected upon their beliefs as teachers or mentioned positive dispositions they hold as practitioners. Seemingly, for these teachers the knowledge, skills, abilities, and commitment associated with teaching influenced their beliefs and dispositions. During coaching conversations, the participants frequency discussed their philosophies and rationale for what they do in their classroom and why. Below I provide anecdotal examples as evidence across sources that connect to this theme.

During the group interview we discussed how they provide fairness and equity to all learners in their classrooms. One participant stated, "It's important that ELL learners are not segregated in my classroom. I blend them with the other students who provide them with rich models." Another participant stated, "Student leadership and classroom jobs are part of their classroom ownership. It's important that all my students know they can share openly." An early childhood teacher participant provided an example of how she promotes student leadership and fairness and equity in her classroom, which she believes to be important. Her statement is a statement related to her beliefs towards teaching. She stated,

> I believe in "I do, you do we do… I'm a goofball…. I sing and chant and pantomime. So my students know I am interacting with them…It's not all about me. I need to be open-minded. It's about the team and the students…I have high expectations of myself. My students know that. They take pride and want to do better.

Another participant discussed his belief in having high expectations for his students. He stated, "They will rise to the expectation that we provide them…I enjoy working with kids, sharing what I know and helping them. That has to come first. There comes a point when you say I am going to do the best I can."

These statements came about in coaching conversation when the participants reflected on a lesson they had taught or a reflection they had about themselves that they wrote in their log or stated in an interview. All of the statements relate to their beliefs about themselves and their disposition towards teaching. They evidence that these teachers possess knowledge, skills and beliefs associated with the professional teaching

standards discussed in the review of scholarship. The participants mentioned specific philosophies they have that drive their instruction such as differentiation for ELL learners, building strong classroom communities that promote student ownership, having high expectation and creating an engaging and fun learning atmospheres. These examples provided by the participants are directly linked to the InTASC professional teaching standards and the National Board for Professional teaching Standards. Both sets of standards collectively incorporate the example given by the participants, which reflect the knowledge, skills, and beliefs an accomplished and effective teacher must know and be able to do (Council of Chief State School Officers & Interstate Teacher Assessment and Support Consortium Model Core Teaching Standards, 2011; NBPTS, 2012).

Teachers See the Value in Coaching after Participating in Cognitive Coaching Conversations

After each coaching conversation I asked the participants how the coaching conversation supported their thinking or how the cognitive conversation helped them. The purpose of asking this reflective question was to provide them with an opportunity to verbalize their reflective practice. I did not intend for them to discuss how the coaching supported them, but to reflect on their thinking. Again, this is a key component of cognitive coaching. As researcher and practitioner I stayed true to the cognitive coaching framework and mediated their thinking rather than providing them with input. My dual role definitely influences possible limitations associated with this study and will be discussed later in chapter six. With that caveat in mind, overall and across data sources, the participants valued the cognitive coaching conversations and opportunities to

dialogue about their practice. A participant made the following statement after she reflected on the cognitive coaching conversation.

> I always go and talk about our conversations with someone else and I mention how you make me think about things in more depth. I'm reflecting like crazy. I think about lessons I want to video record and things I want to take pictures of all of the time. I am thinking constantly and thinking about my thinking.

Another participant stated, "This is a validating process. The more I am aware of the goals I set for my students, I create more goals, especially social skill goals…I understand the interactions with my students better now." For a different participant, " The coaching conversation helped me realize about my kids."

In each conversation, I spent time coaching them or collaborating with them based on their needs. For example, towards the end of the innovation and at one of our last coaching sessions, one participant stated, " I have always felt comfortable, but now I have more confidence. I never thought about where I get my ideas." As she explained, she takes every opportunity to observe, learn through experience and take it all in. For her, these learning instances become part of her identity and part of her repertoire. She then stated, "I'm finding that out now as I recognize that I am continuing to grow and that makes me happy." At the end of a coaching session in November, another participant mentioned, " I value the opportunity to look at my practice from a reflective lens. I appreciate the paraphrase and talking with someone who is not an evaluator and where there are no high stakes." The realizations and transformative statements provide clarity to the research question about the role that coaching plays in self-reflection. Again, Mezirow (2000) discusses transformative learning and the process one undergoes in

developing new understandings and new perspectives about their internal beliefs values and mental models. Each participant displayed evidence of this process and this evidence specifically came forth during the discourse and coaching sessions.

In summary, the qualitative data exposed the benefit of teachers engaging in practices associated with the National Board Certification process such as reflecting on students and their instructional practices and video recording their teaching to learn from, reflect on, and refine their pedagogy. Each individual theme also links to the components of the National Board Certification process. In addition, the aforementioned quantitative findings suggest that connections exist between the group of teachers who received the innovation and their high student achievement scores compared to the other groups. The students of the teachers who received the innovation, which included intense mentoring, cognitive coaching, and reflective opportunities, had higher scores than the other groups. Interpretations associated to the quantitative findings and qualitative findings will be discussed in chapter five.

Chapter 5

FINDINGS AND INTERPRETATIONS

As an educator for the past ten years, I have been fortunate to work with many other teachers across the state that care deeply for their students and strive to continue their professional growth. My experiences in this study contributed to my ongoing passion to support teachers in teaching. In this chapter I more explicitly discuss the warrant behind the assertions generated from the findings and the meaning behind the findings as they relate to my research questions. As Smith (1997) explains, "Warranting proceeds one assertion at a time and involves a systematic search through the data record for segments that support or confirm each assertion" (p. 9). Assertions are statements or beliefs that the researcher believes to be true based on an overview and complete understanding of all the data (Smith, 1997). In this action research project, the following assertions arise after triangulating the data across sources:

1. Coaching and self-reflective practices associated with the National Board Certification process provide beneficial validation for teachers.
2. Frequent and consistent reflective opportunities in written form and through verbal social dialogue increase teachers' awareness of their content knowledge and their students' needs.
3. When teachers are given time to collaborate, reflect on teaching, and work with a coach, student achievement increases.

In the warranting of these assertions, I explain ways teachers not seeking National Board Certification benefit from exploring the practices associated with the National Board Certification process; ways cognitive coaching may support teachers in developing

knowledge, skills, abilities, and commitments associated with quality teaching; the role that self-reflection may serve teachers when working with a coach who focuses on specified aspects of teaching; and the connection between the findings and the impact on teachers and their students' achievement. At the conclusion of this chapter I discuss the limitations of the study stemming from the participants and potential researcher bias.

Benefits Associated with the Practices of the National Board Certification Process

The three assertions link to the first research question that explored whether teachers who are not National Board candidates benefit from exploring practices associated with the process. To review, as a researcher and practitioner, I began this study being familiar and experienced with the National Board Certification process. This positioned me to expose the participants to a variety of components of the National Board process. I also provided them with cognitive coaching over the course of the innovation. The following components of the process intertwined within this study: video recording classroom teaching and students, reflective dialogue with a coach, exposure to the National Board Professional Teaching Standards and Core Propositions, self- reflection in a written digital log, and self reflection towards individually selected digital images. I discuss the benefits of practices associated with the NBPTS and how these practices impact teachers: (a) video recording classroom teaching, (b) participating in frequent coaching sessions, (c) the benefit of self-reflection and an awareness of good teaching.

Benefits of Video Recording Classroom Teaching

These teachers felt validated when they watched their teaching and valued the time to watch themselves and reflect with a coach. These positive feelings expressed by the participants affected their confidence level, their awareness of their good teaching,

and their identification of opportunities for refinements. The video recordings, a major piece to the National Board Certification process, proved to be an important component of the innovation. Over the course of the innovation, the participants took time to plan, view, and reflect on their video recordings of their teaching. They embraced the reflective opportunity to watch their videos by themselves and with also with a coach. The participants videoed themselves a minimum of three times and each participant surpassed the minimal three and video recorded multiple times. The qualitative data revealed that the participants valued the set aside time to reflect on their practice from a different lens, a different perspective other than their everyday perspective standing in front of their classroom and their students.

The quantitative data from the reflection survey revealed an increase in the mean scores from the construct of outside sources. This construct relates to the extent that participants take opportunities to critique their practice from a new lens and perspective, work with others to collaborate and learn new ideas, and reflect on new learning with others. The video recording piece and coaching that went along with the video recordings may have contributed as an "outside source" to the overall increase linked to the participants' increased ranking of their reflective practices revealed in the post survey. The qualitative data revealed that the participants initially felt a little uneasy about video recording themselves, but later expressed that they valued the opportunity to see themselves, observe their students, and watch their classroom from a different perspective and viewpoint.

As discussed earlier, Vygotsky's view of developmental learning paralleled the videotaping practice in this innovation (Glassman, 2001; Vygotsky, 1968; Vygotsky &

Cole, 1978). In the role of the coach, I acted as the more knowledgeable other and provided guidance and assistance as I made suggestions for handling the logistics of videotaping in a classroom setting and reviewing the developmental standards associated with the National Board for Professional Teaching Standards. Watching themselves, hearing themselves, and seeing their students from a different viewpoint proved to be insightful for the participants, as they had never experienced this practice on a regular basis. Group One participants (the coaching group) stated they would continue video recording to make changes and improvements in their teaching. As three of the teachers mentioned in the interviews and coaching sessions, when they watched and reflected on their videos, they were impressed by their students' positive behaviors, their cooperative work with each other, their use of vocabulary linked to the lesson, and their justification of their responses when asked higher level questions. The teachers were pleased in themselves for incorporating these lesson components they believed to be important.

Overall, the participants benefited from video recording themselves and their students because it provided them a unique opportunity to reflect on their practice alone or with someone else (the coach who was not in the room during the lesson). The teachers' learning occurred when they realized that video recording could impact the way they think about their instruction and their students and allow their reflection on potential refinements within their practice.

The benefits of coaching apply to the three research questions: exploring practices associated with the NBPTS; whether cognitive coaching supports quality teaching in developing knowledge, skills, abilities, and commitments, and reflection with a coach. These benefits also link to video recording since the coaching took place after

the video recording. The coaching component of the study also linked to research questions one and three. To clarify, cognitive coaching, and the support provided to teachers via a coach, parallels support that candidates pursuing National Board Certification receive. The following benefits stemmed from participants' responses during the interviews, coaching sessions, and reflection logs:

- Working with a coach provided frequent and consistent reflective opportunities that were low pressure, safe, comfortable, and therapeutic.
- Teachers' awareness of content knowledge and their students' needs emerged through the social dialogue in the cognitive coaching conversation.
- Collegial collaboration emerged within the coach/teacher relationship, which supported teachers in new learning via planning lessons, brainstorming of ideas, and celebration of students' successes.

The collegiality between each participant and myself was genuine and demonstrated the participants' individual efforts and willingness to participate in a potential learning interaction. Participants shared feelings during the open conversation that evidenced that these feelings were trustworthy and authentic. Collegiality and openness are cited as a necessary component for learning to occur (Guskey, 2000).

Benefits of Coaching

The coaching sessions and social interactions were a large component of the overall innovation and provided an opportunity for reflection and new learning. As previously discussed, scholars agree that social interactions such as conversations, collaboration of ideas, and mutual reflection may impact the quality of instruction, new teacher learning, and new teacher understandings (Cobb & Bowers, 1999; Kegan, 1982;

McLeod, 2007; Vygotsky & Cole, 1978). All of these social interactions were present in this study and the qualitative data revealed evidence of new learning by the participants such as when one participant learned the benefit of creating more social goals, and another participant learned that reflective practice actually helped her become more aware of the good things she did when she taught. On many occasions, the participants stated how much they appreciated the time to talk to someone not on their campus without concern of high stakes or evaluative measures. The participants admired and appreciated their principal and site based instructional coach, but they also recognized the value in meeting and talking with someone new (the cognitive coach).

One participant expressed new learning when she mentioned she never realized the importance of explicitly creating social skill goals for her students in every lesson. She was aware prior to the innovation that she reinforced appropriate social behavior and expectations in her instruction. After our coaching sessions and thorough self-reflection in the conversations and written log, she expressed an increased importance of planning more defined and specific social skill goals for her students based on their specific academic needs, backgrounds, and developmental needs. She even created an explicit chart in her reflection log describing each student's strengths, weaknesses, abilities, intervention needs, and family's challenges. This chart provided her a resource to generate potential social skill goals. The topic of social skills arose in several conversations with this participant. Seemingly, she experienced an increased appreciation for her awareness of her students' social needs and development strengths. As a result of this participant exploring new ways to incorporate specific and meaningful social skill learning opportunities, she reflected more on her students' needs, abilities,

strengths, weaknesses, and family backgrounds. Although she had an understanding of her students prior to the innovation, talking through her specific knowledge of her students with a coach provided rich evidence of explicit student examples and a clearer rationale for her instructional decisions and social skill goals. For her, our conversations validated her thinking and provided her with an opportunity to enhance and reinforce her knowledge and pedagogy of early childhood education. Although the findings point in the direction that this participant benefitted from the coaching session, the evidence also shows that this participant began the study as a highly efficacious and skilled teacher. She had many experiences being a teacher leader and sought the opportunity to participate in this study as an additional avenue for professional growth. This innovation reinforced her practice and enhanced her self-reflection and awareness.

Another participant frequently mentioned that talking things through with a coach helped her to clarify her feelings, emotions, and instructional decisions. Her passion came forth in her statements when she expressed how important it was for her to be a "good teacher" and for others to also believe she was a good teacher. She stated several times that the weekly coaching felt like therapy. For her, having time to talk and constantly reflect on her feelings, her students, and her instructional decisions helped her confidence level. She even mentioned that she was "reflecting like crazy and all of the time."

Many coaching sessions were reflective cognitive coaching conversations with the intention to mediate the participants' thinking and promote self-reflection. Each conversation ended with the participants smiling, thanking me, and stating that they appreciate the time to talk things through and have someone paraphrase their thinking

and ideas. Many times they mentioned the benefits of paraphrasing responses. The participants' pride, self-reflection, increased awareness, and positive emotions were evidenced within the qualitative data and over the course of the innovation.

In addition to participating in reflective coaching sessions, the participants in Group One (the coaching group) wrote individual electronic/digital reflection logs in Google Docs. As their coach, I often prompted them with reflective questions in the log about the previous coaching sessions or specific questions about their practice derived from the NBPTS. In doing this I exposed them to the questions about their students, their instructional decisions, their efforts to partner with families, their collaboration with colleagues, and reflection on their leadership activities.

Nagel (2009) discusses Schon's reflective theories and proposes that teachers should think about meaningful issues related to their practice. Again, research question three explores the role of self-reflection when working with a coach. The social conversations through cognitive coaching supported these teachers in developing new meaningful ideas, reflecting on effective practices, and reinforcing the awareness teachers had related to their knowledge of content and their students' needs. In this instance, the difference between the coach telling the teachers what to do as opposed to providing a true coaching environment stemmed from the use of the reflective cognitive coaching framework (see Appendix F). As researcher and practitioner it was important that I stay true to the cognitive coaching framework. At times I asked the participants if they would like advice, but I only provided them with advice when then appeared stuck with their words and I felt the coaching framework was not valuable to them. This is an acceptable

part of cognitive coaching and is labeled as a collaborative "support function" (Costa and Garmston, 2012).

Many participants expressed that the coaching sessions were helpful because of the collaboration time it provided. As one example, a participant designed lessons to video record and then sought suggestions. I provided her with some ideas. In a particular coaching session, I noticed she had some science content, text, and language linked to electricity on her classroom walls. It was apparent she was teaching a science unit about electricity to her fourth graders. She expressed that she was discouraged about her expertise in the content knowledge of electricity. We engaged in a planning conversation and within the dialogue she planned an entire lesson and articulated the goals for her students, the instruction, her evaluation and assessment, and the rationale for the lesson. I paraphrased many of her ideas through a collaborative discussion. I also provided her with a few suggestions after she clearly stated the instructional goals for herself and her students. The main goal for her students was to build a circuit with a miniature light bulb, battery, and electrical wire. We met after she video recorded this particular lesson and she expressed how pleased and proud she was in her students' ability to demonstrate their understanding of a circuit and utilize language and vocabulary related to the electricity topic. Many students worked with others to assist each other with building the circuits. She was impressed in her students' cooperation, problem solving, and higher-level thinking. She felt a sense of pride in her ability to thoroughly plan, design, implement, and reflect on her instruction and student learning.

Benefits of Reflection and Self-Awareness

Evidence of increased self-awareness and increased reflection emerged within the qualitative data. Participants frequently discussed how they were reflecting more often and thus their awareness level of changes they wanted to make in their instruction and their students needs increased. Cranton (2006) states, "Educators' awareness of themselves as people and practitioners is the foundation of transformative learning about teaching" (p. 198). The level of awareness teachers had about their content knowledge and their students' needs arose in many conversations. This occurred when the participants had plenty of time to reflect on their instruction. In other words, the previously described opportunities for reflection allowed a deeper awareness of various aspects of these teachers' practices. For example, one participant felt good about using strategies such as "I do…we do…you do" as a method of scaffolding her instruction which she believed to be an important part of early childhood instruction. She expressed an awareness and level of confidence that her students specifically benefitted from that strategy. Each participant provided examples and a level of awareness that they had strong content knowledge or knowledge of their students' specific needs in our reflective conversations. When people reflect, their brains open up, future thoughts and actions become clearer, and new experiences may lead to deeper reflection (Raber-Hedberg, 2008). Reflection promotes awareness. These teachers consistently mentioned how talking things through and later writing about their thoughts and ideas provided them with a safe and non-threatening reflective forum. The written reflection promoted their awareness about the good things they do in their classrooms and their level of awareness of their students' needs which drive their instructional decisions. According to them,

they were reflecting and thinking consistently about their practice. Danielson (2008) and Lariveee (2000) convey the importance of reflection in teaching. According to them, when teachers have opportunities to reflect on their practice they transform their approach in thinking about instruction and their normal teaching.

All participants provided written evidence about their students' strengths, weaknesses, and rationale for their instructional decisions in the reflection log. Their awareness of their students' needs emerged as they had the opportunities to write and reflect about their class. The participants also reflected in the log on the impact of their efforts outside their classroom instruction such as communicating with parents and collaborating with their colleagues. These examples of written reflection are also practices attributed to quality teaching (Darling-Hammond, 1998; "Measuring What Matters," 2008; NBPTS, 2002). The NBPTS also states the importance of having knowledge of students, and partnerships with colleagues and parents. Having the participants articulate their efforts exemplified the National Board Certification process as a beneficial practice of and pathway to quality teaching. To reiterate, opportunities to reflect provided the advantage of a deepened awareness. Reflection provides an initial benefit, while awareness capitalizes on it and moves it forward.

During the time of this intervention, students' achievement from Group One improved based on the district benchmark reading assessment. This increase could be linked to the innovation and the collaborative and extensive coaching that participants in Group One received. The findings reveal that the student achievement scores were higher amongst Group One, the group that received the coaching, as compared to Group Two, teachers who had participated in the National Board Certification process, and

Group Three, who had no affiliation with the innovation or the National Board Certification process. Group One participants were immersed in constant reflection and coaching. These variables could have been factors in the increase of the self-reflection, awareness of instruction, content knowledge, and students' needs. Although the innovation proved be beneficial and impactful for the teachers, it is important to recognize that many other factors could have positively influenced the student achievement such as the quality of leadership at this school, a culture of trust and collaboration amongst teams and the instructional coach, and positive dispositions towards teaching by the participants. These attributes, like those previously mentioned, can also influence and benefit student achievement (Behrstock-Sherratt, Coggshall, & Drill, 2011; Darling-Hammond, 2010; Little, 1982; Center for Teaching Quality 2008).

Limitations of the Study

Limitations of this study include the potential that other professional development opportunities that the teachers received might have influenced the outcomes. The participants were exposed to other coaching and mentoring opportunities on their school site by the principal and site based instructional coach. This could not be avoided. However, the specific coaching received by the participants as part of the innovation differed in important ways from what the school provided. For example, the coaching linked to the innovation was ongoing. These teachers had never participated in this level of consistent and frequent cognitive coaching. In addition, the specific characteristics of the cognitive coaching framework such as the nonjudgmental dialogue, mediation of thinking, paraphrasing, planning, and reflecting contrasted from their environment on the school site (Costa & Garmston, 2002). For example, the site based instructional coach

was not trained in cognitive coaching and did not meet weekly one on one with the teachers for a consistent period of time. A time was not set aside for individual meetings between the teachers and the coach to discuss and reflect on the teachers' instruction and their students. The school based instructional coach did, however, meet weekly in a group setting with the other grade level teachers during what they called "PLC (professional learning community) time." The PLC was designated to discuss student data and instructional issues and was meant to be a team collaborative time to dialogue. The principal also frequently walked through classrooms and engaged in informal conversations with the participants from Group One and Three. In addition, the participants frequently met with the reading specialists and colleagues on their campus. The participants in all groups had very similar settings and situations on their campuses. Group Three had an identical setting as Group One, as they also were teachers at Summit elementary. The conditions in place at Summit Elementary (e.g. the PLC meetings, the trust amongst colleagues, effective leadership, and team collaboration) are important variables that might have been influential in affecting the student achievement results in being high and similar between Group One and Group Three. These influential conditions could not be avoided. Based on my observations, the campus had a friendly atmosphere and the participants mentioned their appreciation for the collaborative environments the principal and school site instructional coach reinforced. To sum up, the coaching differed from what I provided as "cognitive coach" compared to the support, coaching, collaboration, and mentoring the site based instructional coach, principal, and other specialists provided.

Limitations also arise from the potential of researcher bias. As dual researcher and practitioner, I was emotionally invested in this study. This could impact my beliefs and interpretation of data. However, the use of mixed methods, sufficient time in the field, and triangulation of data all support researcher validity (Creswell, 2009).

Summary

Overall, the coaching participants in Group One experienced a rich and consistent reflective experience via coaching, video recording, and written reflection. They learned how to be more reflective and aware teachers. It is critical to mention that the benefits of these reflective experiences will not end with this study.

Self- reflection is associated with accomplished teaching and transformative learning (Cranton, 2006; NBPTS, 2002). The following quote relates to transformative learning, a theoretical basis for this study: "Transformation must come from within. Feeling coerced into following someone else's advice may lead to short-lived changes, but not to deep and abiding shifts in perspectives" (Cranton, 2006, p. 192). Cognitive coaching is not about coercion. In this study, the teachers were open-minded, willing to be coached, and open to the possibility of shifting their perspectives. It is my hope as dual researcher and practitioner that the participants in Group One will continue the reflective practices they began over the course of the innovation.

Overall, the benefits of the reflective experiences I provided these participants are notable. The findings reveal that more research on coaching might be worthwhile. As evidenced by Edwards and Green (1999) and Borman and Feger (2006), further research on cognitive coaching and instructional coaching needs to continue in order for teachers and education leaders to see the value in coaching. The coaching participants from this

study now have reflective tools that they can draw upon to further their self-reflection in the future. The findings from this study also reveal that teachers who do not choose National Board Certification as a pathway fro professional growth can still participate in reflective practices that could potentially positively impact their practice. I believe the findings support the notion that reflective activities and coaching should be accessible and available for all teachers, not just teachers pursuing National Board Certification.

Chapter 6

DISCUSSION AND LESSONS LEARNED

In this chapter I discuss the lessons learned over the course of this research project. The importance of relationships, the potential of cognitive coaching and mentoring, and the positive feelings expressed by the participants are three big ideas I believe one could learn from this project. Later in this chapter, I discuss the implications of my research findings for teachers who participated in this study and the possible generalizability to other teachers. I also explore the implications for Summit Elementary. Finally, I discuss the implications for further research and provide my concluding thoughts.

The Importance of Relationships

When I was in my previous position as an educator, I was an active teacher leader and coach. I became interested in the reflective practices associated with the National Board Certification process and I also felt a sense of pride after I helped to inspire so many teachers to pursue Nation Board Certification. It was gratifying to witness the exact moment when a teacher had a reflective thought in which they made a positive change or refinement in their practice. As I reflect on the actions and outcomes of this study, I realize those moments occurred with the participants with whom I worked. My role in this innovation merely guided these teachers in becoming more reflective. I also provided them with new tools such as video recording and guiding questions they could draw upon in the future to continue their reflective journey. The relationships formed between the participants and myself impacted our coaching sessions and outcomes of the

coaching. Without the relationship between the coach and teacher, I believe the trust, dialogue, and their willingness to openly share would not have taken place.

Fullan and Ballew (2001) discuss the role of relationships in change. As they explain, "…actually, most people want to be part of their organization; they want to know their organization's purpose; they want to make a difference. When the individual soul is connected to the organization, people become connected to something deeper- the desire to contribute to a larger purpose, to feel they are part of a greater whole, a web of connection" (p. 8). In this action research project, the participants' relationship with the coach was an important piece in their feeling like their involvement in the project was worthwhile. Further, without our relationships, the reflective conversations about students and instruction would not have taken place. Based on the findings from this investigation, self-reflection and coaching can hold a powerful position in education and specifically in teaching when the appropriate relationships are in place.

The Potential for Cognitive Coaching and Mentoring

The quantitative and qualitative findings reveal the potential for cognitive coaching and mentoring. Specifically the data linked to the coaching aspect of the innovation revealed that the participants were open to seek advice, talk about heir instruction, and explore their students' needs with a coach. Their willingness to share ideas about teaching, feelings about their instruction, and at times be emotional about their instructional decisions supports the notion that coaching and mentoring can be helpful and meaningful to teachers.

The coaching and mentoring that most teachers receive while pursuing National Board Certification is frequent and intense. Many candidates receive monthly coaching

and frequent coaching via email and phone. Many teachers/candidates seek out coaching because they are eager to receive input from a coach or because they want to discuss their ideas with another person. Most teachers in Arizona receive monthly coaching opportunities and support if candidates for National Board Certification.

In this study, I provided the participants in Group One with more coaching than an average candidate pursuing National Board Certification would likely receive. We met weekly and we also engaged in reflective dialogue via an electronic reflection log weekly. I also provided them with reflective opportunities that parallel the practices linked to the National Board Certification process such as video recording and written reflective tasks. By meeting with the participants on a weekly basis we were able to have many conversations about their students, their instruction, and their lives. Not many teachers have these kinds of opportunities to be coached and discuss their teaching to the extent that these teachers had in this study. At the end of the innovation, participants in Group One stated that they were "getting used to meeting with me weekly." It became a normal, comfortable, and meaningful routine. The time set for talking with the teachers was time consuming and not typical occurrences for these teachers. However, when exposed to reflective activities that they felt were worthwhile, they remained cooperative and appreciative

As this study revealed, frequent coaching contributes to teachers reflecting more and talking more about their instruction and their students. The potential for coaching and mentoring is based on the willingness of teachers to be coached, the availability and time a site-based instructional coach has to provide their teachers. Its success also turns on the open-mindedness of schools and teachers to look at some of the beneficial aspects

of the National Board Certification process that promote self-reflection. In this study, they included video recording and frequent coaching and mentoring provided to teachers on a regular basis.

Feelings Expressed by the Coaching Participants

As I think back to the interactions and coaching sessions between myself and the coaching participants in Group One, I believe their feelings are important to mention. Their feelings toward the coaching process and their feelings toward the reflective activities presented to them are relevant to the overall interpretations and lessons learned from this study.

These participants did not have a prescribed set of tasks to complete or prepare for our coaching sessions. Their directions were very simple and flexible. They merely had to plan lessons, video record their lessons, and be prepared to talk about their instruction. They appreciated the flexibility in being able to talk about what they wanted to talk about. They had choice in what they wanted to talk about and I provided the structure for them to do that. As their coach, I observed their intrinsic motivation to grow as opposed to being told to do things that they may or may not interest them. If coaching is more about structure and not about predetermined content, then teachers may walk away feeling better about the coaching and the overall benefit of self-reflection.

On many occasions the participants mentioned how they felt about video recording their teaching and their feelings toward the reflection process that accompanied it. They were surprised at first how the process of video recording affected them. At first they were nervous and hesitant about the logistics of video taping and seeing themselves on screen. After setting up the camera and trying it out a few times they all

became more comfortable with this tool. They observed how video recording could be an easy tool and way to support their reflection. One participant who video recorded her reading lessons for one a week straight expressed that she felt that video recording was a way for her to look at her teaching and see the good in what she does on a regular basis. Another participant mentioned how video recording was a tool that helped him reflect on the approach in which he delivered content to his students and reflect on the ways his kids responded to his instruction and delivery.

As previously mentioned, each participant mentioned that they would like to continue to video record themselves and their students. They felt it was a worthwhile simple tool and method that helped them reflect on a deeper level. Overall, the feelings the participants expressed toward coaching and video recording were positive. In regards to the potential of video recording and coaching, I believe that coaching teachers and video recording go hand in hand. Potentially, teachers could video record themselves and set up times and coaching sessions with a coach to separately discuss and reflect on their videos. Getting started with the tool was not easy, but with the support from a coach the participants felt better about using their video recording as a tool to promote their reflective practice.

Implications for Teachers

Several implications arise for the teachers in this study and possibly other teachers like them:

- The potential for coaching practices can improve and become more consistent within schools;

- The potential for more consistent and various reflective activities such as video recording and reflective journals are inexpensive and practical for all schools.

I realize there are many responsibilities and job duties a site based instructional coach holds, but maybe more time needs to be devoted to just coaching and talking one on one with teachers about their practice on a consistent and regular basis. The set aside time for consistent weekly meetings was something the participants in Group One appreciated. The consistency of meetings also contributed to the relationships. Without having the opportunity to meet so regularly the participants and myself would not have gotten to know one another at a level where they felt comfortable sharing feelings and thoughts about their practice.

The reflective activities and practices the teachers experienced within this study varied. In addition, this study exposed teachers to reflective practices associated with the National Board Certification process, including working with a cognitive coach and video recording instruction. These practices can be low cost and embedded within the school context and daily operations. They stand in contrast to other types of professional development that remain costly and time consuming for the school and teachers.

Implications for Reflective Practices at Summit Elementary

If the leadership and grade level teams continue to maintain a trusting and collaborative environment, the teachers at Summit Elementary can maintain chances to continue their engagement in reflective practices and seek out opportunities to grow professionally via coaching or other ways.

The principal at the school expressed her interest in providing additional video cameras for more of her teachers so that they would have the opportunity to use that tool

as a method of reflection. She also expressed interest in the cognitive coaching model. I am unsure of whether she will send her site based instructional coach to cognitive coaching training, but she may at least seek out other people in the district who are trained to provide cognitive coaching to her teachers on a regular basis. The cognitive coaching training is expensive and is only offered twice a year over a period of eight days. Again, the Arizona K12 Center is the only organization that provides the cognitive coaching training in Arizona. Overall, the possibility for continued reflective practices at this school is positive. My hope is they continue some of the practices linked to the innovation in a way that meets the entire school's needs. Based upon the data from them, the participants at Summit Elementary have new tools for self-reflection and new tools to share with their colleagues.

Implications for Further Research

The participants at Summit Elementary were willing and coachable teachers. They were receptive to the reflective activities and welcomed the potential to refine their skills by working with a coach. Other teachers may not be as willing or as open to cognitive coaching and the reflective practices associated with the National Board Certification process. Therefore, future research might consider ways to potentially support these more recalcitrant teachers and expose them to the practices that were so beneficial to teachers within this study. Questions like these come to mind: What options exist for teachers who hesitate to respond to a coach or mentor? How do coaches build trusting relationships with others when they are initially absent?

If I were to conduct another study, I would like to partner with another cognitive coach to recruit more willing teachers to participate and encourage those less willing to

follow suit. I believe it would be interesting to study a larger population of teachers who held various levels of willingness to initially engage in the reflective practices associated with National Board Certification.

Concluding and Personal Thoughts

These teachers' learning may have been small, but the evidence confirms that the teachers learned new tools in how to be more self-reflective. The teachers also learned how to utilize others and specifically coaches to support them with their self-reflection. A quote from Jim Knight (2011) offers an appropriate closing thought. " Love of learning is infectious; it is energizing, joyous, and humanizing. In schools where professional learning is at the core, teachers come to work excited by prospects of what new idea or practice they might do everyday" (p. 240). As a coach participant and researcher in this project, I believe and learned that the love of learning emerges from reflective practice and by working with a coach. I believe I witnessed this with the participants from Group One at Summit Elementary.

REFERENCES

Arizona Education Association. (2011). *Teacher Effectiveness in Arizona Makes Critical Gain. AEA Advocate*, *27*(3), 31.

Abrams, J. (2001) *A new way of thinking: Beginning teacher coaching through Garmston's and Costa's states of mind.* National Council of Teachers of English. Retrieved from http://www.cognitivecoaching.com/pdf/newwayth.pdf

Amrein-Beardsley, A. (2008). Methodological concerns about the education value-added assessment system. *Educational Researcher, 37*(2), 65-75.

Anagnostopoulos, D., Sykes, G., McCrory, R., Cannata, M., & Frank, K. (2010). Dollars, distinction, or duty? The meaning of the National Board for Professional Teaching Standards for teachers' work and collegial relations. *American Journal of Education*, *116*(3), 337-369.

Batt, E. G. (2010). Cognitive coaching: A critical phase in professional development to implement sheltered instruction. *Teaching and Teacher education*, *26*(4), 997-1005.

Berry, B. (2011). Teacherpreneurs: A more powerful vision for the teaching profession. *Phi Delta Kappan*, *92*(6), 28-33.

Borman, J., Feger, S., & Kawakami, M. (2006) *Instructional Coaching: Key Themes from the Literature:* A report from The Education Alliance at Brown Retrieved from: http://www.alliance.brown.edu/pubs/pd/tl_coaching_lit_review.pdf

Bullough Jr, R.V. (2001). Pedagogical content knowledge circa 1907 and 1987: a study in the history of an idea. *Teaching and Teacher Education*, *17*(6), 655-666.

Burroughs, R. (2001). Composing standards and composing teachers the problem of national board certification. *Journal of Teacher Education*, *52*(3), 223-232.

Bond, L. (1998). Culturally responsive pedagogy and the assessment of accomplished teaching. *Journal of Negro Education*, 242-254.

Borko, H. (2004). Professional development and teacher learning: Mapping the terrain. *Educational researcher*, *33*(8), 3-15.

Cannata, M., McCrory, R., Sykes, G., Anagnostopoulos, D., & Frank, K. A. (2010). Exploring the Influence of National Board Certified Teachers in Their Schools and Beyond. *Educational Administration Quarterly*, *46*(4), 463-490

Cantrell, S., Fullerton, J., Kane, T. J., & Staiger, D. O. (2008). *National board certification and teacher effectiveness: Evidence from a random assignment experiment* (No. w14608). National Bureau of Economic Research.

Carnegie Foundation for the Advancement of Teaching, (1989). *The Carnegie Foundation for the Advancement of Teaching. Eighty-fourth annual report for the year ended June 30, 1989* Distributed by ERIC Clearinghouse.

Carver, C. L. (2010). *Professional learning opportunities that enhance teachers' learning*. University of Connecticut.

Center for Teaching Quality. (2008, July). *Measuring what matters: The effects of National Board Certification on advancing 21st century teaching and learning*. Retrieved from The Center for Teaching Quality: http://www.teachingquality.org/legacy/MeasuringWhatMatters.pdf

Chan, C. K., & Pang, M. F. (2006). Teacher collaboration in learning communities doi.10.1080/10476210500527899

Christensen, Larry B., & Johnson, Burke. (2008). *Educational research: quantitative, qualitative, and mixed approaches.* Thousand Oaks, California: Sage Publications Inc.

Cobb, P., & Bowers, J. (1999). Cognitive and situated learning perspectives in theory and practice. *Educational researcher*, *28*(2), 4-15.

Cohen, C., & Rice, J. (2005) *National Board Certification as professional development: Designand cost.* Retrieved from: http://76.12.61.196/publications/National_Board_Certification.pdf

Colasante, M. (2011). Using video annotation to reflect on and evaluate physical education pre- service teaching practice. *Australasian Journal of Educational Technology, 27*(1), 66-88.

Costa, A. L., & Garmston, R. G. (2002). *Cognitive coaching A foundation for Renaissance Schools.* Norwood, Massachusetts: Christopher-Gorden Publishers Inc.

Costa, A. L., Garmston, R. J., Ellison, J., & Hayes, C. (2007). *Cognitive coaching foundation seminar: Learning guide*. Center for Cognitive Coaching.

Council of Chief State School Officers. (2011, April). Interstate Teacher Assessment and Support Consortium (InTASC) Model Core Teaching Standards: A Resource for State Dialogue. Washington, DC: Author.

Corbin, J., & Strauss, A. (2008). *Basics of qualitative research: Techniques for developing grounded theory (3rd Ed.)*. Thousand Oaks, CA: Sage Publications.

Cranton, P. (2006.) Understanding and Promoting Transformative Learning: A Guide for educators of adults San Francisco: California Jossey- Bass

Creswell, J. W. (2009). *Research design: Qualitative, quantitative, and mixed methods approaches* (3rd ed.). Los Angeles: Sage.

Croft, A., Coggshall, J. G., Dolan, M., Powers, D. E., & Killion, J. (2010). Job-embedded professional development: What it is, who is responsible, and how to get it done well. *Issue Brief (April)*.

Cruickshank, D. R., Kennedy, J. J., Williams, E. J., Holton, J., & Fay, D. E. (1981). Evaluation of reflective teaching outcomes. *The Journal of Educational Research*, 26-32.

Danielson, L. (2008, January). Making reflective practice more concrete through reflective decision making. In *The Educational Forum* (Vol. 72, No. 2, pp. 129-137). Taylor & Francis Group.

Darling-Hammond, L. (2010). *The flat world and education*. New York, NY: The Teachers College Press

Darling-Hammond, L., & National Commission on Teaching & America's Future. (1997). *Doing what matters most.* New York, NY: ERIC Clearinghouse.

Darling-Hammond, L. (1998). Teachers and teaching: Testing policy hypotheses from a national commission report. *Educational Researcher*, 5-15.

Dewey, J. (1997). *How we think*. Mineola, NY: Dover Publication

Devecchi, C., & Rouse, M. (2010). An exploration of the features of effective collaboration between teachers and teaching assistants in secondary schools. *Support for Learning*, *25*(2), 91-99.

Edwards, J., & Newton, R. (1995). *The effects of cognitive coaching on teacher efficacy and empowerment.* Retrieved from: http://login.ezproxy1.lib.asu.edu/login?url=http://search.proquest.com/docview/62640428?accountid=4485

Erickson, F. (1986). Qualitative methods in research on teaching. In M. C. Eittrock (Ed.), *Handbook of research on teaching*, pp 119-168. New York, NY: Macmillan.

Forsyth, P. B., Adams, C. M., & Hoy, W. K. (2011). *Collective Trust: Why Schools Can't Improve without It*. Teachers College Press. 1234 Amsterdam Avenue, New York, NY 10027.

Freese, A. R. (2006). Reframing one's teaching: Discovering our teacher selves through reflection and inquiry. *Teaching and teacher education*, *22*(1), 100-119.

Freund, M., Russell, V. K., & Kavulic, C. (2005). A study of the role of mentoring in achieving certification by the National Board for Professional Teaching Standards. *Washington, DC: The George Washington University Graduate School of Education and Human Development*.

Forman, E. A., Minick, N., & Stone, C. A. (1996). *Contexts for learning: Sociocultural dynamics in children's development*. Oxford University Press, USA.

Fullan, M. (2007). *The new meaning of educational change* (4th ed.). New York, N.Y: Columbia University Teachers College.

Gall, M. D., Borg, W. R., & Gall, J. P. (2003). *Educational research: An introduction* (7th ed.). White Plains, N.Y.: Longman.

Garet, M. S., Porter, A. C., Desimone, L., Birman, B. F., & Yoon, K. S. (2001). What makes professional development effective? Results from a national sample of teachers. *American educational research journal*, *38*(4), 915-945.

Gay, L. R., & Mills, G. E. *Educational research: Competencies for analysis and applications*. Upper Saddle River, NJ: Merrill.

Glaser, B. G., & Strauss, A. L. (1967). *The discovery of grounded theory: Strategies for qualitative research*. Aldine de Gruyter.

Goddard, R. D., Hoy, W. K., & Hoy, A. W. (2000). Collective teacher efficacy: Its meaning, measure, and impact on student achievement. *American Educational Research Journal*, *37*(2), 479-507.

Goddard, Y., Goddard, R., & Tschannen-Moran, M. (2007). A theoretical and empirical investigation of teacher collaboration for school improvement and student achievement in public elementary schools. *The Teachers College Record*, *109*(4), 877-896.

Goetze, I. (2006). The perspectives of National Board Certified Teachers on how leadership activities impacted job satisfaction.

Glaser, B.G., & Strauss, A L. (1967). *The discovery of grounded theory: Strategies for qualitative research.* Chicago, IL: Aldine Publishing Company.

Glassman, M. (2001). Dewey and Vygotsky: Society, experience, and inquiry in educational practice. *Educational Researcher*, *30*(4), 3-14.

Goldhaber, D. D., & Anthony, E. (2003). *Teacher quality and student achievement*. ERIC Clearinghouse on Urban Education, Teachers College, Columbia University.

Goldhaber, D., & Hansen, M. (2009). National Board Certification and Teachers' Career Paths: Does NBPTS Certification Influence how Long Teachers Remain in the Profession and Where They Teach?. *Education Finance and Policy*, *4*(3), 229-262.

Greene, J. C. (2007). *Mixed methods in social inquiry*. San Francisco, California: Jossey-Bass.

Guskey, T. R. (1999). *Evaluating professional development*. Corwin Press.

Fullan, M. (2001). Leading in a culture of change. San Francisco, California: Jossey-Bass.

Halim, L., Meerah, T. S. M., & Buang, N. A. (2010). Developing pre-service science teachers' pedagogical content knowledge through action research. *Procedia-Social and Behavioral Sciences*, *9*, 507-511.

Hall, G. E., & Hord, S. M. (2011). Implementation: Learning Builds the Bridge between Research and Practice. *Journal of Staff Development*, *32*(4), 52-57.

Hanson, S., & Moir, E. (2008). Beyond mentoring: Influencing the professional practice and careers of experienced teachers. *Phi Delta Kappa*, *89*(6), 453-458.

Harford, J., & MacRuairc, G. (2008). Engaging student teachers in meaningful reflective practice. *Teaching and Teacher Education*, *24*(7), 1884-1892.

Hargreaves, A., & Fullan, M. (2012). *Professional Capital: Transforming teaching in every school*. Teachers College Press.

Hargreaves, A., & Shirley, D. (Eds.). (2009). *The fourth way: The inspiring future for educational change*. Corwin Press.

Harris, D. N., & Sass, T. R. (2009). The effects of NBPTS‐certified teachers on student achievement. *Journal of Policy Analysis and Management*, *28*(1), 55-80.

Holloway, D. L. (2002). Using research to ensure quality teaching in rural schools. *Journal of Research in Rural Education. Winter. 2lX12.17*(3), 38-153.

Kegan, R. (1994). *In over our heads, the mental demands of modern life.* Cambridge, Massachusetts: Harvard University Press

Kegan, R. (1982). *The evolving self: Problem and process in human development*. Cambridge, MA: Harvard University Press.

Keigher, A. (2010). Teacher Attrition and Mobility: Results from the 2008-09 Teacher Follow-Up Survey. First Look. NCES 2010-353. *National Center for Education Statistics*.

Kennedy, M. M. (2006). From Teacher Quality to Quality Teaching. *Educational Leadership*, *63*(6), 14-19.

Knight, J. (2011). *Unmistakable impact, a partnership approach for dramatically improving instruction.* Thousand Oaks, California: Corwin.

Knight, J. (2008). *Coaching: Approaches and perspectives*. Corwin Press.

Knowles, M. S., Swanson, R. A., & Holton III, E. F. (2011). *The adult learner: The definitive classic in adult education and human resource development*. Butterworth-Heinemann.

Kuhn, D. (2005). *Education for thinking*. Cambridge, MA: Harvard University Press.

Lambert, L. (2002). *The constructivist leader* (2nd ed.). New York, NY: Teachers College Press.

Larrivee, B. (2000). Transforming teaching practice: Becoming the critically reflective teacher. *Reflective Practice, 1*(3), 293-307.

Lave, J. (1991). Situating learning in communities of practice. *Perspectives on socially shared cognition*, *2*, 63-82.

Lave, J., & Wenger, E. (1991). *Situated learning: Legitimate peripheral participation*. Cambridge university press.

Lipton, L. (1993). *Transforming information into knowledge: Structured reflection in administrative practice.* Retrieved from: http://login.ezproxy1.lib.asu.edu/login?url=http://search.proquest.com/docview/62777688?accountid=4485

Lipton, L., Wellman, B. M., & Humbard, C. (2003). *Mentoring matters: A practical guide to learning-focused relationships*. MiraVia, LCC.

Little, J. W. (1982). Norms of collegiality and experimentation: Workplace conditions of school success. *American educational research journal*, *19*(3), 325-340.

Lovat, T., & Clement, N. (2008). Quality teaching and values education: Coalescing for effective learning. *Journal of Moral Education*, *37*(1),1-16.

Lloyd, P., & Fernyhough, C. (1999). *Lev Vygotsky: critical assessments* (Vol. 4). Taylor & Francis.

Lyons, N. (1998). Reflection in teaching: Can it be developmental? A portfolio perspective. *Teacher Education Quarterly, 25*(1), 115-27.

Lundin, M. (2007). Explaining cooperation: How resource interdependence, goal congruence, and trust affect joint actions in policy implementation. *Journal of Public Administration Research and Theory, 17*(4), 651-672.

Martin, D. (2006). Teacher quality: a comparison of national board certified and non-board certified teachers of deaf students. *American Annals of the Deaf (Washington, D.C.1886), 151*(1),71.

Marzano, R. J., Frontier, T., & Livingston, D. (2011). *Effective supervision: Supporting the art and science of teaching*. Association for Supervision & Curriculum Development.

Mason, P. (2005). Visual data in applied qualitative research: Lessons from experience. *Qualitative Research*, 5, 325-346.

Mcleod, S. A. (2007). *Simply Psychology - Articles for Students.* Retrieved from: www.simplypsychology.org/

Mezirow, J. (1991). *Transformative dimensions of adult learning*. San Francisco, CA: Jossey-Bass.

Mezirow and Associates. (2000). *Learning as transformation: Critical perspectives on a theory in progress.* San Francisco: CA: Jossey-Bass

Miles, M. B., & Huberman, A. M. (1994). *Qualitative data analysis: An expanded sourcebook*. Sage Publications, Incorporated.

Nagle, J. F. (2008, December). Becoming a reflective practitioner in the age of accountability. In *The Educational Forum* (Vol. 73, No. 1, pp. 76-86). Taylor & Francis Group.

National Board for Professional Teaching Standards. (2002). *What teachers should know and be able to do.* Retrieved from: http://www.nbpts.org/UserFiles/File/what_teachers.pdf.

National Board for Professional Teaching Standards. (2012). *Early Childhood Generalist Portfolio Directions.* Retrieved from: http://www.nbpts.org/userfiles/file/EC_Gen_Portfolio_Instructions_041112.pdf

Okpala, C. O., James, I., & Hopson, L. (2009). The Effectiveness of National Board Certified Teachers: Policy Implications. *Journal of Instructional Psychology*, *36*(1), 29.

Pink, S. (2007). *Doing visual ethnography: Images, media, and representation in research*. London, England: SAGE Publications. 1-76.

Putnam, R. T., & Borko, H. (2000). What do new views of knowledge and thinking have to say about research on teacher learning?. *Educational researcher*, 4-15.

Rinaldo, V. (2009). Developing the intangible qualities of good teaching: A self-study. *Education (Chula Vista), 130*(1), 42.

Raber Hedberg, P. (2009). Learning through reflective classroom practice. *Journal of Management Education, 33*(1), 10-36.

Sass, T. (2009). The effects of NBPTS-certified teachers on student achievement. *Journal of Policy Analysis and Management, 28*(1), 55-80.

Sato, M., Wei, R. C., & Darling-Hammond, L. (2008). Improving teachers' assessment practices through professional development: The case of National Board Certification. *American Educational Research Journal*, *45*(3), 669-700.

Schon, D. A. (1987). *Educating the reflective practitioner.* San Francisco: CA: Jossey-Bass

Segall, A. (2004). Revisiting pedagogical content knowledge: the pedagogy of content/the content of pedagogy. *Teaching and teacher education*, *20*(5), 489-504.

Serafini, F. (2002). Possibilities and challenges: The national board for professional teaching standards. *Journal of Teacher Education, 53*(4), 316-27.

Showers, B., & Joyce, B. (1996). The evolution of peer coaching. *Educational leadership*, *53*, 12-16.

Skaalvik, E. M., & Skaalvik, S. (2007). Dimensions of teacher self-efficacy and relations with strain factors, perceived collective teacher efficacy, and teacher burnout. *Journal of Educational Psychology*, *99*(3), 611.

Smith, M. L., & Glass, G. V. (1987). *Research and evaluation in education and the social sciences*. Englewood Cliffs, NJ: Prentice-Hall.

Smith, M. L. (1997). Mixing and matching: Methods and models. *New directions for evaluation*, *1997*(74), 73-85.

Stringer, E. (2007). *Action research* (3rd ed). Thousand Oaks, California: Sage Publications.

Teachers, I. F. G. Y. (2011). Workplaces That Support High-Performing Teaching and Learning.

Teemant, A., Wink, J., & Tyra, S. (2011). Effects of coaching on teacher use of sociocultural instructional practices. *Teaching and Teacher Education*, *27*(4), 683-693.

Vandevoort, L. G., Amrein-Beardsley, A., & Berliner, D. C. (2004). National board certified teachers and their students' achievement. *Education Policy Analysis Archives, 12(46)*. Retrieved from: http://epaa.asu.edu/epaa/v12n46/.

Vygotsky L. S., & Cole, M. (1978). *Mind in society: The development of higher psychological processes*. Harvard university press.

Walkerden, G. (2009). Researching and developing practice traditions using reflective practice experiments. *Quality & Quantity*, *43*(2), 249-263.

Ward, J. R., & McCotter, S. S. (2004). Reflection as a visible outcome for preservice teachers. *Teaching and teacher education*, *20*(3), 243-257.

Watson, L. (2005). *Quality Teaching and School Leadership: A Scan of Research Findings*. Acton ACT: Teaching Australia

Wenger, E. (1998). Communities of practice: Learning as a social system. *Systems thinker*, *9*(5), 2-3.

Wenger, E. (2000). *Communities of practice.* Retrieved from: http://www.ewenger.com/theory/communities_of_practice_intro_WRD.dc

Wenglinsky, H., & Educational Testing Service. (2000). *How teaching matters.* Princeton, NJ: ERIC Clearinghouse.

Wildman, T. M., Magliaro, S. G., Niles, R. A., & Niles, J. A. (1992). Teacher mentoring: An analysis of roles, activities, and conditions. *Journal of teacher education*, *43*(3), 205-213.

Wright, L. L. (2009). Leadership in the swamp: Seeking the potentiality of school improvement through principal reflection. *Reflective Practice*, *10*(2), 259-272

Table 1

Quantitative Data Sources Inventory

Description	Contents
This reflection questionnaire was designed to determine the extent of how each teacher in the coaching group ranked their reflective practices prior to receiving the innovation and after receiving the innovation. The questions were derived from the reflection standard from the NBPTS middle and early childhood certificates.	30 survey items to measure five constructs, plus demographic information.
Each teacher from all three groups provided student achievement scores from the district reading benchmark assessment for the fall and winter.	The class average percentages towards meeting the benchmark in the following areas were collected: Falls Far Below (FFB,) Approaches (APP,) Meets, and Exceeds.

Table 2

Qualitative Data Sources Inventory

Description	Contents
Coaching Summaries: The coaching summaries were a descriptive account of my role, actions, phrases and the participants' role, actions and phrases during the coaching conversations.	24 pages of summarized transcriptions from coaching sessions with four participants.
Reflection Logs: The log served as an electronic tool in Google Docs for the participants to contribute via personal written reflection log. The coach also inserted questions and thought provoking reflections for the peartipants to ponder. Over the course of the innovation, and after coaching session Participants responded to reflective questions about our coaching sessions or about their teaching practice. When the innovation concluded and each log was complete the first step in my analysis included reading through each reflection log from the other participants.	20 pages of written reflections from the four participants. In addition, as coach I provided reflective prompts and questions for the participants to response to that were included in the log.
Interviews: The interviews consisted of a pre and post with each participant from Group One and a group interview with peartipants form Group One.	25 pages of summarized transcriptions from the pre, post, and the group interview.
Digital Photographs and Descriptions: each participant took a minimum of five digital images and wrote a descriptive explanation of the photograph and why it triggered reflection for them.	A total of 20 digital images and explanations of each image.
Video Recording Note taking Templates: The note-taking template served as a reflective tool for participants to use as they watched their video recording. The note-taking template aligned with the NBPTS Evaluation of Evidence Guide	14 pages of reflective notes collected by the research and the participants related to their video recordings.

Table 3

Reflection Survey: Individual Sources

Descriptive Response Statistics				N=4
	Pre Survey		Post Survey	
Item	Mean	Std. Deviation	Mean	Std. Deviation
Q7. When I assess students' work I also assess myself.	8.25	1.25	9.25	1.70
Q8.I gain insight and direction about classroom climate from interactions and conversations with my students	8.50	1.29	9.50	1.29
Q9. I analyze information received from parent-teacher conferences, and informal conversations with parents and other family members.	9.00	2.16	9.25	1.70
Q10. I analyze standardized test scores and other data (e.g., demographic data) to gain insights that inform my curricular decisions and instructional practice.	9.25	2.21	9.50	1.73

Table 4

Reflection Survey: Outside Sources

Descriptive Response Statistics				N=4
	Pre Survey		Post Survey	
Item	Mean	Std. Deviation	Mean	Std. Deviation
Q11. I seek advice from colleagues and critique my practice on a regular basis through formal and informal discussions.	9.25	1.50	9.25	1.70
Q12. I seek advice from colleagues and critique my practice on a regular basis through classroom observations.	6.75	2.87	8.00	2.58
Q13.I seek advice from colleagues and critique my practice on a regular basis from a collective examination of student work.	9.00	1.41	9.25	1.70
Q14.I reflect on my techniques of planning, monitoring, collaborating, assessing, and instructing by engaging in observations and discussions with and from colleague	9.00	2.00	9.25	1.70

Q15.I am willing to adjust their practice as a result of analysis and reflection	10.25	0.50	10.25	0.50
Q16.I conduct action research in their classrooms or collaborate with educational researchers to examine my teaching practice critically	6.25	0.95	8.25	2.75

Table 5

Reflection Survey: Intrapersonal Ideas

Descriptive Response Statistics				N=4
	Pre Survey		Post Survey	
Item	Mean	Std. Deviation	Mean	Std. Deviation
Q17.I explore the role that my own cultural background, biases, values, and personal experiences play in my own teaching	7.00	2.44	7.75	2.50
Q18. I read and participate in workshops and courses that challenge my current thinking and practice	7.75	2.21	8.75	1.50
Q19. I use the results of various introspective personal learning activities to enrich my practice	7.25	2.21	8.75	1.70

Table 6

Reflection Survey: Outside Topics

Descriptive Response Statistics				N=4
	Pre Survey		Post Survey	
Item	Mean	Std. Deviation	Mean	Std. Deviation
Q20. I thoughtfully consider the prevailing research about child development, learning, and intelligence, while maintaining an awareness of its limitations	8.25	1.25	9.00	1.82
Q21. I am knowledgeable about the political context surrounding major controversies and debates in the discipline of education and in the teaching profession and I have a perspective on their legitimacy, and can articulate their position on them	7.00	1.41	7.50	0.57
Q22. I study prevailing theories, emerging practices, and promising research findings, and I select those ideas and techniques that could improve my practice.	7.75	0.50	8.50	1.73

Q23. I explore topics in which I may have limited expertise.	7.75	2.87	8.75	1.70
Q24. I experiment creatively with alternative materials, approaches, and instructional strategies.	8.50	1.29	8.50	1.82

Table 7

Reflection Survey: Professional Aspects

Descriptive Response Statistics				N=4
	Pre Survey		Post Survey	
Item	Mean	Std. Deviation	Mean	Std. Deviation
Q25. I embrace the lifelong study of the art and science of teaching	9.50	1.73	9.50	1.29
Q26. I respond constructively to the many demands of the profession while recognizing the importance of balance and self-renewal	8.25	1.70	9.25	1.70
Q27. I exemplify the highest ethical and moral ideals.	9.50	1.29	10.00	0.81
Q28. I take responsibility for my own professional growth	10.00	0.81	9.50	1.00
Q29. I embrace professional teaching standards in assessing my teaching	9.50	1.73	9.50	1.29
Q30. I reflect on my profession to ensure that I am bringing dignity to my practice	9.50	1.73	9.75	1.25

Table 8

Student Benchmark Mean Percentages

N=3

	Fall FFB & Approaches	Winter FFB & Approaches	Fall Meets & Exceeds	Winter Meets & Exceeds
Group One	15.00	12.50	85.00	87.50
Group Two	13.25	20.5	86.75	79.50
Group Three	21.75	19.00	78.25	81.00

Table 9

Average Growth From Each Group of Teacher Participants' Student Benchmark Scores from Fall to Winter

N=12

	Group A	Group B	Group C
Percentage of increase of Meets and Exceeds	+2.50	-7.25	+2.75
Percentage of Decrease in of FFB and APP	-2.50	+7.00	-2.75

Table 10

Descriptive Statistics for Codes Across Coaching Summaries, Reflection Logs, Video Notes, and Digital Image Explanations

Code	Mean	Std. Deviation
Reflection about Students	20.00	10.51
Knowledge of Students	17.00	7.34
References to Teaching Skills	9.25	6.89
Coaching Reflections	7.00	6.73
Beliefs about Teaching	5.75	5.80
Reflections about Instruction & Teaching	22.5	5.80
Content Knowledge	5.75	5.56
Emotions and Feelings	7.50	5.25
Reflective Statement about Video Recording	4.00	4.96
Outside Efforts	2.75	4.85
Reflections about Colleagues or Role with Colleagues	5.25	4.57
Planning Statement	5.50	2.50
Efforts to collaborate or Statements about collaboration	2.25	2.21
Dispositions	3.75	1.89
Role with families	1.50	1.73
Statements about	1.50	1.29

trust		
Role With Principal	1.00	0.00

Table 11

Descriptive Statistics for Interviews

Code	Mean	Std. Deviation
Collaboration Statements	8.66	1.52
Role with Families	7.66	7.02
Reflective Statements about Coaching	7.33	12.70
Role with Colleagues	6.66	2.88
Knowledge of Students	6.66	4.61
References to Skills	6.66	7.02
Reflective Statements about Teaching	6.30	4.93
Outside Efforts Linked to Teaching	4.00	6.08
Belief Statements	3.33	4.93
Reflective Statements about Students	3.00	2.00
Dispositions Towards Teaching	2.66	3.05
Trust Statements	1.66	2.88
Reflective Statements about Video recording	1.66	2.88
Role with Principal	1.66	1.15
Emotions and Feelings	1.33	1.52
Content Knowledge	1.00	1.00
Planning Statements	0.00	0.00

APPENDIX A

IRB APPROVAL

ASU Knowledge Enterprise Development

Office of Research Integrity and Assurance

To:	Mary Roe FAB S301C
From:	Mark Roosa, Chair Soc Beh IRB
Date:	08/08/2012
Committee Action:	**Exemption Granted**
IRB Action Date:	08/08/2012
IRB Protocol #:	1207008037
Study Title:	Employing National Board certification Practices with All Teachers: The Potential of Cognitive Coaching and Mentoring

The above-referenced protocol is considered exempt after review by the Institutional Review Board pursuant to Federal regulations, 45 CFR Part 46.101(b)(1) .

This part of the federal regulations requires that the information be recorded by investigators in such a manner that subjects cannot be identified, directly or through identifiers linked to the subjects. It is necessary that the information obtained not be such that if disclosed outside the research, it could reasonably place the subjects at risk of criminal or civil liability, or be damaging to the subjects' financial standing, employability, or reputation.

You should retain a copy of this letter for your records.

APPENDIX B

RECRUITMENT SCRIPT & IMPLEMENTATION TIMELINE

RECRUITMENT SCRIPT

My name is Kirsten Anne Diaz and I am a graduate student under the direction of Dr. Mary Roe within the Mary Lou Fulton Teachers College at Arizona State University. I am conducting a research study to examine the role that cognitive coaching and mentoring serves for Non-National Board Certified Teachers

I am recruiting individuals 18 years age or older to explore the potential benefits of practices associated with the National Board Certification process. This research will take place over the course of four months.

Your participation in this study is voluntary. If you have any questions concerning the research study, please call me at (623) 326-2423.

Below is the implementation timeline for this study:

IMPLEMENTATION TIMELINE

August 2012	September 2012	October 2012	November 2012
Prior to first meeting, participants will complete the survey and complete the pre-structured interview. Meeting 1. Planning conversation, introduction to self-reflection log, scheduling of first video, Meeting 2. Reflective conversation based on video recording. Planning conversation if necessary for next video. Meeting 3. Reflective conversation based on 2nd video recording.	Meeting 1. Planning conversation for 3rd video, participants contribute to reflection log. Meeting 2. Reflective conversation based on 3rd video recording. Planning conversation if necessary. Meeting 3. Reflective conversation based on selected lesson.	Meeting 1. Planning conversation on selected lesson by participant, participants contribute to reflection log. Meeting 2. Reflective conversation based on selected lesson by participant. Planning conversation if necessary. Meeting 3. Reflective conversation based selected lesson by participant.	Scheduled post structured interviews, completion of digital photograph log and scheduled conversation/interview, schedule post survey/questionnaire.

APPENDIX C

VIDEO RECORDING TEMPLATE

VIDEO RECORDING TEMPLATE

Participant Number _____

Middle Childhood

Directions: Review the aspects of teaching aligned with the NBPTS Evaluation of Evidence Guide for your developmental area. Look for evidence in your teaching and cite specific examples/interactions (from you and your students) from the video in the right column.

NBPTS Evidence Guide	Five Core Proposition	Example of Evidence Behaviors, Quotes, etc.
KNOWLEDGE OF STUDENTS (KOS): Knowledge of students as learners and teaching context.		
GOALS/CONNECTIONS (G/C): Connections between the goals, student needs, and instruction.		
INTERDISCIPLINARY THEME (IT): Choice of interdisciplinary theme; Rationale for theme; how the theme was developed; how theme supports exploration of significant problems in science.		
LEARNING ENVIRONMENT (LE): Creates a supportive, congenial, and purposeful learning environment that promotes active learning and exposes students to a variety of intellectual challenges.		
ASSESSMENT (ASMT): Uses an appropriate assessment that furthers learning goals and enhances instruction.		
MULTIPLE PATHS (MP): How instruction allows for multiple paths to learning.		

Participant Number _____

Early Childhood

Directions: Review the aspects of teaching aligned with the NBPTS Evaluation of Evidence Guide for your developmental area. Look for evidence in your teaching and cite specific examples/interactions (from you and your students) from the video in the right column.

NBPTS Evidence Guide	**Five Core Proposition**	**Example of Evidence Behaviors, Quotes, etc.**
KNOWLEDGE OF STUDENTS (KOS): High expectations, KOS as individuals and learners, and knowledge of teaching context.		
GOALS/CONNECTIONS (G/C): Sets appropriate goals to facilitate children's learning and connects the integrated Instruction to children's needs and to those goals.		
LEARNING ENVIRONMENT (LE): Fosters an equitable, accessible, and fair environment where children are encouraged to participate.		
INSTRUCTION (INS): The learning sequence fosters the development and integration of the scientific and mathematical Concepts and taps children's natural curiosity and interests.		

ASSESSMENT (ASMT): Uses an appropriate assessment that furthers learning goals and enhances instruction.		
DISCUSSION/ENGAGEMENT (DIS/ENG): Encourages children to actively participate in the inquiry, to pose questions, and to discuss ideas.		

APPENDIX D

INTERVIEWS

SEMI STRUCTURED GROUP INTERVIEW PROTOCOL

Interview Set up

1. One researcher interviews the teachers (approximately 45 minutes)

Post-Interviews

2. Save file of audio recording onto digital recording device. iPhone software includes digital voice recording files. Use participant number to identify each file.

Outcomes

3. Transcribe interview into word document for later data analysis.

Logistics

4. Schedule and plan additional face-to-face interviews and coaching if necessary.

NBPTS Core Propositions Focus Group Protocol
MODERATOR'S GUIDE:
(2 pages)

Distribute materials	Name card, demographic form, consent form, and worksheet.
Moderator introduction, thank you and purpose (1 minute)	Hello. My name is _____. I'd like to start off by thanking each of you for taking time to come today. We'll be here for about a 45 minutes. The reason we're here today is to engage in a discussion based on the National Board for Professional Teaching Standards Five Core Propositions. I'm going to lead our discussion today. I am not here to convince you of anything or try to sway your opinion. My job is just to ask you questions, paraphrase, encourage and moderate our discussion. I will also be recording our discussion today for my report.
Ground rules (2 minutes)	To allow our conversation to flow more freely, I'd like to go over some ground rules. 1. Please talk one at a time and avoid side conversations. 2. Everyone doesn't have to answer every single question, but I'd like to hear from each of you today as the discussion progresses. 3. This will be an open discussion … feel free to comment on each other's

	remarks. 4. There are no "wrong answers," just different opinions and perspectives. 5. Just let me know if you need a break. The bathrooms are located to the right and down the hall on the left.
NBPTS Prop 1 **(5 minutes)**	In what ways do you demonstrate that you are dedicated to making knowledge accessible to all students? How do you show respect for the cultural and family differences that your students bring to their classroom? How does an early childhood leader promote leadership in others?
NBPTS Prop 2 **(5 minutes)**	How do you demonstrate your deep understanding of the history, structure and real-world applications of the subject that you teach? How do you use diverse instructional strategies to teach for understanding?
NBPTS Prop 3 **(5 minutes)**	How do you assess the progress of individual students as well as the class as a whole? How do you use multiple methods for measuring student growth and understanding, and they can clearly explain student performance to parents?
NBPTS Prop 4 **(5 minutes)**	How do you model what it means to be an educated person? How do you critically examine your practice on a regular basis to deepen your knowledge, expand your repertoire of skills, and incorporate new findings into your practice?
NBPTS Prop 5 **(5 minutes)**	How do you demonstrate that you are leaders and actively know how to seek and build partnerships with community groups and businesses? How do you work with other professionals on instructional policy, curriculum development and staff development? How do you work collaboratively with parents to engage them productively in the work of the school?

Closing **(2 minutes)**	Thanks for coming today and talking about early aspects of accomplished teaching. Your comments have given me lots of different ways to see this issue. I thank you for your time.

PRE INTERVIEW

Participant #_____

Interview Protocol

Interview Set up

One researcher interviews the teacher (approximately 15-20 minutes)

Post-Interviews

Save file of audio recording onto digital recording device. iPhone software includes digital voice recording files. Use participant number to identify each file.

Outcomes

Transcribe interview into word document for later data analysis.

Logistics

Schedule and plan additional face-to-face interviews and coaching.

Script:

Thank you for taking the time to sit down with me to have a conversation about your experiences with teaching. Please feel free to speak openly, as I am not trying to convince you of anything. I am going to ask you a series of prescribed questions. I may ask follow-up questions if I need clarity. With your permission, I will record the interview so that I may transcribe it for analysis. I will also provide you with a copy of the interview so that you may check it for accuracy. Your identity will remain confidential. Do you have any questions before we begin?

Questions:

1. In what ways do you make efforts to improve your overall knowledge and awareness of your students?

2. In what ways do you make efforts to improve the approaches you take in setting high worthwhile goals for your students?

3. In what ways do you make efforts to improve your planning and implementation of instruction?
4. In what ways do you make efforts to improve your analysis and evaluation of student learning?

5. In what ways do you make efforts to reflect on the effectiveness of instructional decisions?

POST INTERVIEW

Participant # _____

Interview Protocol

Interview Set up

One researcher interviews the teacher (approximately 15-20 minutes)

Post-Interviews

Save file of audio recording onto digital recording device. iPhone software includes digital voice recording files. Use participant number to identify each file.

Outcomes

Transcribe interview into word document for later data analysis.

Logistics

Schedule and plan additional face-to-face interviews and coaching.

Script:

Thank you for taking the time to sit down with me to have a conversation about your experiences with teaching. Please feel free to speak openly, as I am not trying to convince you of anything. I am going to ask you a series of prescribed questions. I may ask follow-up questions if I need clarity. With your permission, I will record the interview so that I may transcribe it for analysis. I will also provide you with a copy of the interview so that you may check it for accuracy. Your identity will remain confidential. Do you have any questions before we begin?

Questions:

1. How might working with a coach impact your overall knowledge and awareness of who your students are at this time and this setting?

2. How might working with a coach impact the approaches you take in setting high worthwhile goals for your students?

3. In what ways might working with a coach influence your planning and implementation of instruction?

4. In what ways might working with a coach influence your analysis and evaluation of student learning?

5. In what ways might working with a coach influence the way you reflect on the effectiveness of instructional decisions?

APPENDIX E

REFLECTION SURVEY

REFLECTION SURVEY

Participant #_____

Thank you for your participation in this study. Your participation and responses will be kept anonymous, so I appreciate your honest responses to support the reliability of this study. This survey instrument includes 26 questions and should take you no longer than 5 minutes to complete. For each question please using the following rating scale: Always True 10 9 8 7 6 5 4 3 2 1 Never True

The first set of questions relate to demographic information.

1. What is your gender?

Male Female

2. In which age group do you fall in?

20s 30s 40s 50s 60s

3. For how many years have you been teaching?

1-5 6-10 10-15 15-20 20+

4. What grade level(s) do you teach?

K 1 2 3 4 5

5. Do you have regular access to an instructional or academic coach at your school?

Yes No

6. Are you a National Board Certified Teacher?

Yes No

Now I want you to answer a set of questions that relate to sources within your own classroom that may or may not contribute to the ways you evaluate and reflect upon your teaching.

7. When I assess students' work I also assess myself.

Always True 10 9 8 7 6 5 4 3 2 1 Never True

8. I gain insight and direction about my classroom climate from interactions or conversations with my students.

Always True 10 9 8 7 6 5 4 3 2 1 Never True

9. I analyze information received from parent conferences, and informal conversations with parents and other family members.

Always True 10 9 8 7 6 5 4 3 2 1 Never True

10. I analyze students' standardized test scores and other data (e.g., demographic data) to gain insights that inform my curricular decisions and instructional practice.

Always True 10 9 8 7 6 5 4 3 2 1 Never True

The next set of questions relate to sources outside of your classroom that may or may not contribute to the ways you evaluate and reflect upon your teaching.

11. I seek advice from colleagues and critique my practice on a regular basis through formal and informal discussions.

Always True 10 9 8 7 6 5 4 3 2 1 Never True

12. I seek advice from colleagues and critique my practice on a regular basis through classroom observations.

Always True 10 9 8 7 6 5 4 3 2 1 Never True

13. I seek advice from colleagues and critique my practice on a regular basis from a collective examination of student work.

Always True 10 9 8 7 6 5 4 3 2 1 Never True

14. Observations and discussions with and from colleagues influence me as I reflect on my techniques of planning, monitoring, collaborating, assessing, and instructing.

Always True 10 9 8 7 6 5 4 3 2 1 Never True

15. I am willing to adjust my practice as a result of analysis and reflection.

Always True 10 9 8 7 6 5 4 3 2 1 Never True

16. I conduct action research in my classroom or collaborate with educational researchers to examine my teaching practice critically.

Always True 10 9 8 7 6 5 4 3 2 1 Never True

Next, please answer a set of questions that relate to intrapersonal ideas that may or may not contribute to the ways you reflect and refine your practice.

17. I explore the role that my own cultural background, biases, values, and personal experiences play in my own teaching.

Always True 10 9 8 7 6 5 4 3 2 1 Never True

18. I read and participate in workshops and courses that challenge my current thinking and practice.

Always True 10 9 8 7 6 5 4 3 2 1 Never True

19. I use the results of various introspective personal learning activities to enrich my practice.

Always True 10 9 8 7 6 5 4 3 2 1 Never True

Two more sections left. Please answer the next set of questions that relate to research, political and outside topics and ideas that may or may not contribute to the ways you reflect and refine your practice

20. I thoughtfully consider the prevailing research about child development, learning, and intelligence, while maintaining an awareness of its limitations.

Always True 10 9 8 7 6 5 4 3 2 1 Never True

21. I am knowledgeable about the political context surrounding major controversies and debates in the discipline of education and in the teaching profession and I have a perspective on their legitimacy, and can articulate their position on them.

Always True 10 9 8 7 6 5 4 3 2 1 Never True

22. I study prevailing theories, emerging practices, and promising research findings, and I select those ideas and techniques that could improve my practice.

Always True 10 9 8 7 6 5 4 3 2 1 Never True

23. I explore topics in which I may have limited expertise.

Always True 10 9 8 7 6 5 4 3 2 1 Never True

24. I experiment creatively with alternative materials, approaches, and instructional strategies.

Always True 10 9 8 7 6 5 4 3 2 1 Never True

The last set of questions relates to life-long learning and professional aspects of teaching that may or may not contribute to the ways you reflect and refine your practice.

25. I embrace the lifelong study of the art and science of teaching.

Always True 10 9 8 7 6 5 4 3 2 1 Never True

26. I respond constructively to the many demands of the profession while recognizing the importance of balance and self-renewal.

Always True 10 9 8 7 6 5 4 3 2 1 Never True

27. I exemplify the highest ethical and moral ideals.

Always True 10 9 8 7 6 5 4 3 2 1 Never True

28. I take responsibility for my own professional growth.

Always True 10 9 8 7 6 5 4 3 2 1 Never True

29. I embrace professional teaching standards in assessing my teaching.

Always True 10 9 8 7 6 5 4 3 2 1 Never True

30. I reflect on my profession to ensure that I am bringing dignity to my practice.

Always True 10 9 8 7 6 5 4 3 2 1 Never True

APPENDIX F

COGNITIVE COACHING

CONVERSATION QUESTION STEMS

COGNITIVE COACHING

CONVERSATION QUESTION STEMS

Summarize Impressions

- How are you feeling about your most recent lesson?

Analyze Casual Factors:

- What are your hunches about what caused…
- What comparisons might you make between the lesson you had planned/envisioned and the one you taught?

Construct New Learning

- What learning do you want to take with you to future situations?
- What do you want to stay mindful of from now on as you plan future lessons?

Commit to Application

- So how might you apply your new learning?
- So how might you ensure you maintain that focus?

Reflect on Coaching

- As you reflect on this conversation how has it supported your learning?

ADAPTED FROM THE CENTER FOR COGNITIVE COACHING 2005

APPENDIX G

PHOTO LOG/TEMPLATE

PHOTO LOG/TEMPLATE

Participant#_____

	Date	What is this a picture of?	Why did you photograph this?
1			
2			
3			
4			
5			
6			
7			
8			
9			
10			
11			
12			
13			
14			
15			

APPENDIX H

STUDENT BENCHMARK DATA FORM

STUDENT BENCHMARK DATA FORM

Group #_____
Participant#_____

Classroom Results from Reading Benchmark Assessments

	Fall %	Winter %
Falls Far Below		
Approaches		
Meets		
Exceeds		

APPENDIX I

LIST OF CODES

List of Codes

Title of Code	Attribute
Statements about trust	These are statements that participants make about trust and the importance or trust in the school setting, amongst peers, coaching and administration.
Role with families	Participants make a statement about their role with families and the efforts they make to partner and have relationships.
Beliefs about teaching	Statements linked to personal beliefs and philosophies about teaching.
Content Knowledge	These statements or phrases are examples of content knowledge that is provided and shared by the participant.
Emotions and Feelings	These statements are references to emotions and feelings about teaching and their practice.
Planning Statement PS	These states or examples are when a participant references an idea for something they want to plan.
Coaching Reflections RSC	Reflective Statements about Coaching. Participants provides an example of something that was said or occurred during a coaching session
Reflections about Colleagues or Role with Colleagues RWC	Participants mention something linked to their interactions with colleagues.
Efforts to collaborate or Statements about collaboration CS	Examples provided by participants in ways that they collaborate with others.
Instruction Reflection RST	Reflective statements about Instruction. Statements that the participant makes about their instruction that has occurred in the past.
Reflection about Students RSS	Reflective statements about students. Participants make a reference to something he or she recalls or realizes about a student or students.
Knowledge	These statements are made by participants when they

of Students	provide an example of something they know about their students therefore they do...
Dispositions	Statements about personal attitudes, beliefs and values towards students and teaching
DIS	
Reflective Statement about Video recording	These statements are reflective statements about the video taping process and may include feelings towards the activity.
RSV	
Outside Efforts	The statements referenced outside efforts linked to teaching or education.
References to teaching Skills	The statements are specific to certain teaching skills practiced by the teacher.
Role With Principal	These statements reference interactions and role with principal at the school.