

Supporting National Board Candidates via  
Cognitive Coaching<sup>SM</sup> Conversations and Communities of Practice

by

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## ABSTRACT

There are currently 82,369 teachers nationwide who are National Board Certified Teachers (NBCTs). In Arizona the number of NBCTs is 678. The purpose of this study was to investigate the effect cognitive coaching conversations and participation in a community of practice had on National Board candidates' self-efficacy and their understanding of the National Board Professional Teaching Standards (NBPTS). A mixed methods research approach was used to collect data including: surveys, interviews, researcher observations, and cognitive coaching transcripts. I conducted a case study of five National Board candidates at my school.

Drawing on the social cognitive theory, this study was framed by the construct of self-efficacy. Through the use of open-ended questions, cognitive coaching conversations pushed candidates' thinking to a deeper level of understanding. The teachers involved in the National Board certification process represented a community of practice as the expectations and language of the NBPTS standards and portfolio directions also provided a common connection.

Findings in this study reveal that cognitive coaching conversations and membership in a community of practice have a positive impact on teachers' self-efficacy during the National Board certification process. In addition, on-going cognitive coaching conversations and participation in a community of practice positively impact National Board candidates' understanding and articulation of the NBPTS standards.

## DEDICATION

I would like to dedicate this work to teachers across the state and country, who challenge their practice against the National Board Professional Teaching Standards, especially the teachers who participated in this research study. I am so proud of each of you for challenging your teaching practice, for stepping up and saying, “I want to be the best teacher I can for my students.” It became very clear just how much you care about your students and giving them what they need to be successful. Your passion and commitment to your students, parents, community and to the field of education is remarkable. I am honored and humbled that you allowed me to be part of your journey. I have grown as a teacher, an educator and a researcher because of you. You are an inspiration to all teachers and educators. I cannot thank you enough.

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Finally, I would like to thank my family and friends who supported me over the past three years. To my friends and colleagues who cheered me on along the way. Thanks for keeping me focused. To my husband whose patience and encouragement kept me moving forward. Thank you for believing in me and not

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## **Chapter 1 Introduction**

The National Board for Professional Teaching Standards (NBPTS) was founded in 1987 with a mission to recognize accomplished teachers who demonstrate alignment to a core set of standards as evidenced through a series of assessments. Their goal is to advance teaching and ultimately impact student learning. It is a national voluntary assessment system that maintains high and rigorous standards for what accomplished teachers know and are able to do. The mission of NBPTS is reflected in the following five core propositions: 1. Teachers are committed to students and their learning. 2. Teachers know the subjects they teach and how to teach those subjects to children. 3. Teachers are responsible for managing and monitoring student learning. 4. Teachers think systematically about their practice and learn from experience. 5. Teachers are members of learning communities (NBPTS, 1987).

The National Board Certification process consists of two parts. First, National Board candidates submit four portfolio entries to demonstrate their teaching practice in the classroom and in the community. Three entries are classroom-based and one entry emphasizes accomplishments outside the classroom (NBPTS, 2009). The classroom-based entries require candidates to demonstrate how well they know and understand their students; their learning needs, and demonstrate evidence of select content standards. Entry four emphasizes accomplishments outside of the classroom and requires teachers to demonstrate their commitment to student learning through work in three categories: as a partner with students' families and the community, as a learner,

and as a leader and/or collaborator with other professionals. Second, as part of the professional expertise requirements, National Board candidates must demonstrate their knowledge of content and pedagogy on six assessments given the certificate area sought.

Research centered on National Board certification and student achievement reveals mixed results. Much of the research uses student scores on standardized tests as the measure of impact. However, these test scores offer a narrow conception of student learning as standardized tests are designed to measure mastery of state content standards, not teaching skills (National Research Council, 2008).

Researchers contend that students of teachers who earn National Board certification have higher achievement rates on standardized tests (Cavalluzzo, 2004) and end of year assessments (Goldhaber & Anthony, 2004). They also make learning gains equivalent to being in school one extra month (Vandervort, Amrein-Beardsley & Berliner, 2004) and demonstrate better writing abilities and comprehension (Bond, Smith, Baker & Hattie, 2000; Smith, Gordon, Colby & Wang, 2005).

However, research also indicates that the difference in student achievement between National Board Certified Teachers (NBCTs) and non-National Board Certified Teachers (non-NBCTs) as measured by standardized tests is not significant (Cantrell, Fullerton, Kane, & Staiger, 2007). Researchers have also evidenced, that during the year teachers go through the National Board certification process they are significantly less effective in the classroom

(Goldhaber & Anthony, 2007; Goldhaber & Hansen, 2009; Harris & Sass, 2009), again as indicated on standardized tests. Goldhaber and Anthony (2007) note time intensity of the National Board assessment process as a concern as candidates spend a considerable amount of time completing the process that would have otherwise been allocated to teaching.

In addition, many teachers have published accounts about the challenges and obstacles they have faced going through the NBPTS certification process (Areglado, 1999; Benz, 1997; Mahaley, 1999; McReynolds, 1999; Wiebke, 2000). These testimonials often cite loneliness and a lack of social and intellectual support as barriers to their success.

Burroughs, Schwartz, and Hendricks-Lee (2000) found that teachers pursuing National Board certification struggle most with the written discourse requirements in the portfolio entries. Candidates often discuss their practice orally with colleagues, rather than written. National Board requires candidates to articulate their practice in writing providing evidence of the NBPTS standards. Regardless of candidates' classroom teaching experience, few are accustomed to the in-depth analysis and reflection teachers are required to demonstrate through the National Board certification process (Jennings, Joseph, & Orlando, 2007).

That said, acknowledging that National Board candidates may feel like they are, and indeed may be less effective during their certification year, it is vital to support them through the National Board certification process in order to help them be successful and also, hopefully, maintain at least a standard level of instructional quality. As one of the two NBCTs in my district and a candidate

support provider, I was curious as to how a series of cognitive coaching conversations aligned with the five core propositions of the National Board for Professional Teaching Standards (NBPTS) conducted within a community of practice would impact teachers' self-efficacy and understanding of the NBPTS standards during the National Board certification process. More specifically I wanted to determine if the intervention impacted teachers' perceived knowledge of their students. As well, I also wanted to determine whether the intervention impacted how the participants viewed themselves as a community of practice. And finally I wanted to determine whether the intervention impacted how the participants evaluated student learning.

My research also focused on cognitive coaching conversations and participation in communities of practice as National Board candidates in my school district engaged in the certification process. The mission of "cognitive coaching is to produce self-directed persons with the cognitive capacity for high performance, both independently and as members of a community" (Costa & Garmston, 2002, p.16). Through the use of open-ended questions, cognitive coaching conversations were intended to push candidate participants' thinking to a deeper level of understanding, and combined with the creation of a community of practice, to positively impact candidate participants' self-efficacy throughout the certification process.

Wegner (1998) contends that communities of practice (COPS) are organized around a particular area of knowledge and activities giving members a sense of joint enterprise. The teachers involved in the National Board certification

process represented a community of practice. Although they had different certificate areas, the expectations and language of the NBPTS standards and portfolio directions were meant to provide a common connection.

### **Theoretical Framework**

**Social Cognitive Theory.** Self-efficacy is a construct drawn from social cognitive theory - a theory that asserts a reciprocal causal model in which behavior, cognitions, and the environment all affect each other in a dynamic manner (Bandura, 1977, 1986). Individuals evaluate their own experiences and thought processes through reflection as self-reliant thought mediates between knowledge and action (Bandura, 1986).

According to Stajkovic and Luthans (1998), “Social cognitive theory is viewed as the acquisition of knowledge through cognitive processing of information...the social part acknowledges the social origins of much of human thought and action (what individuals learn by being part of a society), whereas the cognitive portion recognizes the influential contribution of thought processes to human motivation, attitudes and action” (p. 63).

During my intervention, the reciprocal causal model of social cognitive theory grounded my action research as National Board candidates partook in a community of practice and cognitive coaching conversations in order to help them develop a more thorough understanding of accomplished teaching as defined by the NBPTS five core propositions. Wenger (2000) states that communities of practice are the foundation of a social learning system where we define together what defines competence in a given context. The learning individuals find most

transformative takes place through membership in communities of practice (Wenger, 1998). Through discourse and social engagement candidates were to develop a deeper level knowledge of the NBPTS standards and portfolio directions individually and as a group. Cognitive coaching conversations and probing questioning provided opportunities to help teachers explore resources within themselves (Garmston, Linder & Whitaker, 1993), clarifying and analyzing their thinking around their teaching practice.

**Teacher self-efficacy.** Self-efficacy beliefs affect the choices people make and the courses of action they pursue (Bandura, 1986). In education self-efficacy beliefs are related to academic performance and self-regulating learning (Pajares, 1996; Schunk, 1991; Zimmerman, 1995). Individuals tend to engage in tasks with which they feel confident and competent and avoid those with which they do not. Efficacy beliefs also help determine how much effort people will expend on an activity, how long they persevere when confronting challenges, and how resilient they will be in the face of adverse situations (Schunk, 1981; Schunk & Hanson, 1985; Schunk, Hanson & Cox, 1987). Logically, these self-efficacy beliefs may relate to teachers' behaviors or their goals in the classroom (Bandura, 1997; Cantrell, 2003). Efficacy affects the effort teachers invest in their practice, the goals they set, and their aspirations (Tschannen-Moran & Woolfolk Hoy, 2001). Teachers with an increased sense of efficacy display advanced levels of planning and organization, as well as, try out different methods of instruction, search for improved teaching methods and experiment with instructional materials (Allinder, 1994; Guskey, 1988; Stein & Wang, 1988).

Teacher self-efficacy connected to the National Board certification process in a causal manner as candidates partook in a rigorous process of intensive self-assessment of their teaching practice. The NBPTS provided detailed instructions for each portfolio entry. However, the NBPTS does not provide specific examples of what a complete portfolio should look like. NBPTS honors that teaching can and should look different for each teacher, depending on the specific needs of the students. Yet there are many different ways to demonstrate accomplished teaching, and this ambiguity causes anxiety for some candidates Burroughs, Schwartz, and Hendricks-Lee (2000).

The National Board certification process pushed a candidates' thinking, causing them to question their practice, how they teach, and why they use certain strategies. Since the language of the NBPTS standards is ambiguous, it was open to many interpretations. Because of this, candidates who had a high sense of efficacy saw themselves and their practice as effective, while candidates who doubted their efficacy saw themselves and their practice as less effective (Bandura, 1993). As such, beliefs about personal competence helped determine the outcomes one expected, with higher confidence, candidates anticipated more successful outcomes respectively (Pajares & Schunk, 2001; Bandura 1993). Candidates may feel confident and see their practice as effective and ultimately not achieve certification; however, by going through the certification process they analyzed and reflected on their practice becoming more aware of their students' needs.

During this intervention, some candidates assessed their capabilities in relation to the attainment of others. Bandura (1993) states that people to whom individuals compare themselves influence how they judge their abilities. Social comparative standards affect National Board candidates' self-esteem and how much satisfaction they received from their accomplishments. As well, if a teacher's sense of efficacy was low, they avoided a task altogether or gave up easily when problems arose (Woolfolk, 1998). Cognitive coaching conversations and membership in a COP provided support for the teachers who went through the National Board certification process, which required them to describe, analyze, and reflect on their teaching, helping them ultimately achieve certification. Since National Board certification is a standardized process, candidates struggled because they were unable to demonstrate their practice as evidenced by the NBPTS standards.

**Cognitive Coaching<sup>SM</sup>**. Costa and Garmston (2002) developed the process of cognitive coaching based on the clinical supervision theories of Cogan (1973) and Anderson and Goldhammer (1969). Cognitive coaching provides a means to increase teacher efficacy (Edwards & Newton, 1995; Veenman, de Laat, & Staring, 1998) and improve teaching by helping teachers explore resources within themselves (Garmston et al., 1993). The mission of "cognitive coaching is to produce self-directed persons with the cognitive capacity for high performance, both independently and as members of a community" (Costa & Garmston, 2002, p.16). In addition, cognitive coaching supports the growth of social and emotional intelligence as defined by Goleman (2006). When individuals are coached they

have a richer understanding of their practice while expanding cognitive and affective capacities (Costa & Garmston, 2002; Ellison & Hayes, 2003; Knight, 2009). These processes are crucial for teachers at any stage of their career, especially National Board candidates.

Cognitive coaching provided a simple framework for conversations about planning, reflecting or problem solving. As a cognitive coach, I helped teachers take action toward their goals while simultaneously helping them develop expertise in planning, reflecting, problem solving, and decision-making (Costa & Garmston, 2002). Taking a non-judgmental stance, I used the tools of reflective questioning, pausing, paraphrasing, and probing to invite teachers to explore the thinking behind their practice (Costa & Garmston, 2002; Garmston et al., 1993; Knight, 2009) while supporting self-directed learning (Costa & Garmston, 2002; Ellison & Hayes, 2003; Knight; 2009; Lipton & Wellman, 2003). An important component of cognitive coaching was building trust, first, then push their thinking about their teaching practice (Costa & Garmston, 2002).

Through cognitive coaching conversations, a coach can paraphrase and ask probing questions assisting the teacher in clarifying, developing, and modifying their internal schema creating new learning (Costa & Garmston, 2002). This process helps teachers become self-reflective in their practice (Costa & Garmston, 2002; Ellison & Hayes, 2003; Lipton & Wellman, 2003). In short, engaging teachers, or in this case National Board candidates, in thoughtful conversations around their practice allows them to describe, analyze, and discuss their practice at a deeper level (Huebner, 2009).

In addition, cognitive coaching conversations promoted a continuous process of learning in which goals were set, actions were taken, and monitored. This process helped National Board candidates analyze and reflect on their teaching practices, while setting new goals (Costa & Garmston, 2002). Further, a shared and agreed upon structure for conversations has been shown to maximize time, while serving to focus attention by providing a scaffold for supporting and challenge thinking (Ellison & Hayes, 2003; Lipton & Wellman, 2003). With high standards and limited time, it was important for National Board candidates to set clear, attainable instructional goals ultimately impacting student achievement. As such, cognitive coaching conversations have been shown to assist teachers thinking clearly about their instructional goals (Costa & Garmston, 2002; Ellison & Hayes, 2003; Knight, 2009).

Within this intervention, cognitive coaching conversations aligned with the NBPTS core propositions helped to engage National Board candidates in conversations around their teaching practice. Cognitive coaching tools such as reflective questioning, pausing, paraphrasing, and probing were drawn from formal cognitive coaching trainings I have attended. The candidates involved in the National Board certification process represented a community of practice because of their work together, their shared goals and desire to become accomplished teachers.

**Communities of Practice.** As a social theory of learning, Wenger's (1998) concept of communities of practice (COPs) has been useful for investigating learning in groups of National Board candidates (Burroughs et al.,

2000). COPs are groups of people who share a common passion or concern for something they do, and they learn how to do it better as they regularly interact (Wenger, 2007). Wenger (2007) discusses three elements that distinguish a COP from other groups: the domain, the community, and the practice.

In this case, a commitment to a domain is related to each candidate's dedication to becoming a National Board certified teacher. The second element is the community. This was evidenced as candidates built relationships and engaged in activities and discussions around the National Board standards and certification process. Candidates helped one another as they shared information, supporting and contributing to the learning of the group. The third element is the practice, which united the candidates as practitioners as they created a shared practice through analyzing and reflecting their teaching practice as it aligned to the NBPTS standards.

The members of this COP included teachers who shared a common passion to become National Board certified teachers. According to the National Research Council (2008) some teachers pursue this certification for personal satisfaction or external recognition of their teaching, while others may be encouraged by the administration at their school or district. Regardless of their reasons for pursuing certification, the candidates who participated in this COP were engaged in conversations about their teaching practice as it aligned to the NBPTS standards.

Ellison and Hayes (2003) affirm while working with groups, outcomes are determined by shared thinking and individuals learn while a group's common

understanding is developed. Teacher learning is a repetitive practice that involves group interactions along with self-reflection (Garmston et al., 1993; Joyce & Showers, 1996; Peterson, Taylor, Burnham & Schock, 2009; Schon, 1987). This lends itself to NBPTS core proposition five: Teachers are members of learning communities. For this study, cognitive coaching conversations aligned with the NBPTS core propositions were used to structure interactions (Knight, 2009) focused on analysis and articulation of the five participant's teaching practice aligned to the NBPTS core propositions.

## **Chapter 2 Literature Review**

Mentoring is one component of many NBPTS support systems that sustains teacher commitment to the process (Anderson et al., 2004; Jennings et al., 2007; Pershey, 2001; Sato, 2008; Shulman, 2008; Zeichner & Wray, 2001).

Mentoring involves a NBCT who shares a similar certificate working closely with one to three candidates throughout their certification process. For this reason, many educational leaders across the country have established National Board teacher mentoring programs designed to support National Board candidates as they go through the certification process (Anderson et al., 2004; Burroughs, 2001; Coskie & Place, 2008).

On the other hand, candidate support programs are not directly part of the NBPTS, but sustained through state and local district support. In the Eastern states, candidate support is sustained by each state, whereas the Western states are considered more grassroots and controlled by local districts (Shakowski, 2010).

Elements of candidate support systems may include a core team of university faculty members (Anderson et al., 2004; Pershey, 2001) who support candidates via professional development and courses aligned to NBPTS, or they may include NBCTs who help to foster candidate success, provide information, and clarify expectations about the certification process (Jennings et al., 2007). These NBCTs, also known as Candidate Support Providers (CSP's), provide advice about time-management guidance, assistance regarding the preparation and selection of portfolio entries and artifacts, and video assistance during working sessions (Coskie & Place, 2008; Jennings et al., 2007; Pershey, 2001; Rotberg,

Futrell, & Holmes, 2000; Sato, Chung-Wei, & Darling-Hammond, 2008). Such support networks have been evidenced to promote teacher reflection (Burroughs, 2001; Coskie & Place, 2008; Sato et al., 2008; Standerfer, 2007) and build collegiality among candidates (Cascio, 1995; Jennings et al., 2007; Serafini, 2002). This is important especially since collaboration and conversations are essential to improve instruction and impact student learning (Costa & Garmston, 2002; Ellison & Hayes, 2003; Knight; 2009; Lipton & Wellman, 2003).

Experienced CSP's recognize that developing and fostering trust in relationships with candidates is critical to creating the emotional safety necessary for learning to occur, and for the complex tasks of examining and improving teaching practice to be successful (Costa & Garmston, 2002; Ellison & Hayes, 2003; Lipton & Wellman, 2003). When trusting relationships were established, teachers felt more comfortable discussing their lessons and thinking through the process of teaching, analyzing, and reflecting on their practice. In this study, cognitive coaching conversations aligned with the NBPTS core propositions, helped candidates' who were struggling with their thinking or writing. For example, when candidates were stuck, they second guessed their practice and doubted their effectiveness as a teacher, and as a CSP, I was there to help support them.

### **Context**

In 2009, Arizona ranked 17<sup>th</sup> nationwide in the number of new NBCTs with 123 earning certificates, an increase of 22% from 2008. Arizona was ranked

18th in the total number of teachers with 678 NBCT's who have achieved certification over time (Minichello, 2009).

In Arizona, National Board candidates receive support and mentoring through the Arizona K-12 Center, under the leadership of Kathy Wiebke and in partnership with Arizona State University (ASU), the Arizona Department of Education (ADE), and the Arizona Education Association (AEA). In Arizona, NB candidates receive support from CSP's who receive cognitive coaching and NB facilitator training. This support is unique to Arizona. The Arizona K-12 Center provides National Board pre-candidacy classes to candidates around the state. This class is not a requirement to become a National Board candidate; however, it is required to become eligible for a scholarship to help pay for the \$2,500 fee needed to become a candidate for National Board certification.

The pre-candidacy curriculum was created by several Arizona NBCT's including myself, with support from the Arizona K-12 Center in 2007. The course was designed to prepare participants for the process of pursuing National Board certification; challenging them to examine their practice and reflect on the impact their instructional decisions have on students. The Arizona K-12 Center pairs up National Board candidates with NBCTs who are trained CSP's, who utilize the pre-candidacy curriculum. The Mary Lou Fulton Teachers College at ASU provides funding to support the CSP's as they support candidates each year.

CSP's facilitate monthly, small group meetings for National Board candidates all across the state. CSP's do not read and edit candidates' portfolio entries; instead they use cognitive coaching conversations to help candidates

move forward in their thinking, examining, and reflecting on their practice (Allen & Blythe, 2004; Costa & Garmston, 2002; Ellison & Hayes, 2003), ultimately, and hopefully, helping them achieve National Board certification.

To shift candidates' thinking from where they are to where they want to be, CSP's choose from a menu of questions framed around the NBPTS core propositions and aligned with the architecture of accomplished teaching (see Appendix A). The architecture helps candidates plan their portfolio entries and collect evidence of their teaching practice. This architecture provides guiding questions around teachers' knowledge of students and commitment to goals (core proposition 1), teaching practice and instruction (core proposition 2), evaluation of student learning (core proposition 3), and reflection on lesson effectiveness (core proposition 4).

In 2010, there were two NBCT's, less than 1% of all teachers in my district. As a NBCT and CSP it was important for me to work with and support National Board candidates in my district. When I went through the National Board certification process I traveled out of town each month to small group meetings, which offered minimal structure and did not include cognitive coaching conversations. When I returned I felt isolated and alone. I talked to colleagues about the process, but they did not understand it. Recognizing the importance and need for local support in my district, I was motivated to establish a National Board candidate support program to promote and sustain candidates throughout their certification process.

## **Intervention**

The purpose of my intervention was to provide individual and group support to National Board candidates in my district during the 2010-2011 school year. I created a community where National Board candidates felt safe discussing and analyzing their practice, while I supported them through the board certification process.

CSP's typically meet individually with National Board candidates to engage in a planning or problem-solving conversation, however, there were few opportunities for follow-up conversations. Via this intervention I met individually with candidates at their request, but on an average of four to five times during the fall semester we met to engage in ongoing, one-on-one, cognitive coaching conversations aligned with the NBPTS core propositions (See Appendix C). These conversations provided structured opportunities for National Board candidates to engage in dialogue and focused discussions around their teaching practice, while reflecting on student learning (Costa & Garmston, 2002; Ellison & Hayes, 2003; Knight, 2009; Lipton & Wellman, 2003).

Although the conversations were framed by the NBPTS core propositions, the process was also driven by the immediate needs of each individual candidate. For example, if a candidate was unsure about where to begin with a specific unit, we engaged in a cognitive coaching conversation to help plan and communicate their goals for that specific lesson or unit. Recognizing there were times when candidates were frustrated and overwhelmed with the National Board certification

process, I used cognitive coaching conversations as a vehicle to clarify and ground their thinking (See Appendix C).

In addition, CSP's typically meet once a month with candidates in small group settings. These meetings are informal and generally focus on the needs of the entire group. Via this intervention I facilitated two monthly small group support meetings for National Board candidates. One monthly meeting included just 2010-2011 National Board candidates. I met with the candidates to discuss each portfolio entry and the requirements, using the architecture of accomplished teaching and the NBPTS core propositions to frame our discussions (see Appendix D). These meetings focused on specific portfolio entries, interpreting the directions and candidate requirements, and discussing how it looked in each candidate's classroom. In addition, I provided candidates opportunities to share experiences, challenges, and celebrations.

The second small group meeting consisted of a round table discussion providing opportunities for candidates to meet with our district's 2009-2010 National Board candidates, who were awaiting score release in December 2010 to find out if they had achieved National Board certification. I met with the 2009-2010 candidates who were interested to discuss expectations before they began to work with and provide advice to 2010-2011 candidates (see Appendix E). Since they were themselves candidates in the months prior, they offered suggestions and advice on entry organization, technology, planning and goal setting, as well as what they perceived did and did not work drawing on their own experiences as they went through the certification process. During these meetings I revisited the

portfolio entry addressed at the prior meeting. This allowed the current National Board candidates an opportunity to ask questions and for the advice of the former candidates.

At the end of each small group meeting, candidates were asked to discuss and answer the following questions: Where are you in your thinking now? How has this meeting helped you? This allowed candidates an opportunity to reflect on each meeting and where they were in the process.

### **Chapter 3 Methods**

Via my intervention it was important for me to increase the effectiveness of National Board candidate support in my district, a goal that lent itself to action research. According to Stringer (2007), action research seeks to develop and preserve social and personal exchanges that improve the social and emotional lives of all people who participate. This is particularly important as National Board candidates often face challenges related to loneliness and a lack of social and intellectual support going through the NBPTS certification process (Areglado, 1999; Benz, 1997; Mahaley, 1999; McReynolds, 1999; Wiebke, 2000). And this was particularly important as via my intervention I sought to answer the following research questions: What impact might cognitive coaching conversations and membership in a community of practice have on teachers' self-efficacy during the National Board certification process? Secondly, how would on-going cognitive coaching conversations and participation in a community of practice impact National Board candidates' understanding of the NBPTS standards? More specifically I wanted to determine if the intervention impacted teachers' perceived knowledge of their students. As well, I also wanted to determine whether the intervention impacted how the participants viewed themselves as a community of practice. And finally I wanted to determine whether the intervention impacted how the participants evaluated student learning.

In order to answer the above-mentioned research questions, I used a mixed methods research approach. Mixed methods research attempts to combine the strength in insight of qualitative research and strength in numbers of quantitative

research, recognizing both are important, useful, and if used together can provide several viewpoints on the same question to be answered (Creswell & Plano Clark, 2007; Gelo, Braakman, & Benetka, 2008; Johnson & Onwuebbuzie, 2004; Wooley, 2009). Specifically, I collected data from my participants using a pre/post survey, a pre/post semi-structured interview, on-going researcher observations, and transcripts from individual cognitive coaching conversations. I also conducted a case study, all with the following group of candidates (Frankel & Wallen, 2006; Miles & Huberman, 1994).

### **Participants**

There were nine teachers (2.67%) in my district and 5 teachers (1.48%) in my school pursuing National Board certification. In addition, two teachers from nearby districts joined this group for support. Due to time constraints it was unrealistic to study all eleven candidates; therefore, I constructed a stratified case study (Miles & Huberman, 1994) from which I sampled a subgroup of five teachers at my school pursuing National Board certification to participate in my study. All agreed to participate. This subgroup of teachers was selected because it was most convenient to have the five participants at one school.

Since National Board (NB) candidates are required to have three years teaching experience, a bachelor's degree, and hold a valid teaching license before entering the certification process, all five participants had this in common. Their teaching experience ranged from four to eight years experience. Two of the five teachers changed to a new grade level this year. They represented four different content areas, including: second grade, third grade, fifth grade and physical

education K-5, as well as, three different National Board certificate areas including: Early Childhood Generalist (ages 3-8), Middle Childhood Generalist (ages 7-12) and Early/Middle Childhood Physical Education (ages 3-18). The teachers represented 18.5% of the total teachers at my school, and they were all female and ranged in age from 28 to 44 years old.

### **Instruments**

**Pre/post survey.** I asked the five participants to complete a pre and post survey (see Appendix F). This survey consisted of 29 questions, with a mix of Likert-type and open-ended response items. The questions were categorized into six constructs, which I used to address both teacher self-efficacy and the NBPTS core propositions. This survey also included teacher efficacy items drawn from the Energy Sources Team Self-Assessment Survey created by Ellison and Hayes (2002). I piloted this survey instrument in the spring of 2010 using 10 National Board candidates, and I revised the survey accordingly given pilot participants' feedback.

**Pre/post semi-structured interviews.** I asked the five participants to partake in pre and post semi-structured interviews (see Appendix G). The interview protocol I used consisted of 10–12 open-ended questions I designed to encourage participants to openly discuss their experiences via the National Board certification process. The interviews took approximately 15-30 minutes per person and were conducted in person. I audiotaped and transcribed the interview data myself. I also piloted the interview instrument with three current National

Board candidates in the spring 2010 and revised the questions given pilot participants' feedback accordingly.

**Researcher observations.** I observed the five participants as they took part in two monthly small group support meetings. As stated, these monthly small group support meetings took place approximately every two weeks over the course of the 2010 fall semester. I audiotaped conversations to capture individual and group conversations framed around the architecture of accomplished teaching. I piloted the researcher observations with a group of participants involved in a National Board certification pre candidacy course in the spring 2010 and, again, revised the observation protocol (see Appendix H) accordingly.

**Cognitive Coaching<sup>SM</sup> transcripts.** I invited the five participants to take part in one cognitive coaching conversation aligned with the NBPTS core propositions each month. Encouraging deep analysis and reflection, the cognitive coaching conversations were meant to assist the participants in clarifying, developing, and modifying their internal schema to create new learning (Costa & Garmston, 2002), as well as help the five participants become more self-reflective in their practice (Costa & Garmston, 2002; Ellison & Hayes, 2003; Lipton & Wellman, 2003). As such, these conversations served as one of my most important sources of data. I conducted these conversations one-on-one and focused on the five participants' individual needs related to the National Board certification process (see Appendix C). Each conversation took 15-55 minutes, and I audiotaped and transcribed each conversation myself.

## **Data Analyses**

As stated, I used both quantitative and qualitative data analysis techniques to gain an understanding of what impact cognitive coaching conversations and membership in a community of practice had on teachers' self-efficacy during the National Board certification process, as well as the impact my actions had on their understanding of the NBPTS standards.

**Survey data.** I analyzed the quantitative, pre and post survey data over time comparing teachers' self-efficacy and their understanding of the NBPTS standards as participants progressed through the National Board certification process via my action. I analyzed all items on this survey using the statistics application SPSS, primarily using frequency and descriptive statistics to help explain and display the data. I also created a series of paired dependent samples t-tests to analyze and display relationships among pre and post survey items related to teachers' self-efficacy and their understanding of the NBPTS standards. I calculated Cronbach's alpha (1951) to verify the survey instrument yielded an appropriate level of reliability.

In terms of the open-ended responses written into the survey, I applied a grounded theory approach to data analysis. Glaser and Strauss (1967) define grounded theory as the discovery of theory from data, systematically obtained and analyzed in social research. I began by open coding the data by collecting, relating and comparing categories and properties to each other. I then used axial coding to compare data using the NBPTS core propositions as possible categories creating more complete explanations (Strauss & Corbin, 1990) of the impact

cognitive coaching conversations and creating a community of practice had on the five participants' self-efficacy and their understanding of the NBPTS standards.

**Qualitative data.** I also applied a grounded theory approach to the analysis of all of my other qualitative data by coding different patterns and using these codes to construct categories and themes related to the NBPTS core propositions. This helped me reduce all of the qualitative data I collected, and helped me to better explain the five participants' stories as they experienced the intervention (Miles & Huberman, 1994; Strauss & Corbin, 1990). Specifically, I analyzed the qualitative data gathered from pre and post interviews, researcher observations, cognitive coaching transcripts and items 24, 26, 28 and 29 of the pre and post survey (See Appendix F) to measure the five participants' self-reported levels of self-efficacy over time. I analyzed all information gathered from the small group meetings using coded researcher field notes to detail conversations and interactions that also addressed the research questions. In addition, I listened for remarks and observed actions such as posture and body language that seemingly, as I interpreted it, indicated a change in the five participants' self-efficacy and their understanding of the NBPTS standards during the small group support meetings.

In an effort to capture each candidate's story I also used a narrative research method of writing vignettes to tell each candidate's story (Frankel & Wallen, 2006). Each vignette included my experiences as the researcher (Barter & Renold, 1999), while I illustrated issues that occurred with some frequency across the five participants' lives (Seguin & Ambrosio, 2002). These vignettes were

meant to support and help explain the research collected through the survey, interviews, researcher observations, and cognitive coaching conversations (See Appendix I - M).

### **Validity and Reliability**

To increase validity, I triangulated the data I gathered from the pre and post surveys, pre and post interviews, researcher observations, and transcripts from individual cognitive coaching conversations (Campbell & Fiske, 1959; Denzin, 1978; Miles & Huberman, 1994). I did this not only to verify the strengths and weaknesses of each of the above-mentioned data collection and analytical methods, I also did this to help me determine what, if any impact cognitive coaching conversations and membership in a community of practice had on the five participants' self-efficacy and their understanding of the NBPTS standards during the National Board certification process. By triangulating the data I also determined what findings were consistent across data sources.

To increase reliability I worked with two other educators when coding my interview data. We coded independently and then compared our results and clarified discrepancies (Miles & Huberman, 1994). Check coding helped me eliminate incomplete or unclear data that could have resulted from one researcher, in this case me, analyzing my data in isolation (Miles & Huberman, 1994).

In addition, as mentioned, I calculated Cronbach's Alpha to ensure the five participants' were responding consistently across items and constructs included in the survey instrument (Table 1). Overall, the pre survey questions produced a .894 and the post survey a .835 alpha level demonstrating acceptable

reliability (See Appendix N). Six Likert-scale items were eliminated from the survey because the questions were either poorly constructed, which negatively impacted the reliability or more than one question or concept was addressed in the same question. A total of six questions in the pre survey were not addressed by two of the participants. Two questions in the post survey were not addressed by one of the five participants (See Appendix H).

Table 1

*Reliability of Constructs*

Constructs	N of items	Cronbach's Alpha Pre	Cronbach's Alpha Post
Self Efficacy	7	.762	.685
Core Proposition 1	2	<i>d</i>	<i>d</i>
Core Proposition 2	4	.908	.889
Core Proposition 3	4	.877	.788
Core Proposition 4	3	.933	.300
Core Proposition 5	4	.930	.889
Overall Survey	24	.894	.835

*d* indicates there were too few questions to calculate Alpha

I also attempted to increase the reliability and validity of my findings by conducting member checks after the small group support meetings to verify that the observational data I collected were accurate and consistent with the realities of the five participants involved in the intervention (Guba & Lincoln, 1981). At the end of each meeting, I presented my researcher observations I had recorded and asked the five participants to affirm that the observations reflected their views.

## **Chapter 4 - Findings**

### **Quantitative Measures**

I conducted a paired dependent samples t-test (two-tailed) to determine if any significant differences could be attributed to the intervention by construct (See Table 2). Statistically significant differences were posted on four of the six constructs. In addition I compared pre and post survey items within each construct. However, I did not find any statistical differences at the  $p \leq 0.05$  level (See Appendix O - T).

Table 2

*Intervention Construct Differences*

Construct	N		Pre Survey	Post Survey	$M_2 - M_1$	p	<i>d</i>
Construct 1: Self Efficacy	4	<i>M</i>	2.46	3.44	0.98	0.02*	3.13
		<i>SD</i>	.071	.437			
Construct 6: Teachers are members of learning communities	4	<i>M</i>	3.31	4.00	0.69	0.06**	2.06
		<i>SD</i>	.473	.000			
Construct 3: Teacher know the subjects they teach and how to teach them to students	5	<i>M</i>	2.95	3.60	0.65	0.11	1.30
		<i>SD</i>	.541	.454			
Construct 4: Teachers manage and monitor student learning	5	<i>M</i>	2.85	3.55	0.70	0.06**	1.28
		<i>SD</i>	.675	.370			
Construct 2: Teachers are committed to students and their learning	5	<i>M</i>	2.90	3.60	0.70	0.05*	1.27
		<i>SD</i>	.741	.223			
Construct 5: Teachers think systematically about their practice and learn from experience	5	<i>M</i>	2.33	3.00	0.67	0.14	1.27
		<i>SD</i>	.707	.235			

\* mean difference is significant at  $p \leq 0.05$

\*\* mean difference is significant at  $p \leq 0.10$

First, in terms of self-efficacy, I wanted to determine whether the intervention impacted how participants perceived their ability to successfully complete the National Board certification process. I found that the participants, after their involvement in this intervention had increased levels of self-efficacy.

The participants believed that they had the capabilities to successfully complete the board process. This large effect was statistically significant at the  $p \leq 0.05$  level ( $p = 0.02$ ;  $d = 3.13$ ), indicating that the participants agreed that the intervention positively impacted their self-efficacy through the fall semester. Cohen's (1988) definition of effect size states that an effect size between .20 and .30 may typify a small effect size, whereas an effect size of .50 may characterize a medium effect size, and an effect size of .80 or higher may represent a large effect (Cohen, 1988; Valentine & Cooper, 2003). Their heightened perceptions may not have had only to do with my intervention, however. The pre survey was administered at the beginning of the school year as the participants were just getting to know their students and the NBPTS standards and certification process, which could have impacted their sense of efficacy then. As such, this may be considered a threat to history, as it was not part of the study but occurred simultaneously, which may have threatened the validity (Glass & Smith, 1987). In addition, two of the participants had changed grade levels and were adjusting not only to the above-mentioned factors, but a different curriculum and working with new colleagues. Nonetheless, as will also be evidenced in the qualitative findings this intervention likely contributed to this perceived increase, as it provided structured opportunities for the participants to analyze and reflect on their instructional needs, teaching practice and impact on student learning, and they had ample opportunities to do this through small group support meetings and cognitive coaching conversations.

Second, in terms of commitment to students, I wanted to determine whether the intervention impacted teachers' perceived knowledge of their students. I found that after the intervention, the participants were more aware of setting high, meaningful instructional goals based on their knowledge of students and their needs. This large effect (Cohen, 1988) was statistically significant at the  $p \leq 0.05$  level ( $p = 0.05$ ;  $d = 1.27$ ), indicating that the participants more strongly agreed that the intervention positively impacted how they approached and planned for an instructional sequence. It may be plausible, however, that when the pre survey was administered the five participants had not developed substantial relationships with their students, nor did they understand what the learning needs of their students were. As well this event may be considered a threat to history, as it was not part of the study but occurred simultaneously (Glass & Smith, 1987). As will also be evidenced in the qualitative findings, this intervention likely contributed, however, to this perceived increase, as it provided structured opportunities for the participants to discuss and describe their teaching and student learning through small group support meetings and cognitive coaching conversations.

Third, in terms of participation in learning communities, I wanted to determine whether the intervention impacted how the five participants viewed themselves as a community of practice. I found that the participants, after involvement in this intervention, considered their National Board cohort a community of practice and that the small group meetings helped them understand and articulate their practice aligned to the NBPTS standards. This large effect

(Cohen, 1988) was statistically significant at the  $p \leq 0.10$  level ( $p = 0.06$ ;  $d = 2.06$ ), indicating that the intervention may have had a positive impact as it provided structured time devoted to supporting the participants' needs as they navigated through the board certification process. However, it is also possible that participants would have sought out one another and found a connection through the certification process alone.

And fourth, in terms of managing and monitoring student learning, I wanted to determine whether the intervention impacted how the participants evaluated student learning. I found that after the intervention, the participants were more likely to agree that their assessments provided evidence of student learning and attributed to effective instruction. This large effect (Cohen, 1988) was statistically significant at the  $p \leq 0.10$  level ( $p = 0.06$ ;  $d = 1.28$ ), the intervention appeared to have a positive impact. However it might also be attributed to the participants' increased levels of self-analysis and reflection of their teaching practice and impact on student learning. Nonetheless, as will also be evidenced in the qualitative findings, this intervention likely contributed to this increase, as it provided structured opportunities for the participants to analyze and discuss their students' instructional needs, how they approached these needs through instructional strategies and the impact on student learning. They had frequent opportunities to do this through small group support meetings and cognitive coaching conversations.

## **Qualitative Measures**

Again, I open coded the data collected from all of qualitative measures (Strauss & Corbin, 1990) to compare and organize the themes framed around the NBPTS core propositions. I used the method of check coding (Miles & Huberman, 1994) when analyzing the survey and interview data with two other researchers to eliminate incomplete data, which could have resulted in analyzing the data in isolation. To determine what themes were constructed among the five participant responses (Miles & Huberman, 1994) and to quantify these data, I also computed frequency statistics describing common themes to help illustrate participants' understandings of the NBPTS standards, perceived levels of self-efficacy, and their understandings of the NBPTS core propositions. Examining data from cognitive coaching conversations, I computed how often each portfolio entry was discussed compared to the logistics or technical conversations about the process itself. I computed how often each NBPTS core proposition was addressed, when it was evident that a shift in thinking occurred, potentially impacting participants' perceived self-efficacy. In an effort to evaluate and reflect on my cognitive coaching techniques, I computed how often I paraphrased and questioned participants (See Appendix U). Examining small group support meeting data, I computed themes, that were constructed through the process of check coding, as well as, which NBPTS core propositions were discussed and which portfolio entries were addressed (See Appendix V). The findings are presented in order, beginning with the greatest effects or significance of the intervention by theme.

**Core Proposition 4 – Teachers think systematically about their practice and learn from experience.** Across data sources, I found that the five participants became more self-reflective in their teaching practice throughout the semester of study. This makes sense because my main intent was to provide structured opportunities for the five participants to engage in conversations and focused discussions around their teaching practice. For the purpose of this study, I will define “self-reflection” as the deliberate process of defining and redefining classroom practice in light of actions (Serafini, 2002) or goals. In this case the dialogue participants engaged in while making connections to and discussing how to improve upon their instructional practice and the impact on student learning. In addition, I observed teachers using self-reflection as a key component to push on and extend their learning (Schon, 1983). The five participants began the process isolated in their thoughts or not outwardly sharing with one another. Throughout the intervention, they became more engaged in discussions and conversations with one another. This was evidenced in the following data corpuses as the participants analyze and discussed their practice, carefully considering the impact on student learning.

First, when all five participants were asked why they decided to go through the certification process, pre and post interview data provided evidence to support the notion that they engaged in the board process to increase their reflective teaching practices and, as one participant put it, to “become a better teacher or to improve my teaching and look closer at and analyze my practice.” Another stated:

I actually want to become a better teacher and I think I want to convince myself that I am a good teacher and I am hoping this process [National Board certification] will do that for me. I know that there are things [teaching practices and strategies] I want to change and I was hoping this [intervention] would help push me in that direction. I am not always convinced that I am doing what I want to be doing and this forces me to look at what I am doing and why I am doing it. I just want to become better because of it. It is not for the paper or the recognition; it is to become better.

Another respondent stated, that going through the process “could make me a better teacher, the next step for really delving into my practice, [help me] remain focused and maintain the highest expectations of myself in the classroom.” These responses were not unexpected as the five participants were most likely reflective in their teaching practice prior to beginning the National Board certification process and the intervention, so while I could argue that my intervention impacted their self-reflective behaviors, the sample of participants I included in this study were definitely self-reflective from the beginning given the very fact that they were all aiming for board certification.

But in terms of how my intervention may have indeed helped move them along in this process, I asked all five participants post-intervention, “Where are you in your thinking as far as the National Board certification process [now]? All five participants’ responded more favorably. One participant disclosed:

It has been eye opening [going through this process], I now analyze more so what I am doing and really try to collect more artifacts [student work samples] of what I am doing and I am really more honed in on assessments and seeing where the gains are. I am just far more reflective than I was.

Another participant stated:

The process [National Board certification] is mind boggling, I guess because it throws me through so many different twists and turns, ways that I guess surface level thinking that I have been at, but never quite knew how to dig deeper...And with my teaching I guess what I am liking is I think I am becoming better [hopefully through this intervention] at thinking why am I doing this and how will it best benefit my students, rather than just kind of doing something because it seems like the thing to do. So I found [sic] sometimes that I do more tweaking and maybe it is just a small tweak, it may not be anything big, but something small that can help my students more.

The five participants confirmed that going through this intervention, again in support of the National Board process, impacted their self-reflective behaviors and their teaching. They noted they more often analyzed why they teach, what they teach, and what the benefits on student learning might have been. The certification process encouraged them to question their practice and explore new teaching strategies, and they became more aware of their students' needs and how to address those needs.

Second, as the five participants engaged in cognitive coaching conversations throughout the intervention, they also expressed that they believed these helped them through the National Board process. Transcribed cognitive coaching conversations revealed the five participants reflected on their teaching practice. They continually reflected on their teaching throughout the course of the conversations, as well as at the end of each one when asked, “How has this conversation helped you?” After one conversation, one participant commented:

Just by organizing my thoughts and bouncing them off of somebody. And I am already doing these things [literacy assessments and parent communication]. The whole point with National Board is I am already doing all this. I just freak out about [whether] I have the documentation when it comes time to submit? Will I have these things documented? That’s what is overwhelming to me, because I am having these great conversations, but in the mix of everything, how am I going to write it down?

Cognitive coaching provided this participant a structured time to organize her thoughts and look at her practice from a different perspective. Ultimately she realized that there were components of her teaching practice that were already aligned with the NBPTS standards. Another participant reflected post-conversation:

Cognitive and closure [terms that appeared in the National Board portfolio directions that the participant needed to define]. Those are going to be my next goals. Whether I am making a phone call [1-800-22-TEACH to

contact National Board with questions] or looking in my glossary. I am still getting familiar with where everything is. So that helps because at least I have a direction so when I put my sign on my door this afternoon. [Please do not disturb – working on becoming a NB certified teacher] Those are some of the things I will start with, then I feel when I get ready for you to videotape next week, I have it in my head. I have skill development, I have related to that cognitive concept and I have closure. So those are the things that I think that maybe I am doing but I am not aware of knowing specifically what part it is. So I think that today's conversation, once I get that in my head a little bit more and debrief a little bit more, then I am ready for next week when we videotape.

Through a cognitive coaching conversation, this participant realized that there was terminology in the National Board portfolio directions that needed to be clarified. At the end of the conversation she felt confident that she had the resources to define the term “related cognitive concept” so she could thoroughly answer the portfolio questions. In sum, the participants reported that cognitive coaching conversations provided them with a structure to analyze and discuss their teaching practice, helped the participants focus on a specific lesson or plan a sequence of learning, and helped them to stop and think, all the while, again, reflecting on or thinking about their teaching.

Third, evidence of the five participants reflecting on their teaching practice was captured through my researcher observations at the small group support meetings I hosted. Approximately 75% of the time spent during these

meetings was spent reflecting. And at the end of each meeting, participants shared their goals and where they were in their thinking. One participant disclosed:

I am very excited, I went back through my entry 2 which is assessment and I looked at four possible lessons that I would be able to do two different types of assessment and that came through reading my standards [National Board] and going through some of the assessments in my entry, it gives you ideas that I have never done before. I mostly do informal assessments but I think it can really work and it might be kind of cool so I listed all those. I just need to decide which ones and then I will do it for the whole class and then I can decide which two students to use. I can talk to the kids about it while I do it. Even though I don't have to videotape I think I may still videotape so I can go back and write about the assessments. Then I went back to my entry 3 and I am kind of excited because it says creating a productive learning environment, which I love it, because it is all stuff I do and I can kick it up a notch and I picked a couple lessons for that one too for videotaping. So hopefully this quarter I can at least get a few more videotapes for entry 1 and now for entry 3, so I'll start going through the questions. I am excited. I worked on entries two and three today and got a lot done.

The small group support meetings provided her the structured time to read and revisit her NBPTS standards and portfolio directions. She realized there were several different types of assessments she could utilize within her physical

education classes. Via this intervention she also seemed more able to make connections and reflect on her current teaching. Another participant reflected:

I had a great time talking with [participant 1] about different things in each entry and breaking down the science component a little bit and finding out that I am not the only one who goes, “Ah the Big Ideas are too big!”[The math and science integration entry asks candidates to identify a big idea in science as defined by the National Science Standards] I needed more specifics and then [participant 1] had great questions that I did not even pay attention to. I would not have put that much thought into misconception and misunderstanding, but when she was talking about being able to answer that question and site those specific examples, I realized it was totally what I needed to do. I need to make sure I go back before my science is done and look at them again and just be ready to keep going.

During this group meeting and by being able to discuss the National Board portfolio questions with another participant, this participant was able to construct her own meaning of the terms misconception and misunderstanding. By defining these terms she was more aware of what skills and concepts her students needed to find success with her math and science integration entry.

Self-reflection was evidenced across data sources as the five participants engaged in conversations with one another and myself. Through this intervention they used the structured opportunities to describe, discuss, analyze and ultimately

reflect on their practice and of student learning at a deeper level, more so than they likely ever would have if not having gone through this certification process.

**Core Proposition 1 – Teachers are committed to students and their learning.** Across data sources I also found the five participants were committed to students and their learning. This makes sense because the goal of my intervention was to provide structured opportunities for the five participants to engage in conversations focused on their students. Using the architecture of accomplished teaching (Appendix A) to frame questions and conversations I invited participants to focus on who their students were and what they needed. Again, while I will evidence that my intervention impacted their knowledge of and commitment to students, the sample of participants I included in this study were likely student-focused from the beginning.

First, the five participants felt it was important to create positive relationships and connect with their students as indicated by the pre interview data. Yet after this intervention, post interview data provided evidence to support that they felt they became even more consistently aware of who their students were and even more attentive to how they might meet their students' individual needs. One participant captured this in her post interview as she described her changing relationship with her students:

I know each individual student more so. As good teachers we should, but I would say far more, I can really communicate where each child is at in their reading/writing and why. The National Board process [and

intervention] has really made me take a closer look at each student and their work.

In her post interview, another participant summarized student learning in her classroom:

I feel like I am very aware of where my students are [in their learning]. I feel like for lack of a better word, I am in their business all the time. I don't need to refer back to my data as often as I did before to recall a specific about someone. For some reason it is just there, it is just in my brain. And not just specific data but oh, so and so is having trouble using capitals and periods in their writing. Or so and so is really struggling in science because they just don't like it. I am finding the phrase "Because I know...I do...impacts my students" [sentence stem used to assist National Board candidates focus on student learning] is always kind of in my brain. That is how I am thinking of each plan...I know that a lot of the time the gaps [in student learning], most of the time the gaps are not surprises. But for the most part knowing their gaps and knowing their strengths, it has been a huge advantage this year for the class and for myself.

But in relation to how my intervention may have assisted them in this process, the five participants revealed that throughout this intervention supporting the National Board certification process, they became more aware of and better understood their students and what they needed to learn. Via the intervention and certification process, they felt better prepared to meet those student needs.

Second, the five participants also stated that engaging in cognitive coaching conversations throughout the intervention, during which they discussed their knowledge of students and evidence of student learning, helped them focus more so on their students. Transcribed cognitive coaching conversations revealed that overall the five participants discussed students and their learning needs approximately 90% of the time. One participant reflected on a student she was considering featuring for a literacy work sample entry:

It [the cognitive coaching conversation process] helped me identify, as we were talking [and] writing down the points, the specific things [questions about literacy development] I am looking at in him. I was having trouble pinpointing exactly what, so it was nice to hear you reflect back on [paraphrase] what I was saying because for me it helped me solidify the three biggest aspects that I need to look at: Developing his academic language, developing comprehension or having him identify big ideas, and the ability to use tools appropriately to help him master the concept or the skill at hand. That is where we are at, introducing the tools, now.

Cognitive coaching conversations provided this participant the time and tools to self-reflect on one student's literacy development and where she needed to focus her instruction. In short, the cognitive coaching conversations provided a structured time for the five participants to talk about their students and what their needs were.

Third, evidence of the five participants discussing students' learning needs was captured through my observations of small group support meetings.

Approximately 75% of the time spent during those meetings was also spent discussing participants' students and their learning. While one participant was engaged in a conversation with me about a science and math video analysis entry, she commented:

I decided to use the YouTube video after reading the book to the class because I know my students respond and integrate information and build that knowledge into their own schema much quicker when I incorporate music or movement into the lesson. I was confident they would successfully be able to sequence the life cycle of a pumpkin.

This small group support meeting provided the time and structure this participant needed to discuss and analyze her video. She was able to articulate why she chose a specific activity and how she perceived that it impacted her students' learning.

In another conversation, one participant connected to and better understood her students' literacy development via the structured small group support meetings. She noted:

Some [students] are just worried about making mistakes; if they don't spell it [words] correctly it bothers them...some of them are just writing letters. They understand words are made of letters. I am trying to have them make a line if they don't know the letters for a word.

In short, the five participants were dedicated to their students and the belief that all students can learn. They adjusted their teaching based on the needs of each child and their class.

The small group support meetings provided opportunities for the five participants to talk about their students and the impact of their teaching practice with one another. Through these conversations, they became more aware of who their students were and what they needed.

In sum, knowledge of students was evident across data sources as the five participants engaged in small group support meetings and cognitive coaching conversations. The architecture of accomplished teaching helped them focus on discussions around their knowledge of students as a foundation to set goals, implement and evaluate instruction, and reflect on their teaching.

**Core Proposition 2 – Teachers know the subjects they teach and how to teach those subjects to students.** Across data sources, I also found the five participants better articulated their instructional practices and better defined their knowledge of content and curriculum more often throughout the semester of study. They were more aware of their students' prior knowledge and understood students' learning needs at a deeper level. This seems logical, again, because my intent was to provide structured opportunities for the participants to engage in conversations about their teaching practice. However, the participants initially had difficulty connecting their teaching practice to the NBPTS standards. It was not until the end of the study that some of the participants began to make connections between their practice and the NBPTS standards. While my intervention had something to do with this, because I ended data collection at the mid-way point of the National Board certification process I can only argue that participants, due to my intervention, are well on their way. While I will continue to collect data as I

support the five participants through the end of March when their portfolio entries are submitted, below is the evidence that supports my aforementioned claim.

First, post interview data revealed that the five participants' realized they needed to align their teaching practice to the NBPTS standards, which was challenging. Initially, the five participants were asked "How do you feel about your knowledge of the content or curriculum at your grade level?" On one hand they described their knowledge of content as "fairly strong, " "pretty good, " "confident, " and " [that one was] extremely knowledgeable." But on the other hand, they used words such as, "concerned," "challenging, " "frustrated, " and "ambivalence" in their responses, indicating that before the intervention they were not convinced that they articulated their knowledge of the curriculum and or content well. With two of the participants teaching at a new grade level and our district moving toward implementation of the Common Core State Standards, these results were not unexpected.

After the intervention, some of the participants noted they were more able to align their grade level standards and their teaching practice to the NBPTS standards. When asked "How do you feel about your knowledge of the content or curriculum at your grade level and the NBPTS standards?" in the post interview, one participant stated:

Yes there is definitely a correlation [connection between the grade level or content standards and the National Board standards], grade level content is almost surface level and National Board standards are really where you dig in deep, you make that grade level stuff meaningful.

Another participant replied:

I feel like National Board standards are the catalyst, looking deeper because our content, the things that we have to teach the content [state content standards] are not adequate, they are not equitable, they [the state content standards] are not what the kids need.

The participants also recognized the state content standards were broad which made it difficult to teach concepts in depth. Via this intervention, however, they believed that the NBPTS standards provided a framework, which supported more in-depth teaching that would ultimately impact students' understanding. Through conversations and structured time, they aligned the NBPTS standards to their content standards making them more meaningful and relevant to their students.

Second, via analyses of the transcribed cognitive coaching conversational data, the five participants discussed their grade level curriculum and their instructional approaches approximately 80% of the time. The following excerpt details one participant's thought process during a reflecting conversation. She videotaped an integrated math and science lesson, after which I asked her questions to help her explain and analyze her teaching.

Me – So if you think about the rotations [science and math centers] today, what do you want to be mindful of in yourself?

Participant – I was happy as a general rule with most of my questioning. I don't think I gave "spit back the answer" [recall] questions. I think I was fairly good at that.

Me – What might be some examples of those questions?

Participant: Why do you think a pumpkin has so many seeds? I was very purposeful at the living/non-living station [students were asked to sort pictures and explain why they were living or non-living] by putting the statue of the unicorn because I was guessing they would put it under living and then to ask, “Why did you put this under living?” For them to come back and then to say what is this? I know that is more rhetorical. But they stuck with it at first, unicorn. It’s a unicorn and I can’t remember exactly how my questions went to get more. That is when student one blew me away, “It is a statue.” Yes, way to go it is a statue! Now is a statue living or non-living? And right away they [other students at the table] were, “Oh! It is non-living.” Then I asked the more rhetorical questions: “Does it need food? Does it move?” And it was “no, no, no.” [students’ response]. But I was purposeful in asking those questions too because they tend to miss that it [a living thing] moves and they tend to miss that it grows and changes. They seem[ed] to get that it reproduces and what it needs. It needs food. It needs water. It needs sunlight. It needs air. Those [living things] needs, especially, the food and water, so now I want them to get some of those other things [that a living thing needs]. So probably to be more purposeful and asking those questions. Does it move? So they start asking themselves, does it move?

Through this conversation, the participant reflected on her teaching and revisited her overall goal of students understanding the difference between living and non-living things. She discussed the types of questions she wanted to ask that would

potentially push her students' thinking and help them better understand the concept.

In short, cognitive coaching conversations provided a structured time for the five participants to talk about their grade level content and how they aligned to the NBPTS standards, structured time they would not have had without this intervention. Participants seemed to have learned more given that during the cognitive coaching conversations, I asked questions that pushed their thinking around instruction, content, and impact on student learning.

Third, through my observations of small group support meetings it was evident that the five participants self reported through their conversations that they began to align their teaching practice to the NBPTS standards. Participants discussed and articulated how their content standards and teaching practice aligned to the NBPTS standards 75% of the time. Two participants aligned their teaching practice to the NBPTS standards as evidenced in this example:

Participant Two - But my question is how is literacy defined. What is a definition? Should I focus more on the phonemic things that I know about literacy development or is that the 6 traits of writing? Or both?

Participant Four- I see it as both. I see what I am doing through writing is making their reading more meaningful, providing a purpose. So for me it is not specific to the 6 traits, it is the conversation we have about their development as a writer or about the way that they are using their writing to respond to literature.

Participant Two - Looking at how they are spelling their words in relation to their ability to read and looking at their literacy development.

Participant Four - For me the part that I am focusing on more than the phonetics of their writing, obviously for some that plays a role. But I am looking at the big idea of comprehension and their ability to process information that they have read.

Participant Two - So like in a literary response.

Participant Four - So for me, the journals because when I read about fossils then their journal prompt or question on Friday was “Fossils are interesting because...” They had to list three things that made fossils interesting to them, three things that we had learned... they just went off of what they had in their heads. Some of them got some details but not as much as if they had been able to refer to the book. They are not actually using the tools for the meaningful learning.

Participant Two - So every time we read and write I am focusing on topic sentences and supporting details. For example using *The Park Ranger* [grade level reading story]. So I could say that all students understand their writing through instruction and are referencing this through reading and through writing structure.

Participant Four - Exactly. We did it the other day with voice. The author gives the characters voice [writing trait] and that helps us understand who they are and we hear that in our heads.

Through this conversation, the two participants made meaning of the NBPTS standards and articulated them in their teaching practice. The language of the NBPTS standards is purposely ambiguous, allowing teachers to demonstrate multiple pathways to accomplished teaching. Via my intervention, this was an instance where this occurred.

During another small group support meeting, two participants again talked about how their practice aligned their practice to the NBPTS standards through a meaningful discussion focused on the language in the portfolio directions for a math and science integration entry:

Participant One- *Site examples of students' understanding and misunderstandings.* [reading from the NB science and math portfolio directions] I get that. Misconceptions, errors and progress. What is the difference between misconceptions, misunderstandings and errors?

Participant Four - Maybe an error would be having the wrong answer or draw on the wrong conclusion and a misunderstanding is having bad prior knowledge and not understanding the concept.

Participant One - I can think of what a misconception is maybe when I have them [students] do the initial sort of living and non-living things. Maybe there won't be a plant in there [sorting activity] or maybe a robot [picture card] will go under living things because it moves. I don't know. Would that be a misconception? So an error, is it simply if they are counting the seeds and they counted them wrong. Then what is the difference between misunderstanding and misconception?

Participant Four - Maybe they misunderstood the goal.

Participant One - Or because something moves, because my \_\_\_\_\_ can move and grow. I am just trying to delineate, because I am not sure I would speak to it correctly when I am writing if I completely understand what they are asking.

Participant Four - These conversations are always so good, I would not have read it the way you read it.

Through discussion these two participants were able to better understand, articulated their thinking and defined the terms misconceptions and misunderstandings. The participants who talked about aligning their practice to the NBPTS standards actively sought out and engaged in cognitive coaching conversations, more frequently. And thanks to my intervention the participants were able to more clearly articulate their teaching practice as defined by the NBPTS standards.

In sum, the fact that the participants believed they had a strong grasp of their content knowledge was evident across data sources as the five participants engaged in small group support meetings and cognitive coaching conversations. Because of this intervention, the five participants were definitely more confident with their abilities to teach and articulate their content knowledge as aligned to the NBPTS standards. But again, although this intervention provided the structured time participants needed to discuss and articulate their practice and the NBPTS standards, given the high caliber of these teachers they may have made these connections without the intervention, although arguably to a lesser degree

given the very fact that they engaged in critical dialogue and discourse about their practice (Burroughs et al., 2000; Serafini, 2002).

**Core Proposition 3 --Teachers are responsible for managing and monitoring student learning.** Across data sources, I also found that the five participants discussed assessments and or how they managed and monitored student learning often. In short, the five participants were dedicated to using multiple methods of instruction to meet their learning goals. They monitored individual students' successes, all the while evaluating the progress of their class collectively. These behaviors increased from the beginning to the end of my intervention.

First, post interview data revealed that the five participants felt more positive about student learning in their classrooms. During the pre interview they described student learning as, "a progression," "daily assessments," "student observations," "students asking questions." After the intervention, in the post interview, the five participants articulated their teaching practice and how it impacted student learning in their classrooms by stating, "Learning is student engaged," "differentiated," "successful," "personal," and "building students' confidence." These responses illustrated the participants' deeper understanding of students' learning in light of their learning goals. After the intervention, for example, one participant disclosed how differently student learning looked in her classroom:

Student learning in my classroom, I would say it has become very student engaged learning [sic], it was a place that I always wanted to go but I

knew that I was not there. And this [the intervention and National Board certification process] has really helped me get more student-to-student engagement rather than me talking and telling them. They [the students] are doing a lot more learning and discovering from each other. So it is really a lot of student integrated learning. I am more of a facilitator at this point. I give them some information and then they go and absorb it and make it their own and give it to each other. It is just amazing. Sometimes they are actually doing better work when they are talking with each other. There are things [skills and content] that I try to pull from them when I am working with them and they don't do it, but when I am walking around the room and they are doing some of their sage and scribe [cooperative learning structure where students are paired together - one students dictates and one writes], some of their partner-work. Like all of a sudden I have student one say, "No I disagree, this starts with a [letter] m." But yet he can't tell me it starts with a [letter] m when it is him [sic] and I. But he can do it with a picture [of an object that begins with the letter m] when he is working with his partner and he did [sic] several corrections [when his partner said the incorrect letter sound]... There is a light bulb going on for him and it is happening when he is working with his peers.

Another participant reflected on student learning in her classroom during the post interview:

A lot of it [the instructional activities] in here [the classroom] is building their confidence. It is 95% building their confidence and 5% teaching it.

And that is really what happens on a day-to-day basis. I teach it [concepts and skills], but I spend the majority of the time convincing them that they can do it. And that is really what this year is about. Building self-esteem. Making them see that their reading isn't what they think it is. Yes you are reading at this level, but look what happens when you do this. And seeing their score [reading rate] go from this to this in the next story, jumping up 30 words. And it is not that I really did anything, except tell them that you can do this and consistently reinforce you can do it! You can do it! You can do it!

The five participants revealed that managing and monitoring student learning was now more of an important component. They also confirmed that student learning looked different based on the needs of their students.

Second, analyses of the transcribed cognitive coaching conversations revealed that the five participants discussed managing and monitoring student learning approximately 70% of the time. This was most likely more than they would have discussed this if working in isolation, or not involved in this intervention. But they discussed most importantly what they needed to know about this construct and helped each other negotiate meanings around it. During one cognitive coaching conversation a participant discussed monitoring student learning:

I treated each child individually. His mom said that he was supposed to be retained last year. His phonemic awareness [was] very low, his spelling was very low obviously and his fluency was very low. So knowing that he

was in my reading intervention group [30 minute time each day, where each grade, levels students by reading ability] and I worked a lot with him in small groups [focused reading instruction] in the room and we have had the sight word initiative [recognition for reading specific sight words] in the class. That has become more evident and I gave him a Jerry Johns assessment [reading fluency assessment] within the week and he did the 2<sup>nd</sup> grade passage that means his fluency improved. He had these errors [teacher shows individual assessment to me]. He is instructionally, right now in 2<sup>nd</sup> grade and at the very beginning his initial Dibels [reading assessment that indicates words read per minute] was a 37 wpm [words per minute] and in October he had gone up to 50 wpm, when I did the second assessment. His overall fluency has improved and that has come out in his writing as well.

Through a cognitive coaching conversation this participant articulated how she was managing and monitoring this student's reading levels using multiple indicators of performance, as well as, multiple strategies to provide instruction. Throughout the intervention she continued to recognize that several assessments were needed to more accurately monitor students' successes and track learning.

Third, through my observations of small group support meetings I found that the five participants believed they were more aware of student learning and how to monitor it based on the needs of each student. Participants discussed high expectations and goals for students' learning 75% of the time, again, which is likely more than they would have ever discussed this construct if it was not for

this intervention. But they discussed most importantly what they needed to know about this construct and helped each other negotiate meanings around it. The following discussion depicted one participants' conversation with me as she explored her teaching practice, student needs, and monitoring progress in literacy development:

Participant Two - If I know I am looking at some of their assessments I am wondering now what the current data is [sic].

Participant Two - Today I pulled the journals of the students to check if there were trends. So, if I pull samples [student work samples], my instruction is then documented between them [two periods of time] or can I retroactively talk about things. Everyday we go over blends and diagraphs.

Me - Maybe it is looking at a [student] writing sample. Once you have a students' writing sample then you can develop questions you have about that student [Entry 1: Literacy Development asks participants to develop questions about each students' literacy development].

Participant Two - There are so many assessments that I want to make sure they match the writing sample, so that they guide instruction.

Me - Your data and assessments can be a layer that supports the student work sample and your questions. This might help you zero in on a specific area to help inform your instruction.

Participant Two - Materials, daily routines, strategies [participant brainstorms other instructional strategies that may inform instruction].

During a small group support meeting she discussed how she assessed students' literacy development in light of the portfolio directions for entry 1. She realized there were several strategies and assessments that she already implemented in her classroom that aligned to the NBPTS standards. Prior to this conversation, she was unable to connect her practice and assessments to the NBPTS standards. She viewed them as two separate entities.

In sum, managing and monitoring student learning was evident across data sources as participants engaged in conversations and discussions about their teaching and impact on students. Through this intervention, the five participants described, analyzed and reflected on knowledge of students, teaching, and how they evaluated student learning, more so than they likely ever would have had it not been for their involvement in this intervention.

**Teachers are members of learning communities.** Finally, across data sources I found that the five participants still needed support discussing and coming to terms with their role as a leader, learner, and collaborator with families and the community as per the requirements written into Entry 4: Documented accomplishments: Contributions to student learning requires the participants to discuss their contributions as a learner, leader, and collaborator with families and the community. Participants are to choose up to eight accomplishments that are significant in their teaching and demonstrate how these accomplishments impact student learning to satisfy this requirement.

First, pre and post interview data revealed that the five participants struggled with this component of the National Board certification process. Before

the start of the intervention, participants were asked how they involved parents in their classroom. The participants described parent involvement as, “weak,” “difficult and challenging,” and “not extensive and limited.” After the intervention, the five participants responded that they worked more collaboratively with parents by, for example, “implementing family nights to discuss student achievement, [maintain] constant communication with parents via emails, websites and newsletters.” But while the participants had increased collaboration and involvement with parents, the participants still felt this entry and the essential components needed more attention. In the post interview, one participant revealed:

It is still a weak point of mine [working collaboratively with parents], real honestly. But I am going to be doing our cookies and cocoa night [holiday, family night], which will be telling parents where we are right now [student learning] and where I want to be at the end of the year or where their students should be at the end of the year [instructional goals]...So that December 1<sup>st</sup> night will be huge because it is going to be giving them resources [learning games and activities] and what they can do with the resources, that it is just not a flashcard, it is how to play games, how to get your child using words in a sentence, how to sounds out words, how to get them on paper. So making sure that parents really understand that it is not just flashcards but really pushing their thinking.

The five participants were aware of the requirements of entry four, however minimal time was spent on it during cognitive coaching conversations and small

group support meetings. The participants seemed more focused on the classroom-based entries, which required more immediate analysis and reflection of their teaching practice. Entry 4 allowed the participants to go back five years to document accomplishments as a leader and learner and the current year as a collaborator with families and the community.

Transcribed cognitive coaching conversations also revealed the five participants discussed their role as a leader, learner and partner with families and the community approximately 30% of the time. That said it was difficult for them to articulate their accomplishments and the impact on student learning, largely because we focused on this entry inordinately less. However, during these conversations it was not uncommon for participants to struggle with the organization of their thoughts in relation to their accomplishments. That said, the following conversation was representative of the five participants.

Participant Two - Okay, I am trying to stream line this [parent communication], I have the star folders [daily folders that go home with students] that I am communicating back and forth with [sic] and I am on the phone and emails. It is constant all day and it is hard to sit down and put it into a log. So I don't know [how to organize the parent communication log for entry 4]?

Me - So what would be the easiest way for you to organize it?

Participant Two - On email, ironically a majority of the parents do not want to communicate in the written folder, so that would mean every single time I write a note I would have to log that. When I log that am I

logging a synapse or just that it was a note home? I would like to focus on a few students. There are some students that I communicate with parents multiple times a day.

Me - Okay. So would it help, if you chose a communication log [National Board provides an example communication log], focusing on just a couple of students? Would it make it easier for you to manage?

Participant Two - Yes. I would log the dates and time of the phone calls and give a synopsis of the call and with these same parents I am also on email. I opened up a file in my email, which I shoot those emails into... I know they are there for me to reference later. So I could easily then at the end of the day or week, go back and say this is the date and time of the email and log that. If I am only working with a few students, that's fine, if it's the whole class with 26 students, it's difficult.

Me - So by focusing on just 1, 2, or 3 students, it would really enable you to go in depth with them. Where, if you kept with your entire class it would get overwhelming and there are pieces you might forget.

Participant Two - I started out very in depth giving synopsis and a week just went by and I haven't logged anything. If I am getting that in depth with the whole class it is too overwhelming. But I can do that with a few [students]... Okay, yes that makes me feel better then. And that is manageable.

This particular conversation assisted the participant in narrowing her focus to just a few students when documenting parent communication. She was overwhelmed

and struggled with how to document the parent communication component before this conversation. However, this was only one conversation and it was difficult to find others to evidence that we collectively focused on this construct enough.

Evidence from my observations of the small group meetings also indicated the five participants discussed their accomplishments as a leader, learner and collaborator with parents and the community 38% of the time. Again, we allocated substantially less time to this entry than all others. Our first two small group support meetings focused on entry four, but conversations were not detailed and it was difficult for participants to articulate the impact their accomplishments had on student learning.

In sum, participants articulated their role as a leader, learner and collaborator with families and the community less frequently than the other four core propositions. This was evidenced across data sources as the five participants engaged in conversations and small group support meetings. During the timeframe of this intervention, the participants used less time during the structured opportunities to describe, discuss, analyze their role as a leader, learner, and collaborator with families and the community. As leader, I also noted that I did not advocate for more time to be spent on entry 4 discussion. We spent time initially in which the participants discussed possible accomplishments and set goals; however, given the short time frame of this study we did not revisit it.

## Chapter 5 - Conclusions

Throughout this study, it was important for me to explore how to increase the effectiveness of National Board candidate support in my district. Even given my small sample size, the 15-week duration of the intervention, and not having a comparison group against whom I could compare my results, the findings of this study evidence that I took a step in the right direction to gather a better understanding of how to provide National Board candidates professional support. Cognitive coaching conversations helped push participants' thinking to a deeper level of understanding as they talked more about their practice. This combined with participation in a small group support meeting, positively impacted participants' perceived levels of self-efficacy and their better articulation and understanding of the NBPTS standards throughout the board certification process. Participants also engaged in conversations analyzing and discussing their teaching practice, while supporting and contributing to the learning of the group.

Specifically, and in response to research question one, I found that cognitive coaching conversations positively impacted participants' perceived levels of self-efficacy by helping them explore resources within themselves. These structured opportunities provided time for the participants to describe, discuss, analyze, and ultimately reflect on their practice, focusing on student learning. Through cognitive coaching conversations, I asked questions that helped them move forward in their thinking, helping them clarify their goals. I also found that participation in small group support meetings positively impacted participants' self-reported levels of self-efficacy. There were times when

participants came to these meetings feeling discouraged, but after talking with one another they realized they were not alone. The participants learned from each other as they celebrated successes and exposed weaknesses in their teaching, and the participants collaboratively supported and motivated one another throughout the intervention.

In order to improve the impact of cognitive coaching conversations next time, however, I would schedule time at least once every two weeks to meet with candidates. One meeting a month was helpful, but to foster progress, more time was needed. Since time was limited in most situations, more frequent conversations might have helped candidates delve deeper into their portfolio requirements and how their teaching practice aligned.

In response to research question two, I found that cognitive coaching conversations positively impacted the participants' understanding of the NBPTS standards. Through cognitive coaching conversations, the participants became more aware of what their students needs were. Better understanding their student needs, the participants were more cognizant of how their teaching practice impacted students' learning, at least at a conceptual level. I found that participation in our small group support meetings also impacted the participants' understanding of the NBPTS standards. These meetings provided structured time for participants to discuss their learning goals in light of what they knew about their students. Conversations between participants helped them more clearly articulate their practice and align it to the NBPTS standards.

In order to increase the effectiveness of the cognitive coaching conversations, however, I am continuing to meet with the participants through to the end of their National Board candidacy. Recognizing predictions can strengthen the validity of research findings (Miles & Huberman, 1994), I predicted whether each participant will or will not achieve National Board certification based on the data analyzed during this study (See Appendix W) and will follow up with this data in the fall 2011. I also plan to explore the possibility of having both a planning and reflecting conversation around the same sequence of instruction. In order to improve small group support meetings, I would like to also look at a more structured approach to our meetings. Perhaps examining one entry at a time, answering each time: What are the entry requirements? What standards are addressed? I plan to use this approach to further engage candidates in dialogue and discussion around their practice, aligning even more to the NBPTS standards.

The NB candidates from 2009-2010 who were awaiting their scores impacted the five participants in different ways. The five participants used this time to pick their brains and ask for advice and organizational tips. As the semester went on, participation from 2009-2010 candidates lessened. Some of the participants felt overwhelmed and asked if they could work in another area that was quieter. I accommodated their request by opening a classroom and office area next to our meeting room. Overall participants appreciated the extra support.

In an effort to improve this support, I would meet individually with past candidates and express the needs and concerns of new candidates, so support

would be more focused. This might be as simple as a pre meeting immediately prior to the small group support meeting. I would also take time from the small group support meetings to discuss with current candidates how to make the support more effective when involved in these collaborative meetings.

In Arizona, this research may have implications for future studies as it outlines a purposeful, structured approach to candidate support including both cognitive coaching conversations and small group support meetings (See Appendix X). First steps in expanding this research and work will be finding other CSP' s who are committed to this level of candidate support. Being mindful and purposeful in expanding this research will build on Arizona' s unique approach to NB candidate support.

Although teacher effectiveness was not directly addressed in this study, the five participants did maintain a standard level of instructional quality, calling into question the previous research that indicated that teachers as less effective during the course of NB certification. This focus on instructional quality became evident through conversations that they engaged in during cognitive coaching conversations and small group support meetings.

In short this study provides a framework for National Board candidate support. As CSP' s we need to realize how important it is to look at each individual candidate and examine his or her needs. Some work better alone, while others benefit from discussion. Some prefer individual support from cognitive coaching conversations, while others prefer working in a group, contributing and sharing knowledge. It is important to recognize each candidate is on his or her

own personal journey of accomplished teaching. Through cognitive coaching conversations and participation in a COP, we can provide tools to assist them in this process.

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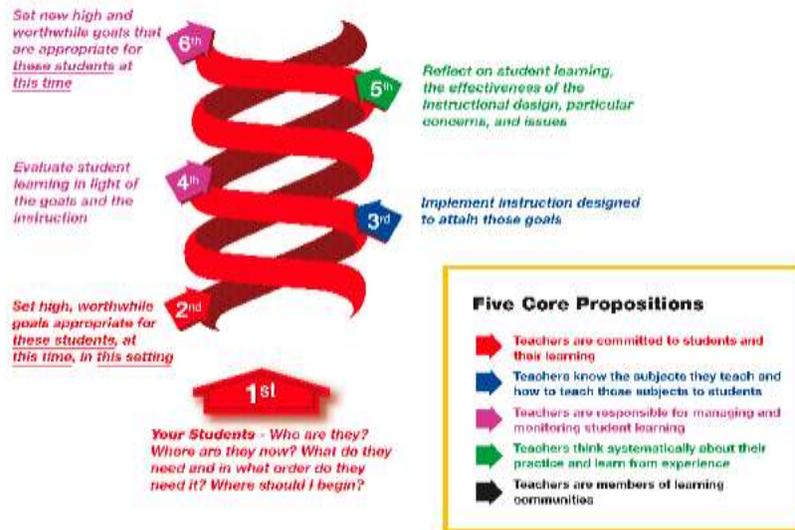
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APPENDIX A

NATIONAL BOARD PROFESSIONAL TEACHING  
ARCHITECTURE OF ACCOMPLISHED TEACHING

**The Architecture of Accomplished Teaching:  
What is underneath the surface?**



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National Board for Professional Teaching Standards. (2005). Architecture of accomplished teaching. Retrieved February 1, 2010 from [http://www.nbpts.org/userfiles/File/Part1\\_general\\_portfolio\\_instructions.pdf](http://www.nbpts.org/userfiles/File/Part1_general_portfolio_instructions.pdf)



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February 8, 2011

Ms. Jennifer M. Robinson  
Instructional Coach  
Maricopa Unified School District  
1664 East Balboa Drive  
Casa Grande, AZ 85122

Re: Reprinting of National Board's materials

Dear Ms. Robinson:

I am writing in response to your request for permission to reprint the National Board for Professional Teaching Standards' (the "National Board") "The Architecture of Accomplished Teaching" in your dissertation entitled "supporting National Board candidates via Cognitive Conversations and Communities of Practice." Based on your stated purpose, the National Board hereby grants you, effective upon your execution of this letter agreement, a limited non-exclusive license to reprint the National Board's Architecture of Accomplished Teaching on the terms and conditions set forth in this letter.

1. The term of this license agreement is for the printing of the dissertation.
2. The National Board shall remain the sole and exclusive owner of all intellectual property rights in the National Board's materials. The license granted you in this letter may not be transferred, assigned, or sublicensed to any other person or organization.
3. When referring to the National Board's materials you will include the following acknowledgement and disclaimer in a conspicuous and prominent manner:  
  
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4. You will provide the National Board with at least two (2) copies of any works created by you that contain any of the materials or trademarks licensed hereunder, which the National Board may use for its National Board's internal business or educational purposes.

*Better Teaching,  
Better Learning, Better Schools*

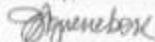
5. If you violate any term or condition of this letter agreement, the license granted in this letter shall immediately terminate without any further action required on the part of the National Board, and you will immediately end all uses of National Board materials and/or trademarks. In addition, the National Board reserves the right to terminate the license if you take any action which, in the judgment of the National Board, harms the reputation and/or goodwill of the National Board or any of the National Board's intellectual property rights.

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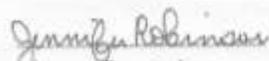
National Board for Professional Teaching Standards  
Attention: Corporate Affairs  
1525 Wilson Blvd., Suite 500  
Arlington, VA 22209  
Fax: (703) 465-2715

If you do not agree to the terms and conditions in this letter, you may not use any copyrighted publications or trademarks of the National Board. If you have any questions, please contact Marc D'Anjou, at (703) 465-8865 or [mdanjou@nbtgs.org](mailto:mdanjou@nbtgs.org).

Sincerely,

  
Joseph A. Aguerreberre, Ed.D.  
President and CEO

AGREED AND ACKNOWLEDGED:

By:   
Name: Jennifer Robinson  
Date: 01/10/2011

## APPENDIX B

### COGNITIVE COACHING CONVERSATIONS WITH PARTICIPANTS

Cognitive Coaching Conversations					
Date	P1	P2	P3	P4	P5
08/02-08/06					
08/09-08/13					
08/16-08/20	X				
08/23-08/27		X	X	X	X
08/30-09/03					
09/06-09/10	X				
09/13-09/17		X	X	X	X
09/20-09/24	X				
09/27-10/01	X			X	
10/04-10/08	X			X	
Fall Break					
10/18-10/22	X			X	X
10/25-10/29	X				
11/01-11/05	X	X	X		X
11/08-11/12			X		
11/15-11/19					
Thanksgiving Break					

APPENDIX C  
COGNITIVE COACHING QUESTIONS ALIGNED TO  
ARCHITECTURE OF ACCOMPLISHED TEACHING

<b>Coaching Conversations<sup>SM</sup> (Planning or Reflecting) - 1x / month with each candidate</b> The <i>architecture of accomplished teaching</i> will be used to frame each conversation	
Teacher: Certificate:	Date: Entry Focus:
What is your goal for this meeting? What entry do you want support with?	
<p style="text-align: center;"><b><u>Planning Conversation</u></b></p> <p><b><u>1. Knowledge of Students</u></b> Who are your students? Where are they now? What do they need? In what order do they need it? Where should you begin?</p> <p><b><u>2. Set Learning Goals?</u></b> What high, worthwhile goals can be set at this time, in this setting, for these students? Why are these goals appropriate? What do you want students to learn?</p> <p><b><u>3. Implement Instruction</u></b> What instructional strategies would be most effective for meeting the goals? What materials, people or places can you use to enhance student learning? How can you vary the learning experiences / strategies to meet the needs of the learners?</p> <p><b><u>4. Evaluate student learning</u></b> How does your goal(s) fit into the sequence of the unit or theme? In what ways will assessment support your learning goals? What indicators will you have that learning was successful?</p> <p><b><i>How has this conversation helped you?</i></b> <b><i>What are your next steps?</i></b></p>	<p style="text-align: center;"><b><u>Reflecting Conversation</u></b></p> <p><b><u>1. Knowledge of Students</u></b> Who are your students? Where are they now? What do they need? In what order do they need it? Where should you begin?</p> <p><b><u>2. Set Learning Goals?</u></b> What were your learning goals for these students? Why were the goals appropriate? What did you want students to learn?</p> <p><b><u>3. Implement Instruction</u></b> What instructional strategies did you use to meet the goals? What materials, people or places did you use to enhance student learning? How did you vary the learning experiences / strategies to meet the needs of the learners?</p> <p><b><u>4. Evaluate student learning</u></b> How did your goal(s) fit into the sequence of the unit or theme? In what ways did assessment support your learning goals? What indicators do you have that learning was successful?</p> <p><b><u>5. Reflect on teaching practice</u></b> What would you do differently? What are your next steps?</p> <p><b><u>6. Set new learning goals</u></b> What new goals are appropriate for these students, at this time, in this setting? <b><i>How has this conversation helped you?</i></b> <b><i>What are your next steps?</i></b></p>

APPENDIX D  
MONTHLY SMALL GROUP MEETINGS

October 6, 2010	4:30-6:00	October 20, 2010	4:30-6:00
<p style="text-align: center;">Round Table Discussion</p> <p><u>General Questions</u>  <u>Round Table Discussions</u>  A Closer Look at <u>Entry 1</u> using the <u>architecture of accomplished teaching</u> to guide conversations.  <u>1. Knowledge of Students</u>  Who are your students? Where are they now? What do they need? In what order do they need it? Where do you begin?  <u>2. Set Learning Goals?</u>  What high, worthwhile goals can be provided at this time, in this setting, for these students? Why are the goals appropriate? What do you want students to learn?  <u>3. Implement Instruction</u>  What instructional strategies would be most effective for meeting the goals? What materials, people or places can you use to enhance student learning? How can you vary the learning experiences /strategies to meet the needs of the learners?  <u>4. Evaluate student learning</u>  How does your goal(s) fit into the sequence for the your unit?  In what ways did assessment support your learning goals?  What indicators do you have that learning was successful?  <u>5. Reflect on teaching practice</u>  What would you do differently? What are your steps?  <u>6. Set new learning goals</u>  Now what goals are appropriate for these students?  <u>Closing Thoughts</u> (<i>Candidates will reflect in their journals</i>)  Where are you in your thinking?  How has this meeting helped you?  What are your goals for October 20?</p>		<p style="text-align: center;">Cohort Group Meeting</p> <p>Portfolio Entries Overview: Entry 1, Entry 2, Entry 3, Entry 4  A Closer Look at <u>Entry 2 and Entry 3</u>– (video) using the <u>architecture of accomplished teaching</u> to guide conversations.  <u>1. Knowledge of Students</u>  Who are your students? Where are they now? What do they need? In what order do they need it? Where do you begin?  <u>2. Set Learning Goals?</u>  What high, worthwhile goals can be provided at this time, in this setting, for these students? Why are the goals appropriate? What do you want students to learn?  <u>3. Implement Instruction</u>  What instructional strategies would be most effective for meeting the goals? What materials, people or places can you use to enhance student learning? How can you vary the learning experiences /strategies to meet the needs of the learners?  <u>4. Evaluate student learning</u>  How does your goal(s) fit into the sequence for the your unit?  In what ways did assessment support your learning goals?  What indicators do you have that learning was successful?  <u>5. Reflect on teaching practice</u>  What would you do differently? What are your steps?  <u>6. Set new learning goals</u>  Now what goals are appropriate for these students?  <u>Closing Thoughts</u> (<i>Candidates will reflect in their journals</i>)  Where are you in your thinking now?  How has this meeting helped you?  What are your goals for November 3?</p>	

APPENDIX E  
CANDIDATE SUPPORT MEETING WITH  
2009-2010 CANDIDATES AGENDA

- What does candidate support include?
- Roles and responsibilities at the Round Table Sessions
  - Honor and respect professional choices and decisions made by candidates
  - Maintain a clear distinction between personal opinions and NBPTS policies
  - Use of portfolios and video recordings
  - Myths and Facts
  - The architecture of accomplished teaching
  - Questions that push a candidate’s thinking
  - What to say and what not to say to candidates
- Comments and Concerns
  
- Round Table Discussion Dates

<i>Date</i>	<i>Time</i>	<i>Focus</i>	<i>Location</i>
Wednesday August 11 <sup>th</sup>	4:30 - 6:00	NB Process and Overview Paperwork and Eligibility	Room 7
Wednesday September 8 <sup>th</sup>	4:30 - 6:00	Entry 4 Documented Accomplishments	Room 7
Wednesday October 6 <sup>th</sup>	4:30 - 6:00	Entry 1 Student Work Sample	Room 7
Wednesday November 17 <sup>th</sup>	4:30 - 6:00	Entry 2 & 3 Video Entries	Room 7

APPENDIX F  
RESEARCH SURVEY

In considering the statements it is important to remember that you are responding in a way which best describes your thinking about your teaching <i>right now</i> , while you are going through the National Board certification process, not how you'd like to be.				
<b>SA = Strongly Agree</b>	<b>A = Agree</b>	<b>D = Disagree</b>	<b>SD = Strongly Disagree</b>	
<b><i>Teacher Self-Efficacy</i></b>				
1. My lesson or unit goals are important to me.	S A	A	D	S D
2. My effectiveness in the classroom has the effect I would like it to have.	S A	A	D	S D
3. I rarely feel uncertain and fearful in my teaching.	S A	A	D	S D
4. I have control over what happens in my classroom.	S A	A	D	S D
5. My instructional practice impacts my students' learning.	S A	A	D	S D
6. I rarely overlook what happens in my classroom.	S A	A	D	S D
7. I maintain a standard level of instructional quality.	S A	A	D	S D
<b><i>Core Proposition 1: Teachers are committed to students and their learning</i></b>				
8. When I plan an instructional sequence, I keep high, worthwhile goals in mind.	S A	A	D	S D
9. I can provide clear evidence of what student learning looks like.	S A	A	D	S D
<b><i>Core Proposition 2: Teachers know the subjects they teach and how to teach those subjects to students</i></b>				
10. My learning goals connect to the NBPTS standards in my practice.	S A	A	D	S D
11. I implement a variety of instructional strategies.	S A	A	D	S D
12. The instructional materials and strategies I use align with my learning goal(s).	S A	A	D	S D
13. The instructional materials and strategies I use support student learning.	S A	A	D	S D
<b><i>Core Proposition 3: Teachers manage and monitor student learning</i></b>				
14. In light of my instructional goals, my assessments provide evidence of student learning.	S A	A	D	S D
15. I evaluate student learning to determine if my instructional goals have been successful.	S A	A	D	S D
16. The assessments provide me new knowledge about my students' learning.	S A	A	D	S D
17. Through my assessment(s) I can determine if my instruction was effective.	S A	A	D	S D

<b><i>Core Proposition 4: Teachers think systematically about their practice and learn from experience</i></b>				
18. I make the right choices for planning and implementation of lessons.	S A	A	D	S D
19. I collect evidence of my students demonstrating mastery.	S A	A	D	S D
20. I am clear on which direction to go next with my students.	S A	A	D	S D
<b><i>Core Proposition 5: Teachers are members of learning communities</i></b>				
21. I consider my National Board candidacy cohort a learning community.	S A	A	D	S D
22. The small group meetings help me understand my teaching practice aligned to the NBPTS standards.	S A	A	D	S D
23. The small group meetings help me articulate my teaching practice aligned to the NBPTS standards.	S A	A	D	S D
24. Tell me about your experience with the small group meetings.				
25. Cognitive coaching conversations help me articulate my teaching practice.	S A	A	D	S D
26. Tell me about your experience with cognitive coaching <sup>SM</sup> conversations?				
27. Has the National Board certification process impacted your teaching?	Yes		No	
28. How has the National Board certification process impacted your teaching?				
29. How confident do you feel in your ability to complete the National Board certification process?				

## APPENDIX G

### SEMI-STRUCTURED PRE-INTERVIEW AND POST-INTERVIEW

## Pre-Interview

In an effort to maintain and continue high quality National Board candidate support it is essential to have input from candidates as they begin and are going through the process. Please feel comfortable to be completely honest as you answer these questions.

1. The National Board certification process is a personal journey of accomplished teaching. There are several different reasons teachers begin the process. I am curious to know your story. Why have you decided to go through this certification process?
2. As you begin the National Board certification process, what are you thinking about?
3. The National Board standards are built around five core propositions, which do you feel most connected to?
4. Describe your relationship with the students in your class.
5. How do you feel about your knowledge of the content or curriculum at your grade level?
6. Tell me how you know students are learning?
7. How would you describe your teaching practice?
8. How would you describe your collaboration with colleagues?
9. Tell me to what extent you involve parents in your classroom.
10. Do you have other thoughts, comments or concerns you would like to add?

Over the next several months we will meet as a community of practice to discuss portfolio entry specifics and individually to engage in cognitive coaching conversations to plan and reflect on your teaching. You will be asked to participate in follow up interviews. In an effort to collect accurate and meaningful data I will also ask you to complete short online surveys. I would like to take the

time to say *Thank You* for participating in this research study. Your input and participation is valued and appreciated. I commend you for embarking on the National Board journey.

## Post-Interview

In an effort to maintain and continue high quality National Board candidate support it is essential to have input from candidates as they are going through the process. Please feel comfortable to be completely honest as you answer these questions.

1. The National Board certification process is a personal journey of accomplished teaching. There are several different reasons teachers begin the process. I am curious to know your story. Why have you decided to go through this certification process?
2. As you continue through the National Board certification process, where are you in your thinking about the process and your teaching?
3. The National Board standards are built around five core propositions, at this point in the process, which do you feel most connected to? Why?
4. At this time, describe your relationship with the students in your class.
5. How do you feel about your knowledge of your grade level content / curriculum in relation to the NBPTS standards?
6. How would you describe student learning in your classroom?
7. At this time, how would you describe your teaching practice? How are you able to align your practice to the NBPTS standards?
8. At this time of the year, describe how you collaborate with colleagues?
9. Tell me how you work collaboratively with parents.
10. How has cognitive coaching conversations impacted your certification process?
11. How have small group meetings impacted your certification process?
12. Do you have other thoughts, comments or concerns you would like to add?

I would like to take the time to say *Thank You* for participating in this research study. Your input and participation is valued and appreciated. I commend you for embarking on the National Board journey.

APPENDIX H  
RESEARCHER OBSERVATION

Observation #:

Location:

Purpose of the Observation:

Date:

Start and Stop Time:

Attendees: See Attendance Sheet

Researcher Role:

Descriptive Notes	Reflective Notes

APPENDIX I

VIGNETTE – PARTICIPANT ONE

Jill is in her fourth year of teaching and recently changed grade levels. She first expressed interest in the National Board certification process in the spring of 2009. She went through a pre-candidacy course at our school and decided that she would not become a candidate; it was not her time. She rejoined us in the spring of 2010 and took the pre-candidacy course again. During the spring, Jill's mom was ill and passed away. Over the summer, Jill explored the possibility of moving from 2<sup>nd</sup> grade to teach at kindergarten. All summer she prepared for both grade levels and the week before school started she got the official word that she would be teaching kindergarten. She was excited and eager to begin.

Our first cognitive coaching conversation was mid August. I remember feeling very nervous and unsure of my ability to ask the right questions. Jill was nervous too. She was quite and reserved. We began discussing entry 4 accomplishments and she struggled finding the words to describe how she impacted her student teacher the previous fall and what documentation would support it. We moved through the conversation, I paraphrased and asked questions to mediate her thinking. She paused and thought and reflected on her teaching practice and where she wanted to be. She realized that she was not allowing herself to just teach; she was stuck following the curriculum. During the conversation she commented, "I was very frustrated and you don't feel impactful when you are just sitting here and teaching from a stupid book. Because I knew the book didn't have everything they needed but I felt like I had to. It's better; it is so much better. Huh." (sigh) Our first conversation resulted in a shift in her thinking. Through out the course of the fall, Jill and I met several early mornings

to have cognitive coaching conversations. These conversations were focused on several different entries, students and lessons.

When asked to describe cognitive coaching conversations, Jill said “It has been huge. That has been my favorite part of this process so far because I do get very stuck in my brain and to have someone just question me another way has turned my thinking so many times. It has been very impactful. I don’t know that I could have done this without that, 100% honest truth. I get very emotional when I think about my coaching sessions because they have changed me, they have changed me on the inside, maybe you can’t see it on the outside, but inside they have changed me in ways that I think about kids, the way I think about teaching and things that I do. So it has been huge. I would not have enjoyed this, okay enjoyed this at all if it weren’t for the cognitive coaching, it is huge.”

During small group meetings Jill was very focused and cognizant of time. When it came to small group meetings, she often removed herself from the group and work independently. If she was engaged in conversations, it was generally quick and in a 1:1 situation. She used this time to focus on her work and could usually be found at the horseshoe table toward the back of the room where she had easy access to electricity.

When asked to describe small group meetings, Jill said, “I don’t feel the small group meetings have impacted me as much. (sigh) I don’t want to say they haven’t at all because it has been helpful to hear where other people have been stuck or the frustrations that have been happening, but usually they have not turned me or moved me anywhere as significantly. Sometimes talking with some

of the other participants maybe 1:1 conversations some of those have really helped especially with some of my (former) grade level team members, since I switched. But other than that, not significantly. Enjoyed them yes, but a lot of times it was having that time to work is what became significant.”

By November Jill had one videotaped lesson, which she was comfortable using for entry 3 and had begun writing on entry 1 and 3. She was planning a Social Studies / Art lesson for video taping in January.

APPENDIX J

VIGNETTE – PARTICIPANT TWO

Molly has been in education for eight years and switched grade levels right before school started. She first expressed interest in the National Board certification process in the spring of 2010. She attended the first few pre-candidacy courses at our school and decided that she was going to explore other professional opportunities; it wasn't the right time for her to pursue the National Board process. A few weeks past and Molly asked to rejoin our group. We were able to meet and get caught up and she finished the class and declared candidacy. Over the summer, Molly had discussed moving from 5th grade if there were openings. The day before school started, she decided to switch to teach second grade. She was excited and eager to begin, but very overwhelmed with the grade level switch.

Our first cognitive coaching conversation was mid August. Our conversations were always short and to the point. As a cognitive coach I did not feel successful. I had become very aware of setting my feelings aside and focusing on Molly's needs. At the beginning she seemed overwhelmed and exhausted. When asked to describe cognitive coaching conversations, Molly said, "It has helped immensely because I have been so incredibly busy this year with the grade level switch that it has kept me focused on National Board because truthfully I would not be working on it right now because I have so many other things going on. So it has helped me through the process. It has helped me when I am completely stressed out and I just realized that there is support and also to accept the fact that even if I don't make it this year, truthfully that is not even my

goal, I am enjoying the process and becoming a better teacher, especially at a new grade level. So that has helped immensely.”

During small group meetings, Molly would sit by herself or off to the side. She often seemed preoccupied and disengaged at times. She seemed to get distracted easily, however we had several coaching conversations within the small group meetings. She used the small group meetings to ground herself and to realize that she was not alone in this overwhelming and frustrating process. Molly missed two meetings and left several other meetings early due to various reasons. When asked to describe small group meetings, Molly said, “I wouldn’t say I get a lot of work done in there. It helps to refocus each time that we meet on what I am trying to do. Then in some of those conversations, getting ideas from other teachers and just moral support when sometimes people have rough weeks and it is nice to hear that not everyone got a lot done or where people are at in the process. So basically I would say just kind of refocuses me every couple of weeks to keep thinking about it.”

Molly often had friends and family visiting or she was going to visit them. She was always busy and didn’t seem to have time outside of school to spend on her National Board process. During one quick conversation in the hall during a planning time, Molly was ready to withdrawal from the process. She had gone as far as contacting the Arizona K-12 Center to let them know, so they could reallocate the money she had received through scholarship funds. She was just overwhelmed and concerned with how she would finish. We talked about different options and broke down some of the entries into manageable pieces. By

the end of the day she was committed to finishing the process. She decided she would give it her best attempt and it was okay if she did not achieve this year.

By November, Molly had not started to videotape for either entry 2 or 3. She had begun to collect work samples for entry 1 and documented accomplishments for entry 4.

APPENDIX K

VIGNETTE – PARTICIPANT THREE

Andrea has taught for four years and first expressed interest in the National Board certification process in the spring of 2009, however she did not have the required three years of teaching. She joined our pre-candidacy course in the spring of 2010. Andrea was motivated and excited to begin the process. She easily and confidently articulated her practice and found connections to the NB standards.

Our first cognitive coaching conversation was mid August. Andrea was fun to coach; she never lost her motivation and desire to be the best teacher possible. She embraced the conversations and moved forward in her thinking. Our conversations felt very natural; she was easy to talk to. She knew her content and articulated her practice clearly. When asked to describe cognitive coaching conversations, Andrea said, “It always leaves me feeling motivated and excited after meeting with you. Even if you don’t give me the answer, you guide me to it. You make me think, which is exactly what it is, cognitive coaching. Maybe I thought about it that way but didn’t explore it enough or maybe I never even thought about it that way, but you phrase it differently and you make me go oh, hmmm. Kind of look at it differently and write it down or find a different place to look for it or ask somebody or collaborate with somebody. So the coaching sessions have been fun because it kind of makes me use my brain in a different way about the same topic, so I love it. It is fun, so you have been a big motivator and driving force. It is good because then when you leave I feel like I have all these things in my head that I didn’t think of before that now I can put on paper or put into action.”

Andrea seemed to really enjoy small group meetings. She was excited and willing to share her experiences and ideas. She engaged in conversations, while staying focused on her goal for the evening. Later she said that the small group meetings motivated her to stay focused and committed to the process. Andrea described how small group meetings impacted her certification process, “It is the motivation of being around other people who have the same goal. We all want what is best for our kids. And if that means we have to take the time and the effort to evaluate our practice. It is just fun because we all have the same goal, so even if no one else is PE, we all have the same big picture and so just listening to everyone and watching and throwing out ideas or frustrations or anything else it is just neat to have that support. I can honestly say at this point that if we didn’t have the meetings if we didn’t have all the support that we have I wouldn’t be nearly as far as I am now. Because I know myself and even if there is a set schedule, there is always just life and yes it is something that is important to me, but would it be that important if I didn’t have the support? Probably, but I would not be as productive.”

Andrea lost her mother-in-law during the fall semester. This did not derail her desire and motivation to continue. She took a week off and was back and ready to go by the end of October. In November, Andrea had several videotapes that she might be able to use for her entries. She had begun writing on her accomplished documents and some of her portfolio entries.

APPENDIX L

VIGNETTE – PARTICIPANT FOUR

Julie has taught for the past five years and first expressed interest in the National Board certification process in the spring of 2010. She attended the pre-candidacy course at our school and decided to declare her candidacy at the end of the school year. She was excited because another teammate was also going through the process. With two teachers pursuing National Board certification it would be easier to persuade another teammates' thinking and allow her to step out of the box and not be confined to the text book and district adopted curriculum.

Our first cognitive coaching conversation was mid August. Our conversations were thorough and reflective. It became very clear how much she cared about her kids and wanted them all to be successful. She was purposeful with her activities and wanted to extend their learning. Julie described cognitive coaching conversations as, "I ask myself questions now. I feel like it has given me efficacy because I have to be able to validate my own successes or I have to be able to validate things that I see going well and I have to be able to state a correction for something that might not have gone well. Nobody is 'spoon-feeding' the answers any more, when things go a rye or when you are left with data that makes you go huh, where did we miss, where did we not connect on this idea or skill? I think that it has definitely given me the confidence to say I did a good job or I need to go back to the drawing board and look at this. But in myself I know that I might be able to figure out a way to make it happen and go with my instinct that if I want to review it tomorrow, it doesn't matter if there is time in the schedule, we need to make time because they didn't get it. We need to discuss and

reviewing making those allowances. “Because I know...I do...it impacts my students because or it impacts them by.”

Julie enjoyed the small group meetings and sought out deep, rich conversations that pushed her thinking. There were times when she became frustrated because another member of her team, who was also going through the certification process had not been open to her suggestions or seemed to shoot her ideas down. As the semester went on, it was interesting to see Julie’s self-esteem increase as she realized her ideas and teaching strategies were impacting her students’ learning. The other participant also began to seek out advice and conversations with her. Julie describe her experience in small group support meetings as, “I think it is am amazing opportunity to come together with people who are struggling, succeeding, failing, what ever the day may be through their own process and be able to find strength in helping or strength in listening or strength in asking as you are going through the process. And not just typing the paper or submitting the evidence, but continuing to create that environment in your classroom that is most beneficial to your students and when you see things going a rye, you don’t have to worry-no one will ever know. It is all right that it went wrong, so trying to figure out why it went wrong and how can I make it better next time. Was it poor planning or preparation on my part or was it just not thinking about the questions before hand? And also being able to celebrate those successes with people who have no ego at stake in your success and who truly want to see you be successful and in return it creates a successful environment for all teachers in the school, in the district, in an area. Because you never know when

that student might be your student and if I am successful, hopefully the next teacher will be just as successful or more successful than I was. And the student will be the most successful.”

Julie battled health issues throughout the fall, which included visits to the doctors and various specialists, as well as different tests and procedures. She finally had her gall bladder removed. She missed one meeting and several days of school because of this but never expressed withdrawing from the process as an option.

In November, Julie had only videotaped a few times and was planning on using them for her video entries. Because she had missed time, she was concerned about the disconnect her class was experiencing with a substitute teacher.

APPENDIX M

VIGNETTE – PARTICIPANT FIVE

Sally has been teaching for four years and first expressed interest in the National Board certification process in the spring of 2010. She attended the pre-candidacy course at our school and decided to declare her candidacy at the end of the school year. She was persuaded to go through this process by two other colleagues. Another teacher at our school had gone through the process last year, which sparked her interest.

Our first cognitive coaching conversation was mid August. Our conversations were always lengthy and sometimes very random. These conversations helped Sally narrow her thoughts and focus on more concrete ideas. As a coach I realized it was not about me, it was about being there for Sally. She needed her voice heard and to talk about her teaching and values. By paraphrasing, I was able to validate her thoughts. She was able to better articulate her thinking and teaching as the semester went on. Sally described cognitive coaching conversations as, "It makes me narrow my thoughts. I think oh what a great idea and then I begin to rethink and let me focus on what I want to do. It has caused me to focus a little more."

During our small group meetings, Sally generally sat with the teachers from other schools and different content areas. She eagerly shared her experience and ideas, but seemed removed from the teachers at our school. It wasn't until late in the semester that Sally started sharing and contributing more with the whole group. One teacher with whom she had connected and sat with had withdrawn from the process pushing her into discussions with the rest of the group.

When asked to describe how small group meetings impacted her certification process, Sally said, “Those actually pretty good most of the time because I start to think oh my gosh I am no where, I don’t feel like I am making any progress and you go in and hear everyone else say the same thing and you think okay, not a loser. Either I am not a loser or we are all losers. And I chose to believe we are not. That is the best part, knowing that I am not alone in being lost. And going in and hearing how stressful it makes you, oh my gosh. But then holy smokes hearing the scores, it was one person who oh my gosh she did it. The one person who said her whole everything was, was the one did it and everyone else continued having something else, they didn’t. Which makes me think is it really practical for me, no not with a kid and all that other stuff. It has made me reassess whether I absolutely feel like urgh, when I don’t do it. So I have re-evaluated and if I don’t make it I am not going to beat myself up if I don’t get it the first year.”

Sally had several health concerns over the fall, which may have weighed on her mind. In November, she had not video taped yet and had not shared any writing for her other entries.

APPENDIX N

CRONBACH'S ALPHA (RELIABILITY OF CONSTRUCTS)

### *Reliability of Constructs*

Constructs	N of items	Cronbach's Alpha	
		Pre	Post
Self Efficacy	7	.762	.685
Core Proposition 1	2	<i>d</i>	<i>d</i>
Core Proposition 2	4	.908	.889
Core Proposition 3	4	.877	.788
Core Proposition 4	3	.933	.300
Core Proposition 5	4	.930	.889
Overall Survey	24	.894	.835

*d* indicates there were too few questions calculate Alpha

In both the pre and post survey, core proposition 1: Teachers are committed to students and their learning items 8 and 9 indicated too few cases to verify reliability using Cronbach's alpha. In both the pre and post survey, the self-efficacy items 1 - 7 may have led to a lower alpha because the questions asked the participants to address their effectiveness as a teacher. Each of the participants is highly reflective and may not view their instruction as having the impact that they would like it to have. They may perceive their practice as always needing refinement, always wanting to be better. In the post survey, core proposition 5: Teachers are member of learning communities items 21, 22, 23 and 25 may have led to the lowest alpha level because there was little variation in how the five participants responded. All five participants strongly agreed or agreed with each question addressing communities of practice, small group meetings and cognitive coaching conversations. The other construct items included: Core proposition 2: Teacher know the subjects they teach and how to teach them to students, core proposition 3: Teachers manage and monitor student learning and,

core proposition 4: Teachers think systematically about their practice and learn from experience all yielded high reliability in both pre and post survey items.

APPENDIX O

DEPENDENT SAMPLES T TEST – CONSTRUCT 1

Construct 1: Self-Efficacy

*Self-Efficacy Differences*

Question	N		Pre Survey	Post Survey	M <sub>2</sub> -M <sub>1</sub>	p	d
1. My lesson or unit goals are important to me.	4	M SD	1.00 <sup>a</sup> .000	4.00 <sup>a</sup> .000	3.00	a	a
2. My effectiveness in the classroom has the effect I would like it to have.	5	M SD	2.60 .548	3.20 .447	0.60	.070	1.19
3. I rarely feel uncertain and fearful of my teaching.	5	M SD	2.20 .447	2.80 .837	0.60	.305	0.89
4. I have control over what happens in my classroom.	5	M SD	3.40 .548	2.90 .742	-0.50	.326	-0.76
5. My instructional practice impacts my students' learning.	5	M SD	3.20 .447	3.80 .447	0.60	.070	1.34
6. I rarely overlook what happens in my classroom.	4	M SD	2.00 <sup>a</sup> .000	4.00 <sup>a</sup> .000	2.00	a	a
7. I maintain a standard level of instructional quality.	4	M SD	3.00 3.00	3.00 1.414	0.00	1.00 0	0

<sup>a</sup>The t-statistic could not be computed because the standard error of the difference was 0.

APPENDIX P

DEPENDENT SAMPLES T TEST – CONSTRUCT 2

Construct 2: Teachers are committed to students and their learning

*NBPTS Core Proposition 1*

Question		Pre Survey	Post Survey	$M_2-M_1$	p	<i>d</i>
8. When I plan an instructional sequence, I keep high, worthwhile goals in mind,	M	3.00	4.00	1.00	.034*	2.00
	SD	.707	.000			
9. I can provide evidence of what student learning looks like.	M	2.80	3.20	0.40	.374	0.48
	SD	1.09	.447			

\* statistically significant at the  $p \leq 0.05$  level.

APPENDIX Q

DEPENDENT SAMPLES T TEST – CONSTRUCT 3

Construct 3: Teachers know the subjects they teach and how to teach them to students

*NBPTS Core Proposition 2*

Question		Pre Survey	Post Survey	$M_2 - M_1$	p	<i>d</i>																										
10. My learning goals connect to the NBPTS standards.	M	2.60	3.40	0.80	.099	1.45																										
	SD	.548	.548				11. I implement a variety of instructional strategies.	M	3.00	3.60	0.60	.208	0.94	SD	.707	.548	12. The instructional materials and strategies I use align with my learning goal(s).	M	3.20	3.60	0.40	.178	0.79	SD	.447	.548	13. The instructional materials and strategies I use support student learning.	M	3.00	3.80	0.80	.099
11. I implement a variety of instructional strategies.	M	3.00	3.60	0.60	.208	0.94																										
	SD	.707	.548				12. The instructional materials and strategies I use align with my learning goal(s).	M	3.20	3.60	0.40	.178	0.79	SD	.447	.548	13. The instructional materials and strategies I use support student learning.	M	3.00	3.80	0.80	.099	1.35	SD	.707	.447						
12. The instructional materials and strategies I use align with my learning goal(s).	M	3.20	3.60	0.40	.178	0.79																										
	SD	.447	.548				13. The instructional materials and strategies I use support student learning.	M	3.00	3.80	0.80	.099	1.35	SD	.707	.447																
13. The instructional materials and strategies I use support student learning.	M	3.00	3.80	0.80	.099	1.35																										
	SD	.707	.447																													

Not statistically significant at the  $p \leq 0.05$  level.

APPENDIX R

DEPENDENT SAMPLES T TEST – CONSTRUCT 4

Construct 4: Teachers are responsible for managing and monitoring student learning

*NBPTS Core Proposition 3*

Question		Pre Survey	Post Survey	M <sub>2</sub> -M <sub>1</sub>	p	<i>d</i>
14. In light of my instructional goals, my assessments provide evidence of student learning.	M SD	2.60 .548	3.20 .447	0.60	.070	1.19
15. I evaluate student learning to determine if my instructional goals have been successful.	M SD	2.80 .837	3.40 .548	0.60	.070	0.84
16. The assessments provide me with new knowledge about my students' learning.	M SD	3.00 .707	3.80 .447	0.80	.099	1.35
17. Through my assessment(s) I can determine if my instruction was effective.	M SD	3.00 1.000	3.80 .447	0.80	.099	1.03

Not statistically significant at the  $p \leq 0.05$  level.

APPENDIX S

DEPENDENT SAMPLES T TEST – CONSTRUCT 5

Construct 5: Teachers think systematically about their practice and learn from experience

*NBPTS Core Proposition 4*

Question		Pre Survey	Post Survey	M <sub>2</sub> -M <sub>1</sub>	p	<i>d</i>
18. I make the right choices for planning and implementation of lessons.	M SD	2.60 .548	3.20 .447	0.60	.070	1.39
19. I collect evidence of my students demonstrating mastery.	M SD	2.20 .837	2.80 .447	0.60	.305	0.89
20. I am clear on which direction to go next with my students.	M SD	2.20 .837	3.00 .000	0.80	.099	1.35

Not statistically significant at the  $p \leq 0.05$  level.

APPENDIX T

DEPENDENT SAMPLES T TEST – CONSTRUCT 6

Construct 6: Teachers think systematically about their practice and learn from experience

*NBPTS Core Proposition 5*

Question		Pre Survey	Post Survey	M <sub>2</sub> -M <sub>1</sub>	p	<i>d</i>
21. I consider my National Board candidacy cohort a learning community.	M SD	3.40 .548	3.80 .447	0.40	.178	0.79
22. The small group meetings help me understand my teaching practice aligned to the NBPTS standards.	M SD	3.20 .447	3.80 .447	0.60	.070	1.11
23. The small group meetings help me articulate my teaching practice aligned to the NBPTS standards.	M SD	3.20 .447	3.80 .447	0.60	.070	1.34
25. Cognitive coaching conversations help me articulate my teaching practice.	M SD	3.25 .500	4.00 .000	0.75	.058	2.12

Not statistically significant at the  $p \leq 0.05$  level.

APPENDIX U

COGNITIVE COACHING CONVERSATION – FREQUENCY DATA

Participant	Date	Time	Entry 1	Entry 2	Entry 3	Entry 4	Logistics	Paraphrase	Questions	Refer back to NB Standards	Shift in Thinking	Core Prop 1	Core Prop 2	Core Prop 3	Core Prop 4	Core Prop 5	Increased Efficacy	Low Efficacy	Reflection
1	17-Aug	40 min	X			X	5	11	12	1	X	X	X	X	X	X	X		X
	9-Sep	34 min	X				5	13	17	1		X		X			X		X
	22-Sep	47 min	X				0	24	25	2	X	X	X	X	X			X	X
	28-Sep	15 min	X		X		0	8	10	1		X	X					X	X
	10-Oct	25 min			X		1	7	12	0	X	X	X	X			X		X
	20-Oct	33 min			X		2	10	15	0		X	X	X	X				X
	27-Oct	36 min			X		3	9	19	0		X	X		X				X
	2-Nov	31 min			X		3	9	13	5			X		X			X	X
			4	0	5	1	19	91	123	10		6	7	6	6	1	3	3	8
2	27-Aug	15 min	X			X	0	8	7	0		X				X	X		X
	15-Sep	29 min	X			X	2	17	14	3	X	X		X		X	X	X	X
	5-Nov	12 min	X				0	8	3	1		X	X	X					
			3	0	0	2	2	33	24	4		3	1	2	0	2	2	1	2
3	25-Aug	45 min		X		X	5	22	13	2	X	X	X			X	X		X
	15-Sep	35 min	X				3	7	15	2		X	X	X	X		X	X	X
	3-Nov	17 min	X				5	2	5	0		X						X	X
	8-Nov	24 min	X				0	4	7	1		X	X	X	X				X
			3	1	0	1	13	35	40	5		3	4	2	2	1	2	2	4
4	24-Aug	39 min				X	0	13	15	1		X		X	X	X	X		X
	15-Sep	35 min	X		X	X	4	17	15	2		X		X		X	X	X	X
	27-Sep	34 min	X				0	16	8	1		X	X	X	X				X
	2-Oct	17 min	X				0	2	15	0		X	X	X				X	X
	18-Oct	51 min	X				1	12	21	2		X	X					X	X
			4	0	1	2	5	60	74	6		5	3	4	2	2	2	3	5
5	24-Aug	35 min			X		7	7	19	3		X		X				X	X
	14-Sep	31 min				X	3	8	10	1		X				X	X		X
	20-Oct	52 min			X		6	25	18	1		X	X				X		X
	6-Nov	20 min		X	X		2	16	7			X	X	X			X		X
			0	1	3	1	18	56	54	5		4	2	2	0	1	3	1	4
<b>Overall Total</b>			14	2	9	7	57	275	315	30		21	17	16	10	7	12	10	23

APPENDIX V

CODED DATA FROM RESEARCHER OBSERVATIONS

Observation 1: 7/28				
Participant	Focused	Helpful	Core Prop 5	Entry 4
P1			1	1
P3			1	1
P4			1	1
P5				

Observation 2: 8/11 (Entry 4)

Round Table

Participant	Overwhelming / Low Efficacy	Getting Organized	Increased Efficacy	Helpful	Core Prop 5	Entry 4
P1	1			1	1	1
P2					1	1
P3		1			1	1
P4			1		1	1
P5					1	1

Observation 3: 8/25 (Entry 1)													
Participant	Clarity	Organize	Calmness	Increased Efficacy (excited)	Focus / Helpful	Connections	Alignment to NB	Reflective Practice	Core Prop 1	Core Prop 2	Core Prop 3	Core Prop 4	Core Prop 5
P1	1		1		1		1	1	1				1
P2					1								1
P3		1		3				1		1		1	1
P4		2	1	2	1	1	1	2			1		2
P5		1		1						1			1

Observation 4: 9/8 (Entry 1 & Entry 4) Round Table

Participant	Support (Focus, Helpful & Time)	Increased Efficacy	Low Efficacy (Overwhelmed)	Collaborating / Connection	NB Standards	Organization	Portfolio Directions	Student Impact	Assessments	Reflection	Core Prop 1	Core Prop 2	Core Prop 3	Core Prop 4	Core Prop 5
P1	1			1	1	2	1	1			1	1			1
P2	1	1		2			2	1	3	2	1		1		1
P3	1	3		2	1							1			1
P4	2	4	1	1		3				1	1				1
P5	2	2	1	1		1	1	2			1		1		1

Observation 5: 9/29 (Entry 1 & 2)																		
Participant	Support (Focus, Helpful & Time)	Increased Efficacy	Low Efficacy	NB Standards	Teaching Practice	Portfolio Directions	Student Impact	Assessments	Reflection	Collaborating	C C C's	Plan	Clarify	Core Prop 1	Core Prop 2	Core Prop 3	Core Prop 4	Core Prop 5
P 1	1	1							1	1	1			1	2		1	1
P 2	1	1	1	1	1	3	2	6		1		2	3	1	2	2		1
P 3	1	2		1					2	2						1	1	1
P 4		1	1		1	2				1		1	1	1	1	2		1
P 5	1					1				1			1					1

Observation 6: 10/06 Entry 1-3)

Participant	Support (Focus, Helpful & Time)	Increased Efficacy	Low Efficacy	NB Standards	Teaching Practice	Portfolio Directions	Student Impact	Assessments	Reflection	Collaborating	Clarify	Core Prop 1	Core Prop 2	Core Prop 3	Core Prop 4	Core Prop 5
P 1				1		4	1	1	1	2	4	1	1	1		1
P 2																
P 3	1		1					1	1					1		1
P 4			4	3		5				3		3	1	1		1
P 5																

Observation 7: 10/20 (Entry 2 & 3)																
Participant	Support (Focus, Helpful & Time)	Increased Efficacy	Low Efficacy	NB Standards	Teaching Practice	Portfolio Directions	Student Impact	Assessments	Reflection	Entry Planning	Clarify	Core Prop 1	Core Prop 2	Core Prop 3	Core Prop 4	Core Prop 5
P 1			2			1			1			1	2			1
P 2	1					1				1			1			1
P 3		1		1	1		1			1		1	1	1		1
P 4	1	5	3	3	2	3	1	6	1	1	1	1	3	2		1
P 5		1	1						1	1	1					1

Observation 8: 11/3 Entry 2 & 3)

Participant	Support (Focus, Helpful & Time)	Increased Efficacy	Low Efficacy	Collaboration w/ Colleagues	NB Standards	Teaching Practice	Portfolio Directions	Student Impact	Assessments	Reflection	Science Integration	NB as a Process	Entry Planning	Clarify	Core Prop 1	Core Prop 2	Core Prop 3	Core Prop 4	Core Prop 5
P 1				1	2	7	2	2		1	1		2	2	1	2	1		1
P 2			1			2	1					1	2		1		1		1
P 3	1																		1
P 4		2	2	1	2	2	1	1	2	1			1		1	1	1		1
P 5																			1

APPENDIX W  
PREDICTIONS

Teacher	Point in Time	Prediction	Rationale
1 = Achieve certification      0 = Not achieve certification			
1	July	1	Having worked with this teacher over the past 2 years, through classroom observations and conversations, I know her to be very thoughtful and purposeful in her instruction, always asking what else can I do? She participated in the Pre-Candidacy course offered in our school district. This teacher attended the NB Summer Institute offered through the AZK12 Center.
2	July	1	Having worked with this teacher the past year, through classroom observations and conversations, I know her to thorough and student focused. She participated in the Pre-Candidacy course offered in our school district. This teacher attended the NB Summer Institute offered through the AZK12 Center.
3	July	1	Having worked with this teacher over the past 2 years, through classroom observations and conversations, I know her to be very motivated and student centered. She is a strong advocate for students and life long fitness. She participated in the Pre-Candidacy course offered in our school district.
4	July	1	Having worked with this teacher over the past 2 years, through classroom observations and conversations, I know her to be very motivated and strong advocate for students in her class. She participated in the Pre-Candidacy course offered in our school district.
5	July	1	Having worked with this teacher over the past 2 years, through classroom observations and conversations, I know her to be very determined and an advocate for student learning. She participated in the Pre-Candidacy course offered in our school district. This teacher attended the NB Summer Institute offered through the AZK12 Center.

Teacher	Point in Time	Prediction	Rationale
			1 = Achieve certification      0 = Not achieve certification
6	July	1	Having worked with this teacher only during the spring Pre- Candidacy course, I knew her to be a strong advocate for students and of quality education. This teacher attended the NB Summer Institute offered through the AZK12 Center.
7	July	1	Having worked with this teacher only during the spring Pre- Candidacy course, I knew her to be a kindergarten teacher. She was very quiet, but contributed to and participated in conversations. This teacher attended the NB Summer Institute offered through the AZK12 Center.
8	July	1	Having worked with this teacher only during the spring Pre- Candidacy course, I knew her to be a kindergarten teacher. She was very quiet and withdrawn during the Pre-Candidacy class. This teacher attended the NB Summer Institute offered through the AZK12 Center.
9	July	1	Having worked with this teacher only during the spring Pre- Candidacy course, I knew her to be a 7-8th grade English teacher. She was a strong advocate for her students and contributed to conversations.
10	July	1	I met this teacher at the AZK12 Center's NB Summer Institute and knew she was a special education teacher. She attended a Fall 2009 Pre-Candidacy course through the AZK12 Center.
11	July	1	I met this teacher in the Spring of 2010 when she completed a Pre Candidacy course through the AZK12 Center.

Teacher	Point in Time	Prediction	Rationale
1 = Achieve certification      0 = Not achieve certification			
1	Nov	1	This teacher was very purposeful in her instruction. We met nearly each week for cognitive coaching conversations. At the end of each meeting, she would schedule our next time. She had begun to videotape science and math lessons and analyze her student writing samples. I predict she will complete the process and achieve certification.
2	Nov	0	This teacher seemed somewhat disorganized and overwhelmed at times. We only met three times for cognitive coaching conversations. Various reasons included: scheduling conflicts, not prepared, too busy. At this point she had not started videotaping. I am concerned she will not complete the process nor achieve certification.
3	Nov	1	This teacher continued to motivate and inspire other teachers around her and within our group. We met four times during the semester for cognitive coaching conversations. In November, this teacher had several videotaped lessons she was analyzing and could use for her portfolio entries. I predict she will complete the process and achieve certification.
4	Nov	0	This teacher continues to bring positive energy to our small group meetings. She articulates her practice and advocates for her students. She has only videotaped a few times and has been very ill. We have met five times for cognitive coaching conversations. I am concerned she may not complete the process nor achieve certification.
5	Nov	0	This teacher seemed distracted and had a difficult time narrowing her focus for instructional planning. We met four times during the intervention and she was more and more focused each meeting. As it is still the midway point of the certification process, I am hopefully she will complete the process, but I predict will not achieve certification.

Teacher	Point in Time	Prediction	Rationale
1 = Achieve certification      0 = Not achieve certification			
6	Nov	1	This teacher has struggled with administrative support at her school and has asked to be reassigned. She still remains hopeful that she can complete the process. Since she is at a different school we have only had one cognitive coaching conversation. At this time I am hopeful she will complete the process and achieve certification. She advocates for her students.
7	Nov	0	This teacher is very shy and often withdrawn. She generally comes to our small group meetings and sits by herself, only engaging when she absolutely has to. We have had two cognitive coaching conversations and I have gone to her school to video several lessons. However, I am concerned with her achieving certification. She has struggled with the language of the NB standards and portfolio directions.
8	Nov	0	This teacher did not attend the first four small group meetings and was thinking about withdrawing from the process. She rejoined our small group meetings in mid September. I am very concerned she will not complete the process nor achieve certification. At our small group meetings she does not initiate conversation or engage in discussions, she waits to talk one-to-one with me.
9	Nov	0	This teacher stopped coming to the small group meetings and has not returned phone calls or emails. I am concerned she will not complete the process. It is not confirmed, but she has probably withdrawn.
10	Nov	1	This teacher joins our small group meetings from another district is well planned and comes prepared to discuss entries and her teaching. She is motivated and sets goals after each meeting. We have met for one cognitive coaching conversation. I predict she will complete the process and achieve certification.
11	Nov	0	This teacher joins our small group meetings from another district and generally makes one meeting each month. She seems scattered at times, but seeks out advice and resources. I predict she will complete the certification process, but not achieve. She seems very surface level when articulating her practice.

Teacher	Point in Time	Prediction	Rationale
1 = Achieve certification      0 = Not achieve certification			
1	March	1	This teacher currently has both videotapes for her portfolio entries. She has chosen her students and samples for the student work sample entry. She has begun writing on entry 1-3 and has asked me to provide feedback. She is concerned about entry 4. I do not know if she has started writing for that entry. I predict she will complete the process and achieve certification.
2	March	1	This teacher has been very purposeful in her planning and instruction over the past several months. She has videotapes for both video entries. She has student work samples collected for entry 1. She continues to refine and build on accomplishments for entry 4. I predict she will complete the process and achieve certification. However, I am concerned that she has not shared any of her entry writing. I hope she does not wait to long to write.
3	March	1	This teacher continues to discuss her practice and seeks out support. She has her videotapes complete for the video entries. She had invited me to read her entry 4 accomplishments. She has also begun writing on her other three entries. I predict she will complete the process and achieve certification.
4	March	1	This teacher continues to keep a positive attitude and despite family illness and missing school, she has both videotapes complete for her video entries. She seeks out advice and support and keeps me updated on her progress. She has completed writing on entry 4 and continues to write for each of the other entries. She recently made a comment that it is okay if she does not achieve that this process has already changed the teacher she is. She is okay if certification is a process. I predict she will complete the process and achieve certification.

Teacher	Point in Time	Prediction	Rationale
1 = Achieve certification      0 = Not achieve certification			
5	March	0	This teacher has both her videotapes complete for her video entries, however I have not seen any writing for those entries. I am concerned that she may have waited to long to get into her writing. She seems to have lost her focus the last few weeks. I predict she will complete the process & not achieve certification.
6	March		This teacher has withdrawn from the NB certification process.
7	March	0	This teacher continues to struggle with the language of the NB standards. She has continued to videotape and has one video for her portfolio entries. I have not seen any of her entry writing. She continues to be very shy and reserved when she comes to the small group support meetings. I predict she will complete the process and not achieve certification.
8	March		This teacher has withdrawn from the NB certification process.
9	March		This teacher has withdrawn from the NB certification process.
10	March	1	This teacher continues to join our small group meetings from another district. She has completed her videotapes for the video entries and has asked me to read two of her portfolio entries and provide feedback. I predict she will complete the process and achieve certification.
11	March	1	This teacher continues to join our small group meetings from another district. She seems more focused and is finding her “voice”. She is beginning to articulate her practice as it aligns to the NB standards. She has written on each entry. I have not provided feedback. I predict she will complete the certification process, and achieve.

APPENDIX X  
OVERALL STUDY - OUTLINE

Overall Study - Outline				
July				
Small Group Support Meeting 1 – Entry 4				
Pre Survey				
August				
Small Group Support Meeting 2 – Entry 4 (Round Table Discussions)				
Pre Interviews				
Small Group Support Meeting 3 – Entry 1				
Cognitive Coaching Conversations				
P 1	P 2	P 3	P 4	P 5
August 17	August 27	August 25	August 24	August 24
September				
Small Group Support Meeting 4 – Entry 1 (Round Table Discussions)				
Small Group Support Meeting 5 – Entry 1 & 2				
Cognitive Coaching Conversations				
P 1	P 2	P 3	P 4	P 5
Sept 9, 22, 28	Sept 15	Sept 15	Sept 15, 27	Sept 14
October				
Small Group Support Meeting 6 – Entry 2 & 3 (Round Table Discussions)				
Small Group Support Meeting 7 – Entry 2 & 3				
Cognitive Coaching Conversations				
P 1	P 2	P 3	P 4	P 5
Oct 10, 20, 27			Oct 2, 18	Oct 20
November				
Small Group Support Meeting 8 – Entry 2 & 3 (Round Table Discussions)				
Small Group Support Meeting 9 – cancelled (illness)				
Cognitive Coaching Conversations				
Participant 1	Participant 2	Participant 3	Participant 4	Participant 5
Nov 2	Nov 5	Nov 3, 8		Nov 6
Post Interviews				
Post Surveys				

APPENDIX Y  
INSTITUTIONAL REVIEW BOARD APPROVAL



Office of Research Integrity and Assurance

To: Audrey Beardsley  
FAB

From: Mark Roosa, Chair  
Soc Beh IRB

Date: 07/30/2010

Committee Action: Expedited Approval

Approval Date: 07/30/2010

Review Type: Expedited F7

IRB Protocol #: 1007005334

Study Title: Supporting National Board Candidates via Cognitive Coaching Conversations and Community of Practice

Expiration Date: 07/29/2011

The above-referenced protocol was approved following expedited review by the Institutional Review Board.

It is the Principal Investigator's responsibility to obtain review and continued approval before the expiration date. You may not continue any research activity beyond the expiration date without approval by the Institutional Review Board.

**Adverse Reactions:** If any untoward incidents or severe reactions should develop as a result of this study, you are required to notify the Soc Beh IRB immediately. If necessary a member of the IRB will be assigned to look into the matter. If the problem is serious, approval may be withdrawn pending IRB review.

**Amendments:** If you wish to change any aspect of this study, such as the procedures, the consent forms, or the investigators, please communicate your requested changes to the Soc Beh IRB. The new procedure is not to be initiated until the IRB approval has been given.

Please retain a copy of this letter with your approved protocol.

