THE MEANING OF REFLECTIVE TEACHING TO

NATIONAL BOARD CERTIFIED TEACHERS

by

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DEDICATION

I dedicate this dissertation to my son, Cole. Thank you for your unconditional love. Being your mom will always be my greatest accomplishment.

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ABSTRACT

This qualitative study examined how National Board certified teachers (NBCTs) perceive the meaning of reflective teaching and how their perceptions compare to the literature on reflective thinking and teaching. The study included five participants who had completed the National Board certification process. Data collection included three interviews, a classroom observation, and a critical-incident writing sample. Data analysis included a recursive process of analyzing and comparing data from the interview transcripts, observation notes, and critical-incident writing samples as well as a continuous process of comparing data to extant literature on reflective thinking and teaching.

The study findings identify how the NBCTs define reflective teaching, incorporate reflective activities in their instructional practices, utilize various tools to record and develop reflection, perceive the characteristics and benefits of reflective teaching, engage in levels of reflection, and perceive their experiences in the National Board certification process in relation to their current reflective practices. The study findings also explain how the NBCTs' perceptions and evidence of reflective teaching compares to the literature on reflective thinking and teaching.

The following conclusions were based on the interpretations of the data presented in this study.

1. The NBCTs perceived the National Board certification process as helping them improve their reflective practices.

2. After completion of the certification process, the NBCTs continued to display attributes of the NBPTS five core propositions in their reflective practices.

3. The NBCTs demonstrated that reflective thinking leads to professional growth.

4. The NBCTs engaged in self-reflection on instructional practices before considering reflection with colleagues.

5. A focus on student-centered reflection led NBCTs to engage in higher levels of reflective thinking.

6. Reflection at higher levels requires instruction and practice.

7. The NBCTs demonstrated Dewey's theory of reflective thinking.

8. The NBCTs engaged in Schön's reflection in-action and reflection on-action.

9. The NBCTs perceived the primary benefit of reflection is the improvement of student learning.

10. The tools that the NBCTs use for recording and developing reflective thinking were influenced by time constraints and practicality.

This study presents recommendations for changes to the National Board certification process and for school leaders seeking to increase teachers' reflective thinking and teaching.

1. INTRODUCTION

Since its inception in 1987, the National Board for Professional Teaching Standards (NBPTS) has certified over 112,000 teachers (NBPTS, 2017). The number of National Board certified teachers (NBCTs) increased by more than 75 percent in a period of five years between 2005 and 2010, and in 2016, more than 20,000 teachers were pursuing National Board certification (NBPTS, 2011, 2016). NBPTS was created to identify and recognize "accomplished teaching" and increase the quality of teaching and learning (NBPTS, 2013). Ingvarson & Hattie (2008) refer to NBPTS as the "most ambitious attempt by any country to establish a certification system for teachers who reach high professional standards" (p.1). Expenditures on National Board certification are estimated at over $600 million in grants and fees and over $1 billion in salary incentives across the 50 states (Anagnostopoulos, Sykes, McCrory, Cannata, & Frank, 2010).

In 2010, NBPTS announced its involvement in the Measures of Effective Teaching (MET), a national effort funded by the Bill & Melinda Gates Foundation to aid educators and policymakers in identifying and supporting good teaching (NBPTS, 2010). NBPTS received a 1.2-million-dollar grant to utilize its standards and certification process to evaluate classroom instruction videos. NBPTS's contribution, called Take One!, is one of six types of data being collected by researchers in the MET project to identify and support effective teaching.

According to NBPTS, Take One! helped improve teaching quality by providing educators with opportunities to reflect on instructional practices. Take One! introduced teachers to National Board core proposition standards and allowed them to sample the certification process. Participants were able to choose a National Board certification area,

prepare and submit a video portfolio entry, and then transfer their portfolio score if they decided to pursue National Board candidacy.

NBPTS purports to identify what teachers should know and be able to do. According to NBPTS (2002),

> Accomplished teaching involves making difficult and principled choices, exercising careful judgment and honoring the complex nature of the educational mission. Teachers employ technical knowledge and skill, yet must be ever mindful of teaching's ethical dimensions. The primary mission is to foster the development of skills, dispositions, and understanding, while responding thoughtfully to a wide range of human needs and conditions (p. 21).

In addition, the standards state, "Teachers also have the responsibility to question settled structures, practices, and definitions of knowledge; to invent and test new approaches; and, where necessary, to pursue change of organizational arrangements that support instruction" (p. 21).

One of the five core propositions of the NBPTS focuses on reflection. Proposition number 4 calls for teachers to "think systematically about their process and learn from their experience" (NBPTS, 2014). In addition, the entire certification process requires candidates to reflect on their teaching practices, curriculum decisions, assessment methods, and student learning outcomes (Park & Oliver, 2007; Williams, 2011). A study by Goldhaber and Anthony (2004) found that participation in the certification process increased the potential for enhanced teacher reflection. Park and Oliver (2007) state the portfolio requirements of the certification process promote both reflection and self evaluation of instructional goals and objectives. In a study by Unrath (2007), participants

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reported the certification process encouraged better decision making in their teaching

practices. The literature supports the idea that reflective thinking is a critical component

of the National Board certification process (Williams, 2011). In a study by Hunzicker

(2010), teachers reported an increase in reflection and analysis of teaching practice

through completion of the NBPTS certification process. NBPTS (1999) claims that

"getting teachers engaged in a self-reflective teaching practice will improve the quality of

teaching and improve student learning" (p.7).

Statement of the Problem

The literature suggests that reflective practice may enable teachers to have a

deeper understanding of their instructional practices and improve their teaching

effectiveness (Ghere, & Montie, 2006, Kottkamp & Osterman, 2004; York-Barr,

Sommers). Reflective practice can lead to professional growth and improvement by

allowing the teacher to better understand his or her self (Kottkamp & Osterman, 1993).

Without reflection, teachers become "automatons following a dubious set of rules or

principles" (Cranton & King, 2003, p. 32). The greater the reflective practice, the more

likely the teacher will make better decisions about instructional methods, techniques, and

evaluations necessary for student success (Brookfield, 2002). Van Manen (1977) wrote

that many teachers do not engage in reflective thinking when they prepare lessons,

modify instructional resources, grade, and teach. Teachers who focus only on themselves

as teachers minimize their potential to have a positive impact on students, peers, and

society as a whole (Gore, 1987 & Grossman, 1992).

According to Gelter (2003), "despite its power to improve learning and practice,

reflection does not seem to be a spontaneous activity in [the teaching] profession or

everyday life as [educators] need to actively dedicate time and effort to make reflections" (p. 337). Reflective thinking and teaching is a learned behavior and requires time and practice to develop and improve. For most teachers, however, reflective teaching is not an everyday professional behavior; they only think reflectively when something has gone wrong or they fear failure (Gelter, 2008; Ghaye & Lillyman, 2000). A study by Choy and Oo (2012) found that most teachers did not perceive a need to reflect. These teachers were "generally more concerned about their own performance in their discipline rather than enhancing their teaching by reflecting on their practices" (p. 175).

One purpose of the National Board certification process is to empower teachers to practice reflective thinking and teaching. Moseley & Raines (2002) state "National Board Certification isn't only about show-casing what you do well, it's also about facing what you don't do well, creating a self-improvement plan and recognizing that you, the teacher are a learner, too" (p. 47). However, Gaddis (2002) found that National Board certification (NBC) participants did not engage in critical reflection; they did not examine their underlying assumptions, values, and beliefs; they did not compare their beliefs to NBPTS; and they did not demonstrate an awareness of how they made decisions. According to Gaddis, the reason why NBC participants may not engage in critical reflection is because this level of reflection is not required in the standards, or because teachers may not have time to engage in critical reflection because of the other commitments to complete the portfolio process.

Reflective thinking improves instruction, yet reflective teaching is not an intrinsic process. Rather, reflection, especially at the highest level, must be developed (Dewey, 1933). Even highly experienced teachers are usually novices at reflective practice. Initial

attempts at reflective thinking are general descriptions of classroom practice (McCorkel, Ariav & Ariav, 1998; Stanley, 1998). Van Manen contends that most teachers who engage in reflective thinking usually "stay in a place of reflecting only on technical issues of teaching if they are not pushed to think more deeply" (Genor, 2005, p. 49).

After going through the National Board certification process, how do National Board certified teachers (NBCTs) perceive the meaning of reflective thinking and teaching and how does their perceived meaning compare to literature on reflective thinking and teaching? "Most teachers who have experienced National Board candidacy describe it as the best professional development they have ever experienced—even when they do not achieve the certification" (Hunzicker, 2010, p. 192). "A common claim made by teachers who have participated in the National Board certification hovers around the idea of becoming a more reflective practitioner" (Lustick, 2005, p. 18).

Previous studies on NBPTS provide evidence that reflective thinking is an essential requirement in the National Board certification process (Bohen, 2001; Chittenden & Jones, 1997; Feldman, 2004; Gaddis, 2002; Lustick, 2002; Mosley & Rains, 2002; Park & Oliver, 2007; Sato, 2000; Unrath, 2007). Some studies on NBPTS assert that the National Board certification process and its emphasis on reflective thinking "stimulate a dynamic change in the future practices of National Board Certified teachers" (Lake, 2006, p. 5). However, little research exists regarding the *levels* of reflective thinking that NBCTs practice after completing the certification process. The National Board certification process fosters reflective thinking through the portfolio process, yet little research exists on the activities or tools for reflective thinking used by NBCTs after the certification process.

Conceptual Framework

The theory associated with teacher reflective thinking and practice provided the conceptual framework for this study. The conceptual framework presented here explores the meaning of reflective thinking and teaching on multiple levels. Figure 1 provides a graphic display of the conceptual framework.
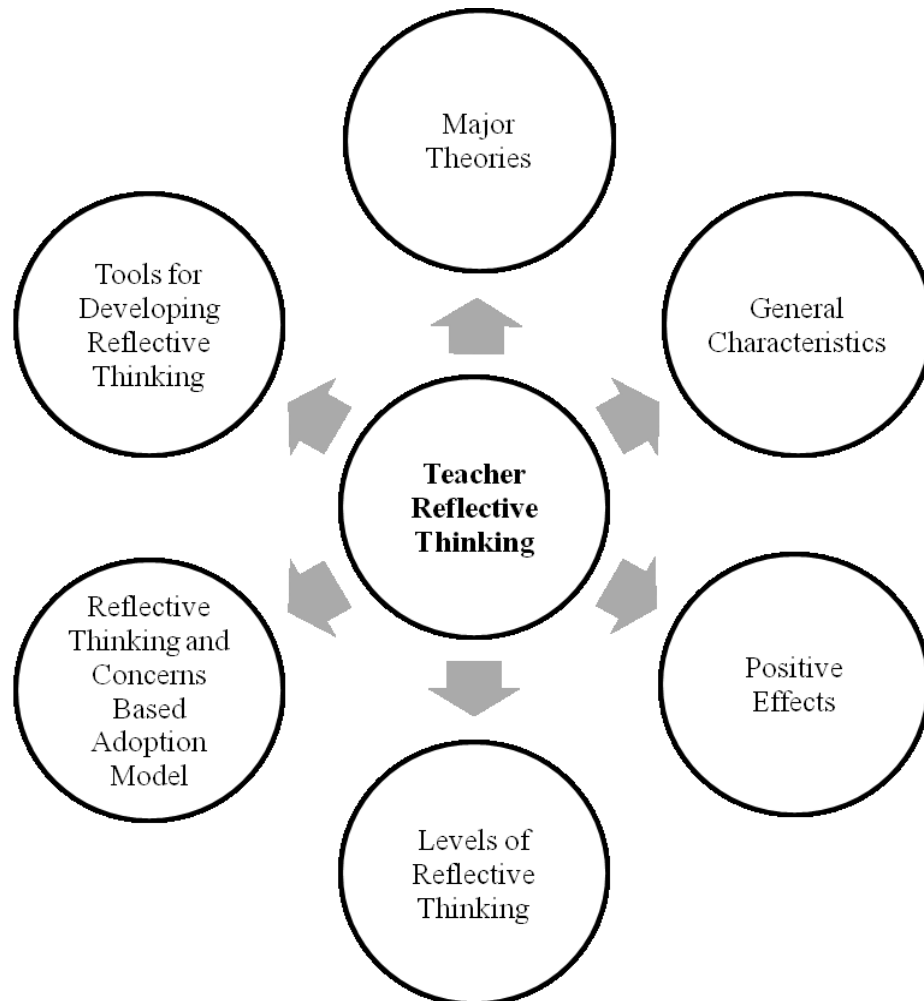
Figure 1. Conceptual Framework

Major Theories

John Dewey provided a theoretical foundation for reflective thinking by identifying the process and necessary attitudes for reflective thinking. He claimed that in order for teachers to become effective practitioners, they had to be critical of their practice (1993). For Dewey, reflective thinking is rigorous, disciplined, inquiry-based and centered on a problem or experience (Palmer, 2011; Rodgers, 2002). He believed reflective thinking starts with an awareness of a problem or an uncertainty of a situation and ends with a judgment about the problem or situation; decisions or beliefs based exclusively on an authority or on emotion are in direct opposition to reflective thinking (Kitchener & King, 1994). According to Dewey (1933), reflective thinking includes two characteristics: perplexity and inquiry. Dewey asserted that reflective thinking is the "willingness to sustain and protract that state of doubt which is the stimulus to thorough inquiry, so as not to accept an idea or make a positive assertion of a belief until justifying reasons have been found" (Dewey, 1933, p. 16). In addition, Dewey believed that reflective thinking required a set of attitudes, including: open-mindedness, whole-heartedness, and responsibility. Today, Dewey's theoretical foundation for reflective thinking remains the most frequently cited definition in the literature on reflective thinking in education.

Jürgen Habermas (1971) believes that reflective thinking generates three types of knowledge: technical, practical, and emancipatory. Technical knowledge is generated when a teacher's interest and reflective thinking is focused on discovering efficient and effective means to an end. Practical knowledge is generated when a teacher's interest and reflective thinking is focused on interpersonal relationships and communication. A teacher reflects to identify and clarify assumptions and biases in order to seek mutual

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understandings and shared meanings. Emancipatory knowledge is generated when a teacher's interest and reflective thinking focuses on understanding power structures and self-knowledge.

Donald Schön (1983) studied the practice of reflective thinking among professionals, including teachers, and defined it as an approach professionals engage in to deal with unique, uncertain, and conflicted situations of practice. Schön asserted that reflective thinking leads to professional artistry, which he describes as the kind of professional competence that practitioners demonstrate during unique and conflicting situations in practice. Schön asserted that during challenging experiences, practitioners engage in two types of reflective thinking: reflection-in-action and reflection-on-action. Reflection-in-action occurs when teachers reflect on thoughts and actions as they transpire for the purpose of making changes in the moment. Reflection-on-action occurs after the challenging situation transpires and the focus of reflection is on evaluating the circumstances and determining a solution to guide future actions.

General Characteristics of Reflective Teaching

Reflective teaching is viewed as the foundation for the highest professional competence (Larrivee & Cooper, 2006, Osterman & Kottkamp, 2004, Valli, 1997, York-Barr, Sommers, Ghere & Montie, 2001; Zeichner & Liston, 1996). Reflective teachers practice an inquiry approach that fosters a commitment to continuous learning and improvement. Reflective teaching involves regularly analyzing, evaluating, and strengthening the quality and effectiveness of the teacher's instructional decisions. "Reflective practice is a deliberate pause to assume an open perspective, to allow for higher-order thinking processes. Practitioners use these processes for examining beliefs,

goals, and practices, to gain new or deeper understanding that lead to actions that improve learning for students" (York-Barr, Sommers, Ghere, & Montie, 2001, p. 6).

The literature identifies common characteristics of reflective teaching (Dewey, 1933; King & Kitchener, 1994; Osterman & Kottkamp, 2004; Rodgers, 2002; Taggart & Wilson, 2005; Valli, 1997; Van Manen, 1977; York-Barr, et al., 2006; Zeichner & Liston, 1987), which include:

- Engaging is continuous self-questioning, learning, and discovery

- Seeking multiple perspectives and alternative explanations and solutions

- Assuming responsibility for own learning

- Planning, monitoring, evaluating, and modifying actions consciously and carefully

- Welcoming experimentation

- Valuing lifelong learning

- Evaluating underlying assumptions and biases

- Identifying and analyzing both problems and solutions from an educational, social, and ethical perspective

- Considering context and pedagogical factors when determining actions and goals

- Utilizing an ongoing problem-solving inquiry approach

- Focusing on student needs, learning, and development

- Possessing attitudes of open-mindedness, whole-heartedness, and responsibility

Positive Effects of Reflective Teaching

Reflective practice enables teachers to become more effective and skilled practitioners (Henderson, 1992; Onosko, 1992). Effective teaching requires more than subject matter knowledge; it also requires reflection (Bright, 1996; Larrivee, 2000; Osterman & Kottkamp, 2004). According to Osterman (2009), reflective practice leads to greater self-awareness, development of new knowledge, and a broader understanding of problems. Reflection allows teachers to be more self-directed, taking responsibility for their own professional growth (Zeichner & Liston, 1987). Reflective thinking encourages discovery and prevents teachers' instructional practices from becoming stagnant and routine. It allows teachers to increase their repertoire of instructional strategies, confront and respond to problems they experience in their profession, and challenge existing practices. Reflective practice enables teachers to achieve higher student learning outcomes (Danielson, 2008; Fendler, 2003; Glickman, 2002; Hourani, 2013).

Because teaching is a challenging endeavor requiring teachers to face many challenges in the classroom as well as moral and political dimensions of the profession, reflective practice is imperative to effective teaching. Reflection helps teachers avoid feeling trapped by the complex multiple demands of their profession. It also helps teachers prevent blindly implementing new educational fads without evaluating the impact on student learning and instructional practices (Osterman, 2004).

Researchers believe that reflective thinking leads to professional growth; Allen and Casbergue (1997) argue that "professional growth is unlikely without systematic reflection" (p. 741). In addition, Osterman (2010) asserts that habits of reflective and

critical thinking (as a means of questioning and scrutinizing current ways of doing things to find new and better ways) are "closely linked to organizational effectiveness" (p. 140).

Levels of Reflective Thinking

Many researchers support the concept that reflective thinking involves cognitive stages or levels (King & Kitchener, 2002; Louden, 1992; Minott, 2008; Valli, 1997; Van Manen, 1997; Zeichner & Liston, 1991). In addition, they believe that levels of reflective thinking are organized from less to more complex, and the process of reflection moves along a continuum from routine to critical thinking. Valli (1997) asserts that lower levels of reflective thinking are prerequisites to higher levels and that the hierarchical ordering also suggests that one level is more important than another. She states, "Reflecting on how to make schools more just and democratic, for example, might be more important than trying to maximize time on a task . . . critical reflection is ultimately more important than technical reflection" (p. 82).

According to Van Manen (1977), reflective thinking occurs and progresses in three levels: technical rationality, practical action, and critical reflection. Van Manen, like Valli, believes that each level of reflective thinking is sequential, and the teacher must fulfill the needs of one level before advancing to the next level.

At Van Manen's first level of reflective thinking, technical rationality, the teacher is primarily concerned with the "means rather than ends" (Van Manen, 1977, p.226). The teacher's reflective thinking is focused on effective and efficient application of pedagogical knowledge and "the technical application of educational knowledge and basic curriculum principles" (Ballard, 2006, p.20). At this level, the teacher reflects on

the best way to achieve a predetermined goal and does not question the worth or value of the goal. The teacher reflecting at this level may ask, "Are my students on task?"

Practical action, Van Manen's second level of reflective thinking, occurs when the teacher seeks to identify and clarify underlying assumptions and predispositions competing with pedagogical goals. Van Manen (1977) believes that "in the face of an abundance of theories, principles, and views the need for a higher level of deliberative rationality becomes apparent" (p.226). At this level, the teacher examines the relationship between theory and practice. The teacher is concerned with determining the worth of competing educational goals and experiences and not just the practices and skills necessary to attain them (Taggart & Wilson, 2005). The teacher reflecting at this level may ask, "What are my beliefs about my goals?"

At the third level, critical reflection, the teacher examines "moral and ethical issues of social compassion and justice" as they relate to pedagogical goals (Van Manen, 1977, p. 24). During critical reflection, the teacher considers the value of the knowledge and the social context (Ballard, 2006). Sparks-Langer and Colton (1991) describe this level of reflective thinking as the time when teachers "begin to clarify their own beliefs about the purposes of education to critically examine teaching methods and materials to look for hidden lessons about equity and power that might lie therein" (p. 40). The teacher reflecting at this level may ask, "Why is the content of the lesson important to my students?"

Reflective Thinking and the Concerns-Based Adoption Model

The concerns-based adoption model (CBAM) provides a conceptual framework for understanding the various thoughts and behaviors that individuals experience during a

change process (Hall & Hord, 2005). CBAM explains how, during the change process, individuals reflect and advance through gradual levels of acceptance and implementation. The framework includes three dimensions for the process of change: stages of concern (SoC), levels of use (LoU), and innovation configurations. Similar to Van Manen's levels of reflective thinking, the stages of concern dimension and the levels of use dimension contain levels that are sequential, beginning with minimal reflection and progressing to deeper reflection.

The first dimension, SoC, includes seven levels to identify how the teacher perceives a change process (Hall & Hord, 2005). At the beginning level, the teacher feels little or no concern in the change process. At the highest level, the teacher reflects on the change in order to understand the universal benefits and adapt it to meet the needs of students.

The next dimension, LoU, includes eight levels to identify individual behaviors during the adoption of change (Hollingshead, 2009). Like the levels for SoC, LoU levels of behavior are progressive, beginning with the lowest level, in which the teacher has no knowledge or interest and no involvement in the change, to the highest level, in which the teacher reflects and seeks alternatives to maximize the impact on students. Although levels of reflection and levels of concerns/use are not the same thing, they clearly are parallel to each other in the process of teacher growth and development.

Tools for Developing Reflective Thinking

The literature suggests that the process of reflection can be developed through the use of tools that promote reflective thinking. Various types of vehicles are identified as useful in promoting reflective thinking, including: journal writing, narrative writing,

autobiographical writing, critical-incident writing, portfolios, action research, and collaboration (Dewey, 1933; Hatton & Smith, 1995; Heimstra, 2001; Minott, 2008; Osterman, 1990; Sagor, 2000; Schön, 1983). Because reflective thinking does not occur intrinsically for many teachers, the process of reflection and utilizing tools for reflective thinking must be developed (Dewey, 1933). For example, reflective writing (e.g., journal, narrative, autobiographical, critical incident, portfolio) can be an effective vehicle for critical reflection; however, unless critical reflection writing is taught, most types of reflective writing are descriptive rather than reflective (Spalding & Wilson, 2002). Action research, study circles, peer observations, and team teaching can not only foster reflective thinking, but also improve school effectiveness (Costa & Kallick, 2000; Gilles, Wilson, & Elias, 2010; Little, 2002).

How the Concept of Reflective Thinking Guided the Study

The concept of reflective thinking guided this study in the review of the literature, research design, and discussion of findings. The review of literature included a detailed discussion of the theory and research on reflective thinking and how it relates to NBPTS and the National Board certification process. Theory and research on reflective thinking guided the development of the study's research questions and informed data collection and data analysis, as well as interpretations, conclusions and recommendations. The study sought to identify how National Board certified teachers who participated in the study perceive the meaning of reflective thinking and teaching and compare their perceptions to the conceptual framework on teacher reflective thinking derived from the literature.

Purpose of the Study

The purpose of the study was to determine the participating NBCT's perceptions of reflective thinking and teaching and compare those perceptions to the literature on reflective thinking and teaching. This study sought to identify: the meaning of reflective thinking and teaching to participating NBCT's, the different types of reflective activities used by NBCTs before and after achieving certification, the various means NBCTs use to record their reflections, their levels of reflection, and their perceptions of the benefits of reflective teaching.

Research Questions

1. What is the meaning of reflective teaching to National Board certified teachers who participate in this study?

2. How does the meaning of reflective teaching to National Board certified teachers who participate in this study compare to the literature on reflective thinking and teaching?

Overview of the Research Process

Using constructionist epistemology assisted the researcher in acknowledging that meaning is constructed by the participants and as well as the researcher. Constructionist epistemology allowed the participants and researcher to construct their own meaning of reflective thinking and teaching based on experiences in given situations (Crotty, 1998; Levy, 2006; Schwandt, 2000). The researcher utilized an interpretivist theoretical perspective in which the participants constructed meaning of reflective teaching based on their lived experiences (Crotty, 1998; Denzin & Lincoln, 2003; Guba & Lincoln, 1994, 1994). Specifically, the researcher sought to understand how the experiences of the

National Board certification process helped shape the participants' perceived meaning of reflective thinking and teaching.

Grounded theory methodology allowed the researcher to construct theory from data rather than test predetermined theories (Charmaz, 1994; Glaser, 1998; Glaser & Strauss, 1967; Stern, 1994; Strauss & Corbin, 1998). The researcher utilized the interview as the primary method of gathering data. Qualitative interviews allowed the researcher to elicit the meaning of reflective thinking and teaching as perceived by the NBCTs participating in the study. The interview method is consistent with grounded theory in that it enables the researcher to identify themes revealed in the interviews, study the data to discover new themes, and conduct follow-up interviews to answer questions and fill-in gaps.

This study included five participants who (a) had completed the National Board certification process, (b) had a minimum of three years of teaching experience, and (c) were currently teaching in a K-12 school. The participants were identified by utilizing the National Board website listing certified teachers by certification subject and developmental area, year certification was achieved, and the school district employer.

Data collection included three interviews of each participant, a classroom observation, and a critical-incident writing sample. The first interview focused on collecting perceptual data relative to the primary research questions. Next, a classroom observation provided data on the participants' classroom behaviors (e.g., instructional practices and interactions with students). The information gathered from the observation helped guide the development of the second interview questions related to the participants' perceptions on their use of reflective thinking and teaching.

Data collected from the critical-incident writing included two parts: (A) description of the critical incident and (B) how the participants perceived using reflective thinking to address the incident. Participants were asked to complete Part A (description) of the critical-incident writing at the beginning of the study to be collected at the first interview. Data collected from the Part A also guided questions and topics in the second interview. Part A of the critical-incident writing was returned to the participants along with Part B (analysis), which was completed prior to the third and final interview. Part B of the critical-incident writing guided questions for the third interview.

This study utilized Charmaz's (2006) grounded theory coding which consists of open coding and focused coding of data. The first step of data analysis focused on open coding, which began immediately after the first interview. During this phase of coding, the researcher coded data line-by-line to identify general concepts, generate categories, and identify areas for further data collection and analysis. The next step of data analysis incorporated focused coding to allow the researcher to integrate data and refine core categories. Throughout the data analysis process, the researcher utilized memo writing to create categories from basic concepts.

The researcher utilized constant comparison (Glaser & Strauss, 1967) to compare interview transcripts, observation notes, and critical-incident writing in order identify emerging themes. The researcher also used constant comparison to compare data collected from the participants to the literature on reflective thinking and teaching. Data collection and data analysis was cyclical and iterative.

Data collection and analysis continued until the data was saturated and no new concepts emerge. A comprehensive discussion of the research methods is provided in Chapter 3.

Definition of Terms

National Board certified teachers (NBCTs) – Title for teachers who have successfully completed the portfolio and writing assessments components of the National Board certification process and are considered accomplished teachers according to established standards set forth by National Board (NBPTS, 2014).

National Board for Professional Teaching Standards (NBPTS) – A nonprofit educational organization established in 1987 to advance the quality of the teaching profession through the implementation of rigorous standards and certification process (NBTPS, 2013).

National Board certification process – The process entails two parts: portfolio entries (a total of six) and assessment center timed exercises (a total of four).

Reflective thinking – The purposeful, conscious act of examining one's thoughts and actions (Dewey, 1933).

Reflective teaching – The process of questioning one's experiences and relevant knowledge for the purpose of finding meaning in one's beliefs, directing instruction with foresight, and planning according to ends-in-view (Dewey, 1933).

Assumptions

1. Reflective teaching is not innate and must be taught or learned, and the National Board certification process offers teachers a professional development experience that cultivates reflective thinking and reflective teaching practices.

2. Reflective thinking exists on a continuum and teachers function at different levels of reflective thinking and reflective teaching.

3. Participants in this study provided honest and open responses to interview questions.

4. Participants in this study exhibited their typical teaching behaviors during the observation.

Limitations

1. Potential participants were limited to National Board certified teachers whose contact information was accessible on the NBPTS website.

2. Because the participants in this study are National Board certified teachers, the participants' meaning of reflective thinking and teaching was limited to the NBPTS standards identified in the certification process. In addition, the participants' current modes of reflection were influenced by the modes of reflection required in the certification process.

3. The amount of time observing participants was limited to one classroom lesson.

Significance of the Study

The meaning of reflective thinking and teaching has been a topic of interest in education since John Dewey first presented his theoretical framework of reflection in the early 1900s. This study contributes information to the literature on reflective thinking and teaching by exploring reflective thinking and teaching through the lens of NBCTs. In combination with other literature, this study can be used to examine the claim by NBPTS that the certification process is an effective professional development in teaching reflective thinking and teaching. Information from this study can be used by NBPTS to

improve and refine the certification process. Insight from this study may help

administrators determine if NBPTS is a worthy investment.

2. REVIEW OF LITERATURE

This review of literature provides an overview of reflective thinking and teaching practices in education, including definitions, theories, general characteristics, positive effects, levels, and tools for reflective thinking and teaching. In addition, information and research is presented on the National Board for Professional Teaching Standards, its certification process, and the intended impact of the certification process on reflective teaching practices.

Definitions of Reflective Thinking

Research in education emphasizes reflective practice as a critical means to achieving effective teaching. For this reason, educators, researchers, and theorists continue to study and define reflective thinking in efforts to add to its knowledge-base and improve the quality of education. Figure 2 provides a sample of the many definitions of reflective practice that relate to the field of education and the teaching profession.

Theories of Reflective Thinking

In order to better understand the meaning of reflective thinking, it is important to discuss conceptual frameworks of reflection. The literature identifies several pioneers who developed theoretical frameworks of reflective thinking: John Dewey, Jürgen Habermas, and Donald Schön. Their theories of reflective thinking continue to guide research on reflective practices in education.

"A genuinely critical, questioning orientation and a deep commitment to discovery and analysis of positive and negative information concerning the quality and status of a professional's designed action" (Bright, 1996, p. 165)

"The inner dialogue with oneself whereby a person calls forth experiences, beliefs, and perceptions" (Campbell-Jones & Campbell-Jones, 2002, p. 134)

"Our attempt to understand and make sense of the world" (Brubacher, Case, & Reagan, 1994, p. 36)

"The ability to frame and reframe the practice setting, to develop and respond to this framing through action so that the practitioner's wisdom-in-action is enhanced" (Loughran, 2002, p. 42)

The process of describing, informing, confronting, and reconstructing meaning-making and understanding of actions (Smyth, 1989)

Critical examination of how instructional practices impact social equity and affect the establishment of a humane and just society (Zeichner, 1993)

"A form of mental processing with a purpose and/or an anticipated outcome that is applied to relatively complicated or unstructured ideas for which there is not an obvious solution" (Moon, 1999, p.4)

The consideration of how context and culture influences one's thoughts and actions, respecting the individual learner while utilizing instruction based on theory, research and practice (Osterman & Kottkamp, 2004)

A process of decision-making in a socio-political context by identifying problems, searching for answers, and investigating social problems (Ross & Hannay, 1986)

A complicated mental process of examining issues in which there is no obvious solution (King & Kitchener, 1994)

The process of gathering information about an experience, analyzing multiple influencing variables, forming hypotheses, and then testing the hypotheses (Langer & Colton, 1994)

"A disciplined inquiry into the motives, methods, materials, and consequences of educational practice" (Norton, 1994, p. 139)

"The capacity of a teacher to think creatively, imaginatively, and at times, self-critically about classroom practice" (Lasley, 1992, p. 24)

"Cognitive processes and an open perspective that involve a deliberate pause to examine beliefs, goals, and practices in order to again new or deeper understanding that leads to actions that improve the lives of students" (Montie, York-Barr, & Kronberb, 1998, p. 9)

Figure 2. Definitions of Reflective Thinking

Dewey

        Over eight decades ago, John Dewey presented a theoretical framework of reflective thinking when he wrote *How We Think* (1933). According to Dewey, reflective thinking is the "active, persistent, and careful consideration of any belief or supposed form of knowledge in light of the grounds that support it and the further conclusions to which it tends" (1933, p. 9). Dewey believed the primary purpose of education was to help individuals learn reflective thinking skills, so they could "engage in intelligent action" (Valli, 1997, p. 68). Dewey (1933) proposed that reflective thinking "converts action that is merely appetitive, blind, and impulsive into intelligent action, emancipates us from merely impulsive and merely routine activity, and enables us to direct our activities with foresight and to plan according to ends-in-view" (p. 17). Furthermore, Dewey emphasized that reflective thinking allows us "to know what we are about when we act" (1933, p. 17).

        Dewey equated reflective thinking to a meaning-making process and believed a "state of perplexity, hesitation, doubt" initiates the reflective process (1933, p. 9). Once the teacher pauses and recognizes a problematic situation, the teacher begins "an act of search or investigation directed toward bringing to light further facts which serve to corroborate or nullify the supposed belief" (Dewey, 1933, p. 9). At the end of the process, the teacher gains a deeper understanding of the experience and is able to connect it to other experiences, ideas, and beliefs. Dewey related the process of reflective thinking to scientific inquiry, which requires a rigorous, systematic, and disciplined way of thinking. Dewey believed the process of reflective thinking necessitates interaction with others; therefore, it not only has the potential to change an individual but society as well.

Dewey (1933) believed reflective thinking involves a set of attitudes; open-mindedness, whole-heartedness, and responsibility. Rodgers (2002) provides a definition of each of these characteristics. Open-mindedness demonstrates the willingness to consider multiple perspectives and take risks by acknowledging the "possibility of error even in the beliefs that are dearest to us" (Dewey, 1933, p. 30). This attitude keeps the teacher from getting "stuck on the level of self" because it allows the progression from "self-absorption" to "self-awareness" (Rodgers, 2002, p. 861). Next, Dewey believed reflective thinking requires whole-heartedness, which prevents the teacher from being indifferent. Whole-heartedness includes the motivation and enthusiasm to grow personally. Dewey believed responsibility is essential to reflective thinking and meaning-making because it requires the teacher to consider the real-world implications of actions and consequences (Rodgers, 2002).

Habermas

In 1971, Jürgen Habermas wrote *Knowledge and Human Interests* in which he described how human interests and reflective thinking generate knowledge. He identified three types of knowledge generated by interests and reflection: technical, practical, and emancipatory (Mezirow, 1981). First, technical knowledge is associated with the teacher's interest in work and practices, and its primary purpose is to discover efficient and effective means to an end (Gore & Zeichner, 1991). An example of inquiry that produces technical knowledge is "What skills are necessary for my students to learn in order to perform successfully on the formative assessment?" Next, practical knowledge relates to the teacher's interest in interactions, focusing on interpersonal relationships and communication. By recognizing and clarifying assumptions and biases, the teacher

discovers mutual understandings and shared meanings (Mezirow, 1981). An example of a

reflective inquiry that generates practical knowledge is "Why did some of my students

score lower on the formative assessment?" Finally, emancipatory knowledge comes from

the teacher's interest in power structures and self-knowledge. The purpose of

emancipatory reflection, also known as critical reflection, is to critique ideologies and

seek liberation from inequities (Mezirow, 1981). An example of critical reflective inquiry

is "Is the educational system responsive to cultural differences?"

Schön

     Donald Schön is also recognized for his theoretical framework of reflective

thinking. He studied practitioners' thought processes during difficult experiences to

determine how they acquire professional knowledge. In 1983, he wrote *The Reflective

Practitioner* in which he defined reflective thinking as "an epistemology of practice

implicit in the artistic, intuitive process which practitioners bring to situations of

uncertainty, instability, uniqueness, and value conflict" (p. 49). According to Lake

(2006), "Schön claims that reflection moves a professional from the learned scientific

study of a field to the artistry of expertise" (p. 23).

     According to Schön, there are two types of reflective thinking that develop

knowledge: reflection-in-action and reflection-on action. Reflection-in-action occurs

when the practitioner identifies and selects practical solutions while in the midst of a

problematic situation. York-Barr, Sommers, Ghere, and Montie (2006) describe

reflection-in-action as "the process of observing our thinking and action as they are

occurring, in order to make adjustments in the moment" (p. 6). Schön postulates that,

after the difficult situation, the reflective practitioner engages in reflection-on-action to

further evaluate the difficult situation and initiate a solution. York-Barr, et al., explain reflection-on-action as "the process of looking back on and learning from an experience or action in order to affect future action" (p. 6).

General Characteristics of Reflective Teachers

"Teachers are always in the process of 'becoming. Given the dynamics of their work, they need to continuously rediscover who they are and what they stand for . . . through deep reflection about their craft" (Nieto, 2003, p. 395). Literature supports the idea that reflective practice is at the heart of effective teaching. One way to understand the effects of reflective practices on the teaching profession is to identify the characteristics of reflective practitioners. Figure 3 defines the characteristics of practitioners who habitually engage in reflective thinking (Taggart & Wilson, 2005).

Positive Effects of Reflective Thinking

Research supports the assumption that effective teaching involves more than just knowledge of a subject matter. Effective teaching requires ongoing mastery through reflection. According to Taggart and Wilson (2005), "more learning is derived from reflecting on an experience than from the experience itself" (p. 90). Darling-Hammond (1998) asserts that reflective teachers are expert teachers. For example, good teachers posses knowledge of subject matter, time management skills, a repertoire of instructional methods, and knowledge of educational theories; however, expert teachers possess those attributes plus the willingness to reflect on the impact and consequences of their own decisions and actions.

Search for alternative explanations	Welcome advice, critique, and peer review
Identify and analyze problems and situations	Are wholeheartedly committed to problem resolution
Use rational problem-solving skills	Are committed to improvement in practice
Plan, monitor, and evaluate actions	Align action with new understandings
Possess self-efficacy, intrinsic motivation, and a desire for lifelong learning	Make intuitive, creative interpretations and judgments
Are open to experimentation and new innovations	Are committed to professional development
View situations from multiple perspectives	Possess a sustained interest in learning
Are proactive and set personal goals	Question personal actions and goals
Make decisions consciously and carefully	Are committed to values
Possess skills for acquiring and utilizing information	Are focused on student learning and development
Evaluate underlying assumptions and biases	Assumes responsibility for one's own learning
Are flexible in the search for alternative solutions	Value continuous inquiry, questioning, and discovery
Recognize that knowledge is learned from experience and context	

Figure 3. Characteristics of Reflective Teachers. Adapted from *Promoting Reflective Thinking in Teachers: 50 Action Strategies*, by G. Taggart and A. Wilson, 2005, Thousand Oaks, CA: Corwin Press. Copyright © 2005 by Corwin Press.

Dewey (1933) believed reflective thinking is the only pathway to real knowledge. "Without reflection, theories of action are not revised and, until new concepts, ideas, or theories of action begin to influence behavior, learning will not occur" (Osterman, 1990, p. 135). Without reflective thinking, teachers' instructional practices will become stagnant and routine. "Unless teachers engage in critical reflection and ongoing discovery, they stay trapped in unexamined judgments, interpretations, assumptions, and expectations" (Larrivee, 2000, p. 294). Dewey (1933) asserts, "What an individual has learned in the way of knowledge and skill in one situation becomes an instrument of understanding and dealing effectively with the situations that follow" (p. 44).

Van Manen (1995) believes reflective thinking leads to professional growth. Reflective thinking enables teachers to be self-directed and to take responsibility for improving their teaching performance (Zeichner & Liston, 1987). Osterman (1990) identifies ways in which reflective thinking promotes professional growth. First, reflective thinking increases the repertoire of instructional strategies utilized by teachers (Osterman, 1990). Second, reflective thinking encourages teachers to confront and respond to problems encountered day-to-day and long term. Third, reflective thinking allows teachers to challenge existing practices. Reflective thinking demands that teachers "call into question the assumptions underlying [their] customary, habitual ways of thinking and acting and then be ready to think and act differently on the basis of this critical questioning" (Brookfield, 1987, p. 1).

Reflective teachers foster attitudes such as open-mindedness, whole-heartedness, and responsibility for their students. "Teachers who reflect about their own practices,

value thinking, and emphasize depth over breadth of coverage tend to have classrooms with a measurable climate of thoughtfulness" (Onosko, 1992, p. 40).

Research on reflective practice in education continues to be important due to the challenges and realities of classrooms and the moral and political dimensions of teaching (Tsangardiou & Seidentop, 1995). Darling-Hammond (1998) believes reflective teachers are needed to meet the complex problems faced in schools. However, teachers are not inherently reflective (Posner, 1989; Brookfield, 1987). In addition, most teachers have little time to reflect on their practices. Many teachers often become trapped by the demands of their job and develop techniques for getting through the day (Wong, 1998). According to Osterman and Kottkamp (2004), the majority of teachers also implement new educational fads without evaluating the impact on their teaching practices and student learning.

Levels of Reflective Thinking

"It is not a question of whether an individual is reflective or not but rather at what level of reflection a person is operating" (El-Dib, 2007, p. 26). Arredondo-Rucinski (2005) asserts that individuals act according to their level of mental structure which is organized into stages from less to more complex. Other researchers support the concept that reflective thinking involves cognitive stages.

Valli

Valli (1997) identifies five levels of reflective thinking based on the content and quality of reflection: technical reflection, reflection-in and on-action, deliberate reflection, personalistic reflection, and critical reflection. Valli asserts that teachers at the technical level consider research as a basis for reflecting on general educational practices.

This level of reflection is considered researched based because teachers match their performance to external guidelines (Polk, 2006). At the reflection-in and on-action level, the teacher uses a specific experience to reflect on his or her actions and consequences. This level of reflection is considered performance based because teachers make decisions in unique situations using personal experience and knowledge of instructional practices (Minott, M. 2008). At the deliberate reflection level, the teacher reflects on personal assumptions and considers multiple perspectives. This level of reflection requires teachers to weigh competing viewpoints and research findings to validate decisions (Valli, 1997). The personalistic level includes reflection on relationships and personal growth. According to Valli (1997) teachers reflecting at this level are concerned with students' affective needs. Critical reflection, the highest level of reflective thinking, emphasizes the social, political, and moral aspects of education. At this level of reflection, teachers "aim to understand and improve the quality of life of disadvantaged groups" (Minott, 2008, p. 56)

King and Kitchener

King and Kitchener (2002) assert that reflective thinking entails seven levels called judgment stages. They categorize these stages into three levels: pre-reflective (stages 1-3), quasi-reflective (stages 4 and 5), and reflective thinking (stages 6 and 7). At the pre-reflective level, "knowledge is gained through the word of an authority figure or through firsthand observation, rather than, for example, through the evaluation of evidence" (King & Kitchener, 2002, p. 39). The teacher views knowledge as well-structured and certain (Unrath, 2002). At the quasi-reflective level, the teacher realizes knowledge contains degrees of uncertainty and is idiosyncratic to the individual and

situation (King & Kitchener, 1994). At this level, the teacher begins to compare and contrast evidence in order to reason and reflect logically (King & Kitchener, 2002). At the highest level, reflective thinking, the teacher perceives the need to "reevaluate the adequacy of judgments as new data or new methodologies become available" (King & Kitchener, 2002, p. 40). At this level, the teacher assumes the role of inquirer and begins to construct his or her own knowledge (King & Kitchener, 1994).

Zeichner and Liston

Zeichner and Liston (1991) identify four levels of reflection: factual, procedural, justificatory, and critical. At the first level, factual, the teacher's reflective thinking is centered on instructional routines and procedures. The teacher is concerned with what has happened or what will happen in a specific instructional situation (Russback, 2010) At the next level, procedural, reflection focuses on the evaluation of teaching outcomes. The teacher focuses on what to do as well as what has been achieved (Russback, 2010). The teacher engaged in justificatory reflection, the third level of reflective thinking, considers rationales for teaching. At this level, the teacher asks why questions and focuses on rationales for specific actions and decisions. The teacher seeks explanations and reasoning (Russback, 2010). Critical reflection, the fourth level, focuses on the critical examination of teaching as it impacts social justice. The teacher reflecting at this level questions values and assumptions in instructional practices as well as evaluates the adequacy and justifications of actions and decisions (Russback, 2010).

Louden

In an effort to understand ways teachers reflect on their practice, Louden created a conceptual framework of reflection. Based on the works of Schön and Habermas, Louden

identifies two dimensions of reflection: interests and forms (Louden, 1992). First, Louden

believes the act of reflecting involves an interest or a "goal or end-in-view" (p. 179). He

recognizes four types of interest or reasons teachers engage in reflection: technical,

personal, problematic, and critical. Louden also believes reflection has different

characteristics or (forms,) including introspection, replay and rehearsal, enquiry, and

spontaneity.

Louden posits that teachers engage in reflection based on end goals or interests,

which he identifies as technical, personal, problematic, or critical interests. He believes

teachers engage in reflection to achieve a goal based on dimensions of interests.

According to Louden, the first type of interest, technical interest, is "an interest in

controlling the world by attending to rule-like regularities" (p.181). Teachers who engage

in reflection based on technical interests compare their actions and decisions against a

"set of empirically or theoretically derived standards and development of technical skills

of teaching" (p. 181). Teachers who reflect based on personal interests seek to connect

professional actions and decisions with an understanding of their own lives. Reflection

based on problematic interests seeks resolution of problems in which teachers are

surprised by an outcome and are "moved to rethink their professional practice" (p. 185).

Finally, Louden indicates teachers reflect based on critical interests where they question

their assumed thoughts, feeling and actions. Louden defines critical reflection as

"considering who benefits from current practices, how these practices might be changed,

and personal or political action to secure changes in the conditions of classroom work"

(p. 188).

According to Louden, forms of reflection explain the ways in which changes in understanding and action occur. Louden posits that reflection can be a matter of introspection, replaying or rehearsing, enquiry, or spontaneity. First, reflection can take the form of introspection, "which involves looking inward and reconsidering one's thoughts and feelings about some issue" (p. 193). Another form of reflection is replay and rehearsal which according to Louden "involves teachers' discourse about events that have occurred or the possibility of future actions" (p. 195). Louden identifies enquiry as a form of reflection involving a process of "deliberate movement between action and discourse" (p.200). Action research is an example of this form of reflection in which teachers engage in a cycle of planning, acting, observing, and reflecting. Louden describes the final form of reflection as spontaneity, a form of reflection that occurs "within the stream of experience" (p. 204).

Van Manen

Van Manen (1977) identifies three levels of reflective thinking: technical rationality, practical action, and critical reflection. Reflection at the technical rationality level is concerned with instructional practices and skills necessary to achieve a goal. The teacher evaluates the most effective and efficient methods to reach predetermined objectives; however, the teacher does not question the end objectives. The teacher who evolves to the second level, practical action, reflects on the underlying assumptions and biases of techniques applied, considers consequences of these techniques, and re-examines the initial goal. The teacher reflects on the reasons for selecting a particular instructional practice and the assumptions about the benefits of the educational goal as it relates to student achievement. Finally, the teacher participating in critical reflection, the

highest level of reflective thinking, seeks an understanding of instructional practices as they relate to social and political conditions. The teacher is more concerned with "the worth of knowledge and social circumstances useful to students apart from the educator's personal bias" (Ballard, 2006, p. 21).

Rationale for Selecting Van Manen's Model to Guide the Study

My review of the literature identifies Van Manen as a pioneer in defining reflective teaching (Ballard, 2006; Erginel, 2006; Genor, 2005; Hatton & Smith, 1995; Taggart & Wilson, 2005; Unrath, 2002; York-Barr, et al., 2006). Van Manen suggests that the levels of reflective thinking are sequential (i.e., teachers must address the needs of one level before progressing to the next level). Once a level of reflective thinking is achieved, teachers then evolve to the next level of reflectivity: technical rationality to practical action to critical reflection (Taggart & Wilson, 2005). Van Manen's model was used in this study to help explain how National Board certified teachers perceive the meaning of reflective teaching. The literature indicates that many NBCTs assert that the certification process helped them become more aware of their personal teaching philosophies and underlying assumptions that influence their instructional practices. After completing the certification process, many National Board certification participants state they have a deeper awareness of their own preferences and values and how this awareness affects their instructional decisions (Chittenden & Jones, 1997; Lustick, 2002; Sato 2000). This deeper awareness aligns with Van Manen's highest level of reflective thinking, critical reflection. Because Van Manen's model was selected to guide this study, each of Van Manen's levels of reflection is discussed in detail below.

Technical Rationality Level

The primary focus of technical rationality is on applying knowledge of instructional practices and curriculum principles which are seen as coming from an authority such as research or administration (McLaughlin & O'Donoghue, 1996). According to Van Manen (1977), teachers "learn to apply a variety of techniques to the curriculum and to the teaching-learning process, so that a predetermined set of objectives can be reached most efficiently and most effectively" (p. 210). At this level, the focus of reflection is on *what* happened (Cruikshank, 1987). For example, the teacher engaged in technical rationality might ask himself or herself a question such as, "Why are my students off-task?" At this level, the teacher is concerned with "questioning the appropriateness of various courses of action in the classroom but does not inquire about the purposes of the action" (McLaughlin & O'Donoghue, 1996, p. 135). The emphasis is on the "ends-without questioning their worth or value" (Russack, 2010). The context of the classroom, school, community or society is not considered problematic (Zeichner & Liston, 1987). Van Manen asserts the "'best choices' is defined in accordance with the principles of technological progress – economy, efficiency, and effectiveness" (1977, p. 226). According to Taggart and Wilson (2005), "acquisition of skills and technical knowledge is important as are methodological awareness and ability to implement a preset lesson" (p. 2). Teachers reflecting at the technical level are focused on immediate skills needed to survive in the classroom (Genor, 2005).

Practical Action Level

The primary focus of practical action is on why specific decisions were made and actions taken (Cruikshank, 1985). According to Van Manen, reflection at this level is

"practical insofar as it provides for the justification and legitimation of common practices (p. 219). During the practical action level of reflective thinking, the teacher uses a more subjective, value-oriented thinking process. Here, Van Manen (1977) asserts that "every educational choice is based on a value commitment to some interpretive framework by those involved in the curriculum process" (p. 226). For example, the teacher might ask, "What are my beliefs about my instructional practices? How does my goal benefit my students?" Van Manen asserts that teachers reflecting at this level use "an interpretive understanding both of the nature and quality of educational experience, and of making practical choices" (p. 226). Because reflection at this level seeks to identify and clarify underlying assumptions, the teacher examines the relationship between theory and practice. According to Taggart and Wilson (2005), this level of reflective thinking involves "looking at situations in context, and questioning of practices based on increased pedagogical knowledge and skills" (p. 4). Here, teachers "reflect on the contextual situation, which often leads to better teaching" (Taggart & Wilson, 2005, p. 4). Not only does the teacher seek to understand concepts, contexts, and theoretical frameworks for instructional practices, the teacher also evaluates their practices in regard to the relevance to student growth and needs.

Critical Reflection Level

Critical reflection seeks to ask what *should* be (Van Manen, 1977). "Moral and ethical values are considered while dealing with practical action" (Erginel, 2006, p.20). Teachers consider worth of instruction and knowledge based on "social issues like domination, social roles, justice, equity, and freedom" (Erginel, 2006, p.20). For example, the teacher engaged in critical reflection might ask, "Is the educational system

designed to benefit all students?" Van Manen (1977) states critical reflection seeks to find a "universal consensus, free from delusions or distortions…that pursues worthwhile educational ends in self-determination, community, and on the basis of justice, equality, and freedom" (p. 221). According to Taggart and Wilson (2005), the teacher reflecting at this level is concerned with the worth of knowledge and social consequences of instructional practices. Brookfield (1995) posits that critical reflection is recognizing the difference between what is and what should be.

Because the purpose of this study was to determine the *depth* of reflective thinking practiced by National Board certified teachers, Van Manen's model was chosen as the theory of reflective thinking to guide this study. Van Manen purports "the teacher teaches with the head and the heart and *must feelingly know* what is the appropriate thing to do in ever changing circumstances with children who are organized in groups but who are also unique as individuals" (Van Manen, 1995, p. 33). This concept aligns with NBPTS's 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 students; (3) teachers are responsible for managing and monitoring student learning; (4) teachers think systematically about their practice and learning from experience; and (5) teacher are members of learning communities" (NBPTS, 2008, p. 3).

The Concerns-Based Adoption Model and its Relationship to Van Manen's Model

The concerns-based adoption model (CBAM) is a framework for explaining and implementing the process of change. CBAM identifies three key dimensions for understanding and applying the process of change: stages of concern, levels of use, and innovation configurations (Hall & Hord, 2006). According to Hall and Hord (2006),

change is a process that is personal and individualistic requiring the individual to advance through gradual levels of acceptance and implementation. Because change is both a process and a personal experience, it involves reflection on thoughts and feelings about the change. CBAM's framework for the process of change is similar to Dewey's belief about the process of reflective thinking: both processes involve a movement toward open-mindedness, whole-heartedness, and responsibility.

The first tool used in CBAM is the stages of concern (SoC), which identifies what teachers think and feel about a change (Hall & Hord, 2006). This tool utilizes seven levels of concern. The first three levels are self-concerns, the fourth level consists of task concerns, and the last three levels are concerns about the impact of the change on students. The seven levels of concerns are:

0 – Awareness: The teacher feels little or no concern or involvement in the change process.

1 – Informational: The teacher feels a general interest in the change and wants to know more about it.

2 – Personal: The teacher feels concerned about the personal ramifications of the change and wants to know about the personal impact of the change.

3 – Management: The teacher learns the processes and tasks for implementing the change and is focused on information and resources.

4 – Consequence: The teacher reflects on the way the change impacts students.

5 – Collaboration: The teacher works with other teachers to implement the change effectively and efficiently.

6 – Refocusing: The teacher reflects on the change in order to understand the universal

benefits and adapt it to better meet the needs of students.

Figure 4 provides examples of the types of questions a reflective teacher might

ask during each stage of concern (Hall & Hord, 2006).
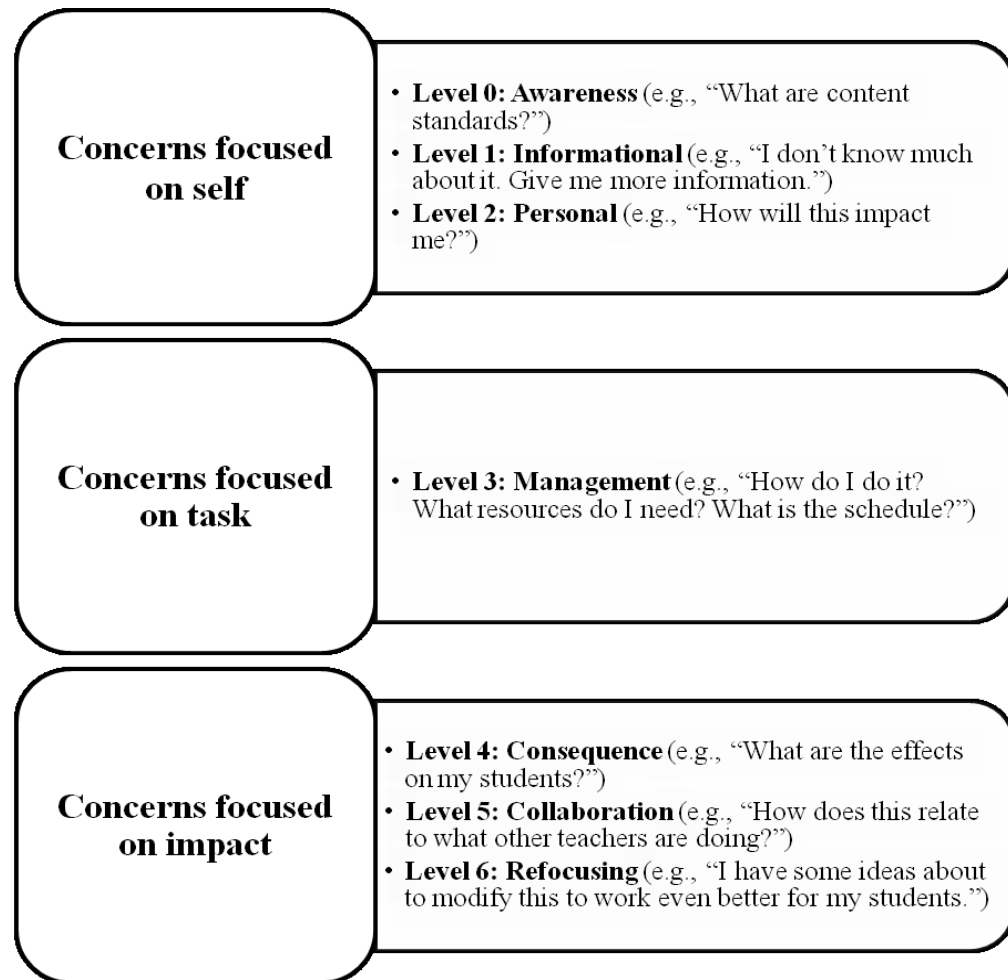
Figure 4. Examples of Teacher Questions (and Levels of Reflective Thinking) at Each
Level of Concern

Change provides opportunities for teachers to engage in reflective thinking that

can lead to improvements and learning. Teachers consistently reflect on changes related

to curriculum, materials, goals, and instructional practices. This reflection then drives

their behaviors during the process of implementing the change. CBAM's stages of

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concern are similar to Van Manen's levels of reflective thinking in that both are sequential, starting with minimal reflection and progressing to a deeper reflection. Table 1 shows the correlation between CBAM's stages of concern and Van Manen's levels of reflective thinking. Both models start with a technical level of reflection that focuses on efficiency and progresses to critical reflection that focuses value and universal benefits knowledge and experiences.

Table 1

Correlation Between Van Manen's Model and CBAM's SoC

Van Manen's Levels of Reflective Thinking	CBAM's Stages of Concern
Technical Rationality	Informational
	Personal
	Management
Practical Action	Consequences
	Collaboration
Critical Reflection	Refocusing

The next tool utilized in CBAM is levels of use (LoU), which identifies the behaviors during the adoption of change (Hollingshead, 2009). Like the stages of concern, the behaviors identified in the levels of use progress. According to Hall and Hord (2006), there are eight levels of uses that explain how individuals behave during the process of change:

0 – Non-Use: The teacher has no knowledge or interest in the change and is not involved in the change process.

1 – Orientation: The teacher makes a deliberate effort to acquire information about the change.

2 – Preparation: The teacher has plans to begin implementing the change.

3 – Mechanical: The teacher is focused on efficient and effective day-to-day implementation of the change.

4A – Routine: The teacher has stabilized the daily implementation of the change and is making some modifications to better implement the change.

4B – Refinement: The teacher is making modifications as need to better meet the needs of students.

5 – Integration: The teacher is working deliberately and collaboratively with colleagues to modify the change to meet the needs of students.

6 – Renewal: The teacher reflects on the change and seeks alternatives to maximize the impact on students.

Table 2 shows the correlation between CBAM's levels of use and Van Manen's levels of reflective thinking.

Table 2.

Correlation Between Van Manen's Model and CBAM's LoU

Van Manen's Levels of Reflective Thinking	CBAM's Levels of Use
Technical Rationality	Orientation Preparation Mechanical
Practical Action	Routine Refinement
Critical Reflection	Integration Renewal

Tools for Developing Reflective Thinking

According to Dewey (1933), reflective thinking does not happen intrinsically for most teachers. The process of reflection must be developed. The literature recommends different vehicles to cultivate reflective thinking.

Journaling

Journaling is an effective tool that promotes reflective thinking. Stout (1993) contends that journaling is an act of discovery because "no other thinking process helps us so completely develop a line of inquiry or a mode of thought" (p. 36). Journaling is a way of "recording personal thoughts, daily experiences, and evolving insights" (Hiemstra, 2001, p. 19). It creates opportunities for the individual to reread and reevaluate earlier reflections as a means of gaining new understanding and insights. Heimstra (2001) asserts that journaling can promote critical self-reflection because it involves questioning dilemmas, evaluating beliefs, and challenging world views. Schneider (1994) purports that journaling is beneficial to adult learning because it is closest to natural speech and allows the writer to jot down ideas without self-consciousness or inhibition. Sommer (1989) indicates journals are a safe place to practice writing without restrictions of form, audience, or evaluation. Because journaling provides tangible evidence of mental processes and makes thoughts visible and concrete, the writer is able to expand on ideas expressed in prior entries (Clark, 1994). According to Clark, critical reflection requires more than recording an experience; "equally important is the ability to make meaning out of what is expressed" (1994, p. 355). Journaling allows the writer to connect new information and what the writer already knows; thus enhancing meaning making.

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An abundance of literature exists about the ways journaling enhances reflective thinking among teachers. Minott (2008) believes reflective journaling is "linked to the development of the teacher's beliefs, empowerment, learning, and thinking, which are all integral to being or becoming a reflective practitioner" (p. 75). Spalding and Wilson (2002) claim journaling benefits teachers by creating an internal dialogue about their experiences, thoughts, beliefs and concerns. Yinger and Clark (1981) believe journals are beneficial because they allow teachers to discover four important aspects of themselves: "(1) what they know, (2) what they feel, (3) what they do (and how they do it), and (4) why they do it" (p. 10).

Journal writing, however, does not inherently ensure critical reflection. In a study by Holt (1994), six out of 10 adult students utilizing reflective journals did not find the journals helpful and indicated they served more as a record keeping method than a learning tool. Much of the research on reflective journals used in adult education programs indicates the writing is more descriptive than reflective, which may indicate that reflective writing needs to be taught, as it does not occur intrinsically.

Most of the educational research on journaling focuses on the experiences of preservice teachers. Many researchers purport that journal writing needs some kind of structure to promote true reflection (Spalding & Wilson, 2002). Hoover (1994) studied preservice teachers and found they needed specific writing tasks to prevent their journaling from becoming an outlet for venting frustration without truly reflecting. When Spalding and Wilson (2002) modeled reflective journal writing prior to assigning a reflective activity, preservice teachers reported that the process helped them obtain a greater understanding of the concept of reflection. Such structure may or may not be

necessary for experienced teachers using journal writing as a means of reflective practice; more research in this area is needed.

In a study of student teacher journals, Surbeck, Han, and Moyer (1991) identified journal entries as having three categories of reflective responses: reaction, elaboration, and contemplation. Reflective responses in the reaction category expressed feelings, concerns, and issues related to classroom activities and environments, students, peers, and readings related to educational practices. Reflective responses in the elaboration category offered explanations or examples of initial reactions to feelings, concerns, or situations. Finally, reflective responses in the contemplation category included initial reaction and elaboration related to personal, professional, and social issues. A journal entry in the contemplation category emphasized personal matters; opinions about students' instructional strategies and goals; educational theories; and social, ethical, and moral issues and concerns.

Subramanian (2001) studied the journal entries of ten teacher trainees and found that teacher journals have three categories of reflective thinking: description, analysis, and suggestion. Journal entries in the description category described personal feelings and concerns, situations and experiences, and problems. In the analysis category, journal entries provided contextual and/or comparative analysis of feelings, situations, experiences, and problems. Finally, journal entries in the suggestion category attempted to offer solutions to problems that were described and analyzed. The most common solutions included changes to personal qualities, improvement of instructional methods and techniques, and recommendations to improve student behaviors, attitudes, and learning.

Subramanian's study also identified seven common topics of teacher journals: self, students, teaching, school, supervision, learning, and preparation. When referencing their self, teacher trainees wrote about self-confidence as it relates to knowledge of educational theories and subject matter; commitment, including concerns about student development; health related issues that interfered with teaching goal; and personality traits such as level of strictness. Journal entries focused on students included concerns about student diversity, especially diverse learning abilities; discipline issues; students' lack of interest; prior knowledge of skills; and learning habits. Journal entries in the teaching category included concerns about the appropriateness and effectiveness of instructional methods, techniques and activities, instructional objectives, time management, classroom management, and assessments. Journal entries focused on school included concerns about involvement and collaboration with other teachers. Journal entries referencing supervision centered on lack of feedback and time for discussions. When writing about learning, teacher trainees expressed concerns about theory; input from peers, experienced teachers, and supervisors; discussions with peers, experienced teachers, and supervisors; observing and questioning other teachers; reading; and prior teaching experience. Journal entries focused on preparation include statements about "first day" excitement and anxiety, orientation to facilities and resources, introduction to teachers and students, and preparing materials for teaching.

Narrative Writing

Narrative writing can also enhance reflective thinking (Hattan & Smith, 1995). "The act of writing our reflected thoughts gives them power, and writing simultaneously empowers the author" (Unrath, 2002, p. 22). Teacher narratives "form a basis of narrative

inquiry" (Sparks-Langer, Colton, Pasch, & Starko 1991, p. 42). In narrative writing, the reflective teacher describes an event and why it occurred, explains what was expected to happen, reveals feelings related to the event, and predicts how the event could affect future practices (Mattingly, 1991). This process helps the teacher make sense of an experience and apply new knowledge to future experience. Autobiographical sketches, intended to increase self-awareness, are another type of narrative writing that promotes reflective thinking (Brookfield, 1995). A critical-incident narrative describes a significant event in the teacher's profession (either positive or negative) and explains why it is considered significant to the narrator (Brookfield, 1990). The critical-incident narrative provides both a means for the teacher to identify and revise assumptions about instructional practices and student learning. Autobiographical and critical-incident reflection offers teachers a lens for learning about themselves and exploring underlying assumptions (Brookfield, 1995).

Cochran-Smith and Lytle (1999) claim teacher narratives have three major benefits. First, teacher narratives offer insights into the challenges of the teacher's day and the motivations for the teacher's decisions and actions. Second, teacher narratives promote self-inquiry. Third, teacher narratives provide case studies for teacher dilemmas and events. Greene (1988) purports that narrative writing objectifies events in teachers' lives so they can become spectators, allowing them to explore experiences and beliefs and encouraging "consciousness of possibility" (p. 16).

Portfolios

The literature offers various definitions and different types of teacher portfolios. According to Painter (2001), a portfolio is a "documented history of a teacher's learning

process against a set of teaching standards" (p. 6). Riggs and Sandlin (2000) describe it as a "living document" (p. 20) in which the teacher compiles collections of "artifacts, reproductions, testimonials, and productions that represent the teacher's professional growth and abilities" (p. 22). Wolf (1996) defines a portfolio as a teacher's collection of products that demonstrate and showcase the teacher's knowledge and skills.

A portfolio is a tool that enables the teacher to select important artifacts and create written reflections about each one. Both Dewey (1933) and Schön (1983) believed portfolio development offers teachers the opportunity to investigate their teaching and question the nature of their actions. The reflective process often begins with the selection of artifacts. By reviewing different materials and examples to include in portfolio development, the teacher analyzes instructional practices and relationships with students. In addition, the collection of various artifacts fosters multiple perspectives.

A portfolio is more than just a display of artifacts; a portfolio is a reflective critique and evaluation of the effectiveness of instructional practices and teacher-student interactions (Unrath, 2002). Shulman (1998) refers to portfolio development as a "theoretical act" because it requires the teacher to articulate personal theories about teaching practices and student learning (p. 24). Although portfolios vary in structure and contents based on their purposes, portfolios include two components: artifacts and written reflection (Wolf, 1996). The artifacts serve as a stimulus for written reflections which reveal the teacher's goals and philosophies (Huff, 2006).

Action Research

Action research, intended to improve teaching and learning, is another tool that fosters reflective thinking. Sagor (2000) defines action research as the "disciplined

process of inquiry conducted by and for those taking the action" (p. 3). He identifies seven sequential steps in the action research process: (a) choosing a relevant problem to study, (b) identifying personal theories and beliefs about the problem, (c) constructing research questions, (d) gathering data, (e) analyzing the data, (f) identifying alternative solutions, and (g) selecting and implementing a course of action based on the research findings. Kemmis and McTaggert (1988) identify action research as the process of plan, act, observe, and reflect which is repeated until the theory accurately predicts the practice.

The literature supports the idea that action research encourages reflective thinking and promotes school change (Gilles, Wilson, & Elias, 2010). First, action research empowers teachers to make changes by putting them in control of improving their profession (Lake, 2006). "It makes sense to believe that practitioners would develop a more genuine interest in researching problems they themselves framed" (Dinkelman, 1997, pp. 14). Next, action research fosters collaboration, which opens communication and increases awareness of issues that impact student learning and teaching practices. "Teachers who participate in action research projects become more flexible in their thinking, more receptive to new ideas, and more able to solve problems as they arise" (Oja & Smulyan, 1989, p. 15). Finally, action research can be a professional development tool used for school renewal (Gilles, et al., 2010). "The direct involvement of practitioners in planning and implementing change would suggest a higher level of commitment to the success of the project" (Dinkelman, 1997, pp. 15).

Collaboration

Collaboration with peers provides opportunities for teachers to engage in reflective thinking. Examples of peer collaboration include study circles, peer review of student work, team teaching, and peer observation. Collaboration fosters dialogue, which in turn, "leads not only to new knowledge but to greater understanding of others as well as understanding of self" (Osterman, 1990. p. 139). Belenky, Clinchy, Goldberger, and Tarule (1986) assert "through mutual stretching and sharing, the group achieves a vision richer than any individual could achieve alone" (p. 119). Collaboration fosters reflection in a profession that often seems isolated: collaboration enables teachers to "share themselves—their thoughts, ideas, concerns, and frustrations" (Finn, 2002, p. 74).

Besides fostering reflective thinking, teacher collaboration cultivates improved instructional practices, student learning, and professional communities. Through the insights of others, collaboration allows teachers to deepen their understanding of new knowledge, better understand how new knowledge relates to their own practice, and commit to new practices (Costa & Kallick, 2000). Teachers working in collaboration "are more likely to improve student learning than teachers working alone" (Wood, 2007, p. 705). The combined efforts of creating effective lesson plans and finding relevant instructional materials are greater than what could be achieved by a single teacher. Finally, increased collaboration and decreased teacher isolation results in school improvement growth (Little, 2002). According to Little (2002), effective schools have a higher degree of teacher collaboration than less effective schools. Collaborative practices that contribute to successful schools include (a) consistent teacher discussions about instructional practices: (b) peer observations with constructive feedback; (c) shared

planning, designing, and evaluating instructional materials and curriculum; and (d) mutual teaching and learning about the practice of teaching.

McCann and Radford (1993) purport three characteristics required for successful teacher collaboration: leadership, time, and motivation. First, school leaders must support teacher collaboration. "Educational leaders should share with teachers a disciplined curiosity about teaching and join with them in mastering and advancing this complex human activity" (McCann & Radford, 1993, p. 36). Second, school leaders should provide teachers the necessary time to collaborate. Third, teachers must be motivated to participate in collaboration. In a study by McCann and Radford (1993), teachers reported that collaboration with their peers increased their observational skills, improved their classroom management, enhanced active learning among their students, improved their questioning skills and group techniques, and fostered a positive change in their interactions with students.

National Board for Professional Teaching Standards

The National Board for Professional Teaching Standards (NBPTS) asserts that accomplished teachers "reflect on their teaching in order that they might improve their practice" (NBPTS, 2002, p.16). According to NBPTS (2002), teachers that reflect systematically "critically examine their practice, seek to expand their repertoire, deepen their knowledge, sharpen their judgment and adapt their teaching to new findings, ideas, and theories" (p. 10).

Background

The current drive for educational reform in the United States has its roots in the President's National Commission on Excellence in Education's report, *A Nation at Risk:*

The Imperative for Educational Reform, released for public review in 1983 (National Commission, 1983). In 1986, the Carnegie Task Force on Teaching as a Profession responded to calls for educational reform by proposing that the teaching profession establish standards and certify teachers who could meet standards in attempt to create "a profession of well-educated teachers prepared to assume new powers and responsibilities to redesign schools for the future" (Johnson, 2001, p. 1). Subsequently, National Board, an independent, nonprofit organization, established the National Board for Professional Teaching Standards and a volunteer certification process to "delineate outstanding practice and recognize those who achieve it" (NBPTS, 2004, p. 1).

NBPTS Five Core Propositions

National Board (NBPTS, 2002) proposed five core propositions that suggest what effective teachers should know and be able to do:

Proposition 1: "Teachers are committed to their students and their learning" (p.3). Through reflectivity, teachers recognize individual student differences and adjust their teaching practices accordingly. They are committed to students as learners and individuals, understand how students learn, and acknowledge their students' cognitive, emotional, moral, and social development. They emphasize student understanding, encourage self-inquiry, actively engage learners, and incorporate student experiences in learning environment.

Proposition 2: "Teachers know the subjects they teach and how to teach those subjects to students" (p. 3). Teachers acknowledge and endorse multiple pathways to knowledge; they understand and value how knowledge of their subject is created. They possess an in depth understanding of how their subject is linked to other subjects. They

know how to relay subject content to students, using a variety of instructional strategies, materials, and resources. They understand the importance of discovery, active engagement, inquiry, and synthesis to promote higher level thinking skills among students

Proposition 3: "Teachers are responsible for managing and monitoring student learning" (p. 3). Not only do teachers utilize multiple strategies, they know when and why a particular strategy is applicable. Teachers also know their students well enough to accommodate different learning styles. They differentiate and individualize instruction as well as utilize creative assessments that go beyond traditional tests and quizzes. Teachers reflect on their assumptions and biases about student learning and consider alternatives to achieving the ultimate goal of student success.

Proposition 4: "Teachers think systematically about their practice and learning from experience" (p.3). They continually practice the art of reflection and possess a genuine passion for learning and improving their profession. They are receptive to feedback; seek advice from colleagues, administrators, students, and parents; and utilize educational research in order to grow professionally. They strive to exhibit qualities such as caring, fairness, equality, and respect for diversity.

Proposition 5: "Teachers are members of learning communities. They are actively involved in their campus, district, and community" (p.3). Teachers collaborate with other professionals and seek professional growth opportunities to improve student learning. They utilize community resources and parents to improve instruction. They understand the culture of their school and demonstrate awareness of social and political aspects of education including state and federal legislation.

NBPTS Certification Process

In order to attain National Board certification, teachers must complete a comprehensive process in which their content knowledge and teaching practices are measured against the five core propositions. Teachers must meet or exceed the NBPTS standards tied to the five propositions. These standards, intended to articulate effectiveness, knowledge, skills, character, and commitment of accomplished teachers, exist for every field and developmental level (NBPTS, 2014). Currently, NBPTS standards exist for 25 certificate fields, spanning 16 content areas and four student developmental levels. Table 3 outlines the various certifications by subject and developmental areas.

The certification process consists of two major parts: (a) creating a performance-based portfolio and (b) completing a timed written assessment. In part one of the certification process, candidates submit four portfolio entries over a four to six month span. The first three portfolio submissions are classroom-based and reveal actual lessons or learning experiences developed and implemented by the candidate during the certification year. These entries consist of videotapes of classroom instruction, samples of student learning products and other artifacts, and commentaries on the goals and purposes of the instructional activity, reflections on what occurred, the effectiveness of the instructional practice, and the rationale for professional judgment (NBPTS, 2014). The fourth portfolio submission illustrates the candidate's accomplishments and contributions to the school, district, and community during the previous two years. Part two of the certification process is the written assessment. It takes place at NBPTS testing centers and entails a three hour, timed essay where candidates respond to six computer-generated

prompts. Candidates are given 30 minutes per prompt to respond. The written assessment focuses on knowledge of subject matter content. Candidates are required to develop instructional plans, view and respond to content related videotapes, analyze student artifacts, and participate in simulations (Park & Oliver, 2007).

The National Board certification process takes an estimated 200 to 400 hours to complete, with a registration fee of $2,500. Eligible candidates must have a bachelor's degree, a valid teaching license, and at least three years of teaching experience in early childhood, elementary, middle, or high school. Successful completion of the NBPTS certification process is not an easy task. In 2013, less than 50% of the first-time candidates nationwide successfully earned their certification (NBPTS, 2014).

The certification process can take up to three years to complete. Candidates who do not successfully complete the certification process during their first attempt can retain their scores and continue working toward the certification for two additional years. Less than three percent of the nation's teachers possess a National Board certification (NBPTS, 2014). Since the inception of the National Board certification process in 1987, there are 106, 365 NBCTs across 50 states (NBPTS, 2014).

National Board Certification's Impact on Reflective Thinking and Teaching

Personal and professional reflection is key to achieving National Board Certification. The certification process is lauded for its ability to make teachers more reflective and analytical of their practices. The certification process leads teachers to ask the more critical "why" questions about their practices. "Candidates describe the process as a way to deepen subject-matter knowledge and become more skillful in daily

classroom instruction and student assessment, ultimately resulting in improved student

learning" (NBPTS, 2004).

Table 3.

National Board Certifications

Subject Area	Certification Area	Student Age Category
Art	Early and Middle Childhood	Ages 3-12
	Early Adolescence through Young Adulthood	Ages 11-18+
Career and Technical Education	Early Adolescence through Young Adulthood	Ages 11-18+
English as a New Language	Early and Middle Childhood	Ages 3-12
	Early Adolescence through Young Adulthood	Ages 11-18+
English Language Arts	Early Adolescence	Ages 11-15
	Adolescence and Young Adulthood	Ages 14-18+
Exceptional Needs Specialist	Early Childhood through Young Adulthood	Ages 3-18+
Generalist	Early Childhood	Ages 3-8
	Middle Childhood	Ages 7-12
Health	Early Adolescence through Young Adulthood	Ages 11-18+
Library Media	Early Childhood through Young Adulthood	Ages 3-18+
Literacy: Reading – Language Arts	Early and Middle Childhood	Ages 3-12
Mathematics	Early Adolescence	Ages 11-15
	Adolescence and Young Adulthood	Ages 14-18+
Music	Early and Middle Childhood	Ages 3-12
	Early Adolescence through Young Adulthood	Ages 3-18+
Physical Education	Early and Middle Childhood	Ages 3-12
	Early Adolescence through Young Adulthood	Ages 3-18+
School Counseling	Early Childhood through Young Adulthood	Ages 3-18+
Science	Early Adolescence	Ages 11-15
	Adolescence and Young Adulthood	Ages 14-18+
Social Studies – History	Early Adolescence	Ages 11-15
	Adolescence and Young Adulthood	Ages 14-18+
World Languages Other than English	Early Adolescence through Young Adulthood	Ages 14-18+

According to a study by Park and Oliver (2007), National Board candidates reported a "more positive attitude toward reflection, greater recognition of the goals of their instruction, and deeper insight into their actions of specific students and groups of students" (p. 818). These participants also stated that they developed a habit of questioning themselves about instructional practices and decisions.

Lake (2006) describes the National Board Certification process as containing "the elements that compel the candidates to think, act, and reflect in a profound manner about what they know and what they do" (p. 54). The National Council of Teachers of Mathematics (2005) asserts that "going through the NBCTs process forces participants to do long-term reflection on teaching" (p. 3). Darling-Hammond (2001) states, "National Board's assessment provides a means for teachers to demonstrate not only what they do, but how they reason their way to each decision" (p. 23).

Moseley and Rains (2002) studied teachers who were completing the certification process to determine the most valuable skill acquired from the certification experience. A teacher from Oklahoma said the ongoing reflective thinking and question during the certification process helped her develop a professional routine of reflection in her daily teaching practice. She stated, "It is the depth of my thoughts and the level of my questioning that is making a difference" (p. 46). Another candidate in the study noted, "'National Board Certification isn't only about showcasing what you do well, its' also about facing what you don't do well, creating a self-improvement plan and recognizing that you, the teacher, are a learner, too'" (p. 47).

A study by Kanter, Bergee, and Unrath (2000) revealed that National Board certification participants considered the certification process as a valuable professional

development experience. The researchers surveyed 32 teachers who earned National Board certification. According to the survey, 66% valued the opportunity to reflect on their teaching practice, 56% claimed the certification process was the best professional development in their teaching careers, and 69% reported an increase in self-esteem and credibility among peers.

Candidates have stated that the development of portfolios and analysis of videotapes made them better reflective practitioners. Bohen (2001) conducted a case study of National Board candidates in which he interviewed 13 candidates about the certification experience. The candidates described the portfolio process as a powerful and transformational experience. They also reported a clearer focus on student outcomes. One candidate responded, "I became more efficient by getting rid of the unimportant things that don't make a difference for kids" (p. 52).

In a qualitative study by Feldman (2004), candidates stated the portfolio process served as a road map for the how-to's and whys of teaching. They also reported they felt empowered and self-aware, which they considered to be a life changing experience.

Sato (2000) interviewed a group of 17 California teachers going through the National Board certification process to study the nature of their learning during this experience. The candidates reported that the portfolio process caused them to closely examine how their teaching decisions impacted their students' learning. They stated the portfolio process provided opportunities to experiment with instructional techniques. The candidates also reported an increase in personal and professional reflective thinking practices. They described having a deeper awareness of their personal preferences and values and how the awareness affected their teaching decisions.

Palmer (2012) conducted a study of the types of reflection and the changes in reflective levels of 15 teachers working on portfolios required in the National Board certification process. She examined how the portfolio requirements and mentoring from candidate support providers helped the teachers deepen their levels of reflection. Palmer's findings revealed an increase in the levels of reflection between the first National Board portfolio entry completed and the last entry completed. Evidence from the study suggests that the structure and focus provided by the portfolio prompts and questions, combined with the opportunity to examine teaching practice via videotape, provided a framework for reflection. Most of the participants in the study described the portfolio process as a "powerful learning opportunity" (p. 160).

Lustick (2002) compared a group of National Board certified teachers and a group of National Board candidates waiting to start the certification process. When he asked the National Board certified teachers to reflect on teaching practices, the group demonstrated the ability to articulate, analyze and problem-solve teaching decisions that failed. These teachers assumed responsibility for failed classroom lessons and assignments. On the other hand, the group who had not started the National Board certification process described the failure of lessons and assignments in terms of circumstances beyond their control such as student values and lack of parental support.

Chittenden and Jones (1997) interviewed 10 New Jersey teachers one year after they obtained their National Board certification. The participants were asked if the certification process influenced their teaching practice. The respondents stated the certification experience increased their awareness of their teaching practice and caused them to be more conscious of their instructional decisions. They reported being more

articulate about their personal teaching philosophies and underlying assumptions that influenced their daily teaching.

Deavers (2009) studied five K-12 principals who had earned National Board certifications as classroom teachers. All the participants in the study cited the National Board certification process as a valuable professional development activity that promotes reflective leadership practice. In addition, all the participants indicated that the reflection required to complete the National Board certification process had "carried over to their practice as site principals (p. 118).

Sullivan (2011) interviewed 10 NBCTs teaching in large urban school districts in Illinois. The NBCTs in the study reported that the National Board certification made them more reflective practitioners and that they reflected on their teaching practices on a regular basis. They reported that the National Board certification process taught them to "look at their own behaviors and practices in a reflective manner first and then at the behaviors of their students" (p. 97). They also indicated that they were more receptive to feedback and this attitude helped them become better at providing feedback to their students. Sullivan noted that the self-reflection required for the video analysis was reported to be the most important benefit of the National Board certification process because the it "forces teachers to reflect on their practices" and "become more aware of the individual needs of learners in their classrooms" (p. 112).

In a 2002 study by the Center for Future Teaching and Learning (CTFL), 519 National Board certified teachers from California participated in a survey regarding their attitudes about the certification process. Results of the survey and one follow-up group revealed that 78% of the respondents felt the certification process strengthened their

teaching practices. They noted the certification process taught them to carefully view how they teach, and the experience deepened their knowledge of their content, curriculum development, and goal setting. The survey also revealed that 82% believed they benefited professionally, and 86% believed they benefitted personally. The respondents believed the certification benefited their students but provided no benefits to their colleagues, schools, or districts.

In 1995, 48 teachers from California, Kansas, New York, Michigan, Texas, and Washington participated in one of the first studies on National Board certified teachers and their perceptions of their teaching effectiveness after successfully obtaining the certification (Tracz, Sienty, Todorov, Snyder, Takashima, Pensabene, Olsen, Pauls, & Sork, 1995). The participants completed a self-evaluation before and after the certification process. They also kept personal journals and participated in individual interviews. The researchers compared the pre and post teacher evaluations and discovered a statistically significant difference in perceptions of teaching skills in 37 areas. Some of the respondents reported that their teaching practices did not change after completing the certification process. However, most of the participants stated that completing the portfolio improved their teaching skills. The research study revealed that, although the participants ranked reflection about their teaching as the most valuable skill learned from the certification process, most of the participants reported that they rarely had time to reflect during a typical day of teaching (Tracz, et al., 1995).

Not all of the studies on National Board Certification have been positive. Research by Burroughs, Schwartz, and Hendricks-Lee (2000) concluded that the National Board certification process is predominantly a written discourse based on National Board

standards. They believe the teachers espouse values, knowledge, practices, and language consistent with these standards to ensure successful completion of the certification process. Burroughs, et al. stated "candidates are certified based on their language about their teaching, not their teaching itself" (p. 349). In this study, candidates admitted to matching their instructional practices to National Board standards in order to obtain the certification. In addition, Petty (2002) found that National Board Certified teachers expressed no difference in risk-taking as a result of successfully completing the certification process.

Gaddis (2002) studied the decision-making process that occurs among candidates of National Board certification. He observed and interviewed four candidates going through the certification process and discovered candidate decisions on portfolio entries were based on two criteria: (a) what was best for students and (b) what would lead to successful Nation Board certification. Candidates reported that when differences existed between the two criterions, they made the decision to either scrutinize their teaching practices until they found evidence of the required National Board standards, or they changed their teaching practice to provide the required evidence of the standards. Gaddis purports the National Board certification process does not engage candidates in critical reflection. According to Gaddis, candidates spent much of their time and efforts comparing their instructional practices to National Board standards. However, they did not compare their beliefs, values, or assumptions to these standards. Gaddis asserts that the National Board certification process "does not require candidates to examine, question, or articulate the structure of their beliefs," therefore limiting the depth of reflective thinking (2002, p. 180).

Summary

The literature contains ample evidence of how educators, researchers, and theorists continue to study and define reflective practice in efforts to add to its knowledge-base and improve the quality of education. The review of literature provided a context for determining the meaning of reflective teaching for NBCTs who participate in this study and considerable evidence supporting the claim that the National Board certification process improves reflective practices of NBCTs. In this review of literature, the framework of reflective thinking and teaching included literature on the definitions, theories, characteristics, effects, levels, and developmental tools related to reflective teaching. The review revealed many studies on how NBCTs perceive positive effects of the certification process on their knowledge, skills, attitudes, and behaviors; however, as previously stated, no research exists related to the *levels* of reflective thinking for NBCTs. Van Manen's model of reflective thinking was utilized to study reflective practices of physical education teachers (Ballard, 2006); however, this model has not been used to examine reflective practices of NBCTs.

Information from the review of literature was used for comparing the perceived meaning of reflective thinking and teaching for NBCTs participating in this study. The review of literature also served as a foundation for eliciting and comparing additional information from the participating NBCTs, including: the different types of reflective activities used by NBCTs, the perceived benefits of reflective teaching, and the levels of reflection used.

The next chapter provides an overview and rationale for the research design. The chapter includes the process and criteria for selecting participants, methods for collecting and analyzing data, and means of ensuring the credibility of the study.

3. RESEARCH DESIGN

The purpose of this study was to examine the meaning of reflective teaching to National Board certified teachers who participated in the study. In addition, I compared the meaning of reflective teaching to the National Board certified teachers with the literature on reflective thinking and reflective teaching.

The research design was guided by a constructionist epistemology, an interpretivist theoretical perspective, and grounded theory methodology. I utilized individual interviews, observations, and critical-incident writings to gather data from the NBCTs who participated in the study.

Epistemology: Constructionism

"Epistemology is concerned with providing a philosophical grounding for deciding what kinds of knowledge are possible and how we can ensure that they are both adequate and legitimate" (Maynard, 1994, p.10). Crotty defines epistemology as "how we know what we know" (1998, p. 8). Epistemology is the research philosophy that guides the theoretical perspective, methodology, and methods of a research design.

Constructionism is the epistemology that purports meaning is constructed rather than discovered (Crotty, 1998). Crotty (1998) also notes that constructionism is based on the premise that "all knowledge, and therefore all meaningful reality as such is contingent upon human practices being constructed in and out of interaction between human beings and their world, and developed and transmitted within an essentially social context" (p. 42). Meaning is constructed when individuals interact with the world and with others. According to Schwandt, human beings "do not find or discover knowledge so much as [they] construct or make it" (2000, p. 197).

Because meaning is constructed and not created, truth is neither objective nor subjective. According to Crotty, constructionism binds objectivity and subjectivity. "Constructionism, by definition, permits the researcher to explore the views and comprehensions of the different participants within the subject context and recognizes that each may have experienced a different understanding of the same situation" (Levy, 2006, p. 373). Crotty (1998) states that every individual constructs meaning in different ways, even in relation to the same phenomenon.

Constructionists believe the researcher is unable to maintain a detached, objective position from the subject being studied. "The investigator and the object of investigation are assumed to be interactively linked so that the 'findings' are literally created as the investigation proceeds" (Guba & Lincoln, 1994, p. 110-111). Thus, both the researcher and research participant(s) should be actively involved in the meaning making process and both should construct knowledge rather than being conveyers or receivers of it.

I chose constructionism as the epistemology guiding this study because I believe knowledge is constructed. I believe it is important to focus on how individuals, including myself, understand and give meaning to their own experiences in given situations. I recognize that my own personal feelings about reflective thinking and National Board certification could not be suppressed and were included in the analysis of the research data. I believe the analysis of the data focused on "how" the participating NBCTs perceived reflective thinking rather than seeking to determine "if" and "why" NBCTs were reflective. I recognize that both the researcher and the participants constructed meaning of reflective thinking as we underwent the process of interpreting it.

Theoretical Perspective: Interpretivism

The theoretical perspective is the "philosophical stance" that "provides a context for the process and grounds its logic and criteria" (Crotty, 1998, p. 7). Interpretivism is founded on the belief that reality is constructed socially and is constantly negotiated; truth cannot be grounded on an objective reality (Crotty, 1998). Interpretivists believe that individuals make sense of the world based on social interactions and lived experiences (Guba & Lincoln, 1994). Individuals construct meaning as they engage with the world they are interpreting. Interpretivist researchers assume that they can not separate themselves from what they know; the investigator and the object of investigation are linked (Patton, 2002). Understanding of context is shaped by one's own experiences and background, which cannot be separated from that which is being interpreted (Crotty, 1998). Thus, a researcher's values are inherent in all phases of the research.

Social interaction is important in interpretivist research because interpretivists believe that meaning making is intrinsically social (Denzin and Lincoln, 2000). Truth and reality are constructed through dialogue. In interpretivist research, findings and knowledge claims are constructed as the investigation of a phenomena proceeds. A more informed and in-depth understanding of a phenomena comes from a dialogue between the researcher and the research participants.

The context of the research is also important in interpretivist research. Naturalistic methodology such as interviews and observations are preferred because interpretivist research seeks understanding of a phenomena through non-controlling and non-interfering means of gathering information (Patton, 2002). These methods allow dialogue between the researcher and research participants so collaborative construction of meaning

is successfully achieved throughout the research process. By using flexible, naturalistic inquiry, the researcher is better able to understand knowledge claims that emerge during the research process. The researcher does not have preset limitations on possible outcomes from the research process; outcomes are generated as meanings are constructed (Patton, 2002). Interpretivism requires the researcher to be flexible in considering changes throughout the research process as new insights surface, understanding of a phenomenon deepens, or situations change.

Interpretivist research is concerned with understanding a situation or experience, rather than explaining it. According to Denzin and Lincoln (2003), interpretivism aims to understand human action and grasp the meanings of what constitutes action. Interpretivism "considers understanding to be an intellectual process whereby a knower (the inquirer as subject) gains knowledge about an object (the meaning of human action)" (Denzin & Lincoln, 2003, p. 298).

Interpretivism and constructivism are related since both posit that knowledge and understanding are "contingent upon human practices, being constructed in and out of interaction between human beings and their world, and developed and transmitted within an essentially social context" (Crotty, 1998, p. 42). Both interpretivism and constructivism allow for a deeper understanding of "the complex world of lived experience from the point of view of those who live it" (Schwandt, 1994, p. 118). Because meaning and knowledge claims are constructed, the researcher accepts that "no construction is or can be incontrovertibly right" and the focus is on deeper understanding of a phenomena (Guba & Lincoln, 1994, p. 108). The researcher does not believe in the existence of a purely objective world; understanding is constructed during the research

process. "Findings are literally created as the investigation proceeds" (Guba & Lincoln, 1994, p. 111).

I conducted this study through the theoretical perspective of interpretivism because I wanted to understand the meaning of reflective teaching through the eyes of the participants in the study. In addition, I wanted my research approach to be flexible enabling me to make necessary changes throughout the data collection and analysis process.

Methodology: Grounded Theory

Crotty (1998) defines methodology as "the strategy, plan of action, process or design lying behind the choice of particular methods and linking the choice and use of methods to the desired outcomes" (p. 3).

Grounded theory is a type of qualitative research that allows researchers to construct or build theories from evidence found in data collected. Glaser and Strauss (1967) describe grounded theory as "the discovery of theory from data" (p. 1). Although grounded theory follows a systematic approach to collecting and coding data, it allows flexibility in making connections in order to identify theories generated from data. Researchers utilizing grounded theory methodology do not initiate the research process with a predetermined theory in mind; theories are generated from data that enable the researcher to explain how individuals experience and respond to phenomena or experiences (Glaser, 1998).

In grounded theory methodology, substantive theory originates from the ongoing process of continually reviewing data, refining questions, and re-evaluating changes. The substantive theory is thus applicable to a specific situation or experience. Grounded

theory methodology involves a process in which "data collection, analysis, and theory stand in close relationship to each other…One begins with an area of study and what is relevant to that area is allowed to emerge (Strauss and Corbin, 1998, p. 12). In addition, Strauss and Corbin posit that grounded theories "are likely to offer insight, enhance understanding, and provide a meaningful guide to action" (p. 12).

Charmaz (1994) posits that grounded theory requires researchers to identify emerging theoretical categories to guide data collection as well as structure the concurrent and continuous data analysis process. Glaser (1978) recommends the researcher using grounded theory methodology conduct a thorough review of literature pertaining to the subject being studied in order to identify emerging themes during the data collection phase. Stern (1994) states that themes emerge over time as the research participants share their experiences with the researcher. Theory "emerges as an entirely new way of understanding the observations from which it is generated. It is this understanding that permits the development of relevant interventions in the social environment under consideration" (Hutchinson, 1993, p. 182).

I chose grounded theory methodology because, like the theoretical perspective interpretivism, it seeks to build or construct theory rather than test predetermined theory. Both grounded theory and interpretivism seek to construct a deeper understanding of a phenomena rather than prove a theory about a phenomena. In addition, both grounded theory and interpretivism are flexible and require ongoing analysis in order to construct meaning.

This methodology also offers an analytical tool for handling data from multiple interviews and observations. Grounded theory allowed me to consider alternative

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meanings while utilizing a methodology that is both systematic and creative. The methodology enabled me to identify, develop, and relate themes and concepts in order to construct substantive theories. I do not profess to be an expert about the reflective practices of NBCTs. My primary goal was to observe and interact with NBCTs in order to understand their perceptions of reflective thinking. My secondary goal was to compare these perceptions to literature on reflective thinking.

Because I did not have a predetermined theory on reflective thinking, grounded theory enabled me to identify themes across data, compare these themes to themes in literature on reflective thinking, and use the comparison to construct a deeper understanding of reflective thinking practices among NBCTs.

Primary Method: Interview

Research methods are the "concrete techniques or procedures" used to "gather and analyse" data related to research question(s) (Crotty, 1998, p. 6). Interview was the primary but not the only method for this study. According to Charmaz (2006), interviews allow "an in-depth exploration of a particular topic or experience" (p. 25) because interviews enable the researcher to

- ask questions that go beyond the surface level

- recursively explore a participant's statement or emerging concept

- elicit greater detail or explanation

- delve into participants' personal thoughts, feeling, and actions

- keep the participants' responses focused on the topic

- check participant responses for understanding and accuracy

- monitor the pace of data collection

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- modify the direction of the discussion

- validate participants' responses

- include observational and social skills into the data collection

- show respect and gratitude for the participants

In this study, I utilized interviews as the primary method to gather data because qualitative interviews enabled me to elicit the meaning of reflective teaching to NBCTs who participated in the study. Since "qualitative interviews are more interested in the understanding, knowledge, and insights of the interviewees than in categorizing people or events in terms of academic theories" (Rubin and Rubin, 1995, p. 6), the interview method was most appropriate for this study. Through the interview process, participants had a vehicle for using their own words to describe what is meaningful and important to them. Since interviews are purposeful conversations (Kvale, 1996), participants felt more relaxed in revealing their inner thoughts and beliefs. As a researcher seeking to understand the meaning of reflective thinking and teaching to the participants in the study, interviews allowed me to probe for more details and explore interesting and/or unexpected themes and concepts that surfaced from participant responses.

I also chose the interview method because it is consistent with grounded theory methodology. Charmaz (2006) indicates that interviewing aligns with grounded theory in that it is "open-ended yet directed, shaped yet emergent, and paced yet unrestricted" (p. 28). Grounded theory interviewing allows the researcher to identify themes revealed in interviews, study data to discover new themes, and conduct follow-up interviews focused on themes to "answer analytical questions and fill conceptual gaps" (Charmaz, 2006, p.

29). In addition, Charmaz states that interviews compliment other methods such as observations and participants' written accounts, which I used in this study.

Participants

For this study, I used criterion sampling, which involves selecting "cases that meet some predetermined criterion of importance" (Patton, 2002, p. 238). Using criterion sampling enables the researcher to collect rich information about a topic. For this study, the criteria included participants who a) had completed the National Board certification process, b) had a minimum of three years of teaching experience as required by National Board to participate in the certification process, and c) were currently teaching in a K-12 school. I selected five participants who met the above criteria. In order to find the five NBCTs to participate in the study, I utilized the National Board website which maintains a list of certified teachers by certification subject and developmental area, the year certification was achieved, and the school districts where they are employed. I attempted to establish variation within the sample in terms of gender, race, ethnicity, subject area, school districts (urban, suburban, and rural), and school level (i.e., elementary, middle, and high school).

I first contacted potential participants via email and telephone to introduce myself, provide an overview of the research study, and ask for participation. I explained to each individual I contacted that she would participate in three interviews, one classroom observation, and submit a critical-incident writing. In addition, I explained that participation was voluntary, and participants would be able to drop out of the study at any point. Each participant received a pseudonym to maintain anonymity.

Data Collection

I conducted three interviews with each participant, allowing for cyclical data collection and analysis. Multiple interviews enabled me to look for ideas and key concepts by studying and comparing the data collected from each interview as well as supporting data, identifying and pursuing potential concepts constructed during analysis of each interview and supporting sources of data, and gathering more focused data to answer analytical questions and fill conceptual gaps (Charmaz, 2006).

First Interview

The purpose of the first interview was to gather data to begin the process of answering my primary research question. Charmaz (2006) recommends using a grounded theory approach in which the researcher initially devises broad, open-ended questions about a topic and then elicits from the participants detailed discussions about the topic. Charmaz posits that "open-ended, non-judgmental questions…encourage unanticipated statements and stories to emerge" (2006, p. 26). According to Charmaz, these general interview questions need to maintain a balance of wide yet narrow scope, so they cover a range of experiences yet focus on the participant's specific experience.

For the first interview, I utilized Patton's (2002) interview guide approach, in which I created questions prior to the interviews. These questions focused on collecting data relative to my primary research question: What is the meaning of reflective teaching to National Board certified teachers who participate in the study? The interview questions focused on how the participants define reflective teaching, what the participants learned about reflective teaching during their experiences in the National Board certification process, how they use reflection in their current teaching practices, and if they perceive

reflection as valuable in their teaching practices. See Appendix A for the specific questions to be used in the first interview. I asked the same questions of each participant although follow-up questions varied according to the responses given.

Participants determined the time and location of the interviews based on their convenience. Interviews were recorded electronically. I transcribed the interviews, preserved the words of the participants, and maintained a copy of the original data until the end of the study. Each participant received a copy of the transcript to review for accuracy.

Observation

Prior to the second set of interviews, I observed each participant teaching. The purpose of the observations was to gather data on the participants' instructional practices and interactions with students, which guided development of interview questions on participants' perceptions of their use of reflective thinking and practice. I utilized the detached open-ended narrative approach to observation (Glickman, Gordon, & Ross-Gordon, 2010). When determining what is significant to record, I focused on situations that lent themselves to questions and topics about reflective thinking and reflective teaching. According to Glickman, Gordon, and Ross-Gordon (2010), "observation is a two-part process—first describing what has been seen and then interpreting what it means" (p. 237). Specifically, I studied and recorded the participants' classroom behaviors as they occurred, and then used the second interview to determine if there was any connection between the participants' classroom behaviors and their perceptions of reflective thinking. The notes I took helped me to develop questions for the second interview.

Second Interview

For the second interview, I identified questions and topics based on the analysis of the first interview, data from the classroom observation, and the extant literature. One purpose of this interview was to fill in gaps and clarify concepts and ideas from the first interview. The primary purpose of the second interview was to elicit the participant's perceptions of reflective thinking and teaching as it related to the instructional practices I observed prior to the interview. Questions related to the observation elicited the participants' perceptions about reflective thinking processes they engaged in prior to, during, and after the observed lesson. In addition to asking clarifying questions related to the participants' instructional practices and student interactions observed, I asked the following questions to obtain the participants' perceptions about their reflection before, during, and after the observed lesson and to better understand the participants' perceptions of their levels of reflective thinking:

1. During the preparation of the instructional activities, did you engage in reflective thinking related to the lesson, materials, strategies, student needs, or goals? If yes, how?

2. Did you engage in reflective thinking during the instructional activities? If yes, how?

3. Now that the instructional activities are over, is there anything you would do differently?

4. Do you think reflective thinking had an effect on student outcomes? Explain.

5. Did you have any assumptions related to the instructional activity that were confirmed or challenged? Explain.

Critical-incident writing

Critical-incident writings provide a purposeful sample of participants' experiences of the world in their own words (Patton, 2002). According to Patton, critical incidents "can constitute self-contained descriptive units of analysis," based on the importance of the event (p. 439). The critical-incident essay consisted of two parts: (A) a description of the incident, and (B) a discussion of how the participants perceived using reflective thinking address the incident. Appendix B explains the guidelines for the critical-incident writing, which I provided to participants in advance. Part A of the guidelines is based on Brookfield's (2006) recommendations for critical-incident writing that fosters critical reflection. According to Brookfield (1987), phases for successful critical reflection include:

- recollection of a trigger event

- appraisal of assumptions

- exploration of alternatives to current assumptions

- developing alternative perspectives

- integration of new perspectives into daily practices.

Participants were asked to complete part A of the critical-incident writing at the beginning of the study. I returned part A of the critical-incident writing to participants between the second and third interviews. When I returned part A of the critical-incident writings back to the participants, I gave them part B guidelines, which asked participants to explain their perception of the use of reflective thinking and teaching. Part A of the critical-incident writing guided questions for the second interview, and part B of the critical-incident writing guided questions for the third interview.

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Third Interview

For the third interview, I developed questions based on the analysis of the prior interviews and the critical-incident writing samples. Like the second interview, one focus of the third interview was to fill in gaps and clarify concepts from the prior interviews. The primary purpose of this interview was to elicit participants' perceptions of their reflective thinking to identify and solve problems within the previously described critical incidents. I asked the following questions related to the critical-incident writing:

1. In the critical incident, you describe how you challenged existing practices to improve student learning and success. Tell me your assumptions before, during, and after the critical incident.

2. How did reflection help you clarify these assumptions?

3. At the time of the critical incident, did you examine moral or ethical issues related to the incident? If so, what were they?

4. Do you believe it is important for teachers to question their beliefs, values, attitudes, and behaviors, and assumptions related to their instructional practices and students? Why or why not?

5. How did the reflection you engaged in during the critical incident impact you personally or professional?

Data Analysis

For this study, I used constant comparison (Glaser & Strauss, 1967) to continuously analyze and compare data from interview transcripts, observation notes, and critical-incident writings. In addition, I continuously compared the data to the literature on reflective thinking. Data collection and data analysis was cyclical and iterative. According to Corbin and Strauss (2008), "concepts are derived from data during the analysis and questions about those concepts drive the next round of data collection" (p. 144). Figure 5 provides a graphic display showing how grounded theory data collection and data analysis are cyclical and interactive.

For this study, I used qualitative coding to move "beyond concrete statements in data to making analytical interpretations" (Charmaz, 2006, p. 43). I utilized Charmaz's (2006) grounded theory coding which consists of open coding and focused coding of data. According to Charmaz, "grounded theory coding consists of at least two main phases: 1) an initial phase involving naming each word, line, or segment of data followed by 2) a focused selective phase that uses the most significant or frequent initial codes to sort, synthesize, integrate, and organize large amounts of data" (2006, p. 46).

The first step of data analysis in this study was open coding, which I began immediately following the first interview. Strauss and Corbin (1998) describe open coding as the process in which "data are broken down into discrete parts, closely examined, and compared for similarities and differences" (p. 102). This initial phase of coding was line-by-line, allowing me to begin to identify basic concepts in the data. According to Charmaz (2006), line-by-line open coding requires the researcher to

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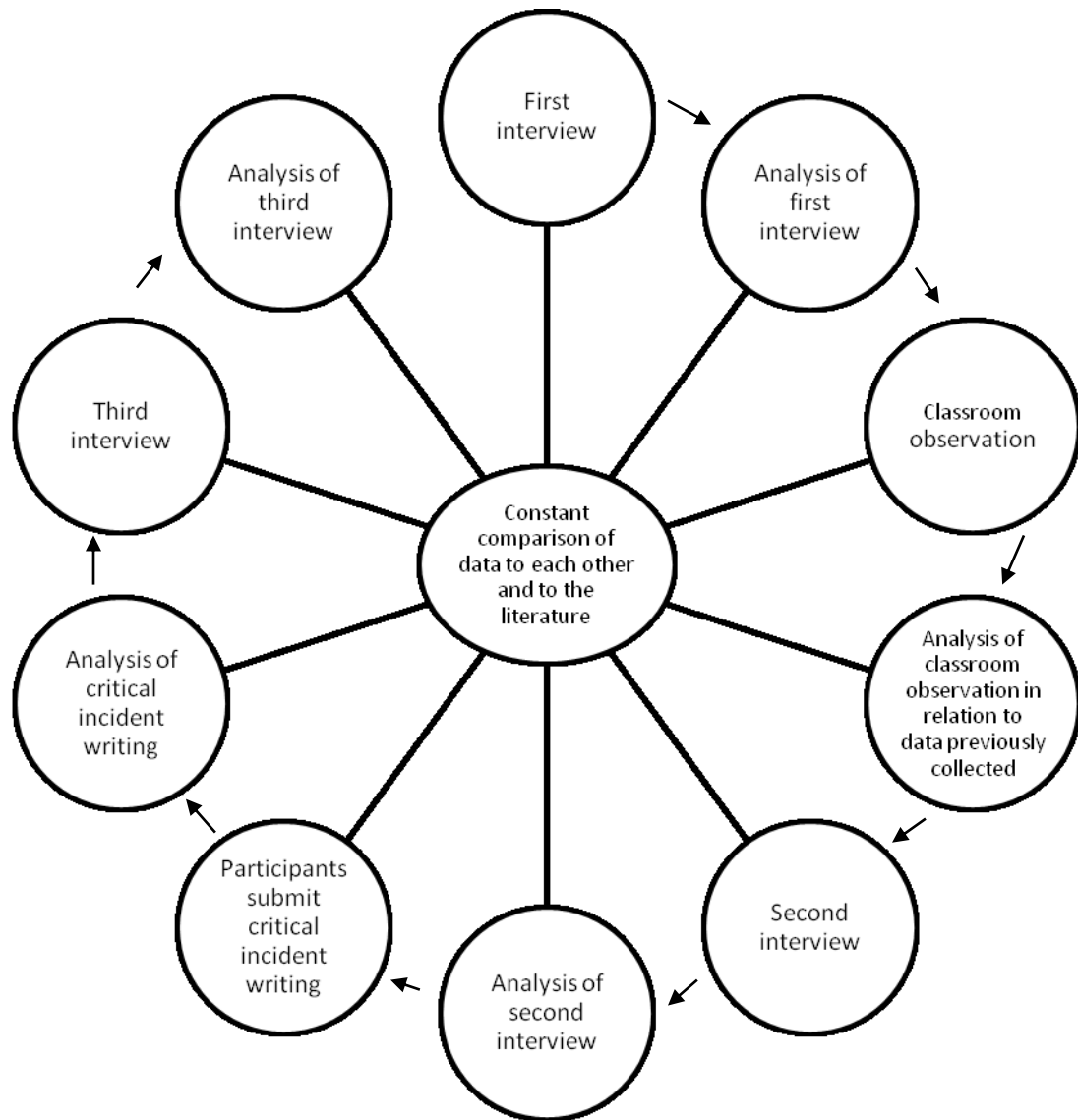
Figure 5. Concurrent Data Collection and Data Analysis

"remain open to the data and to see nuances in it" (p. 50). Although time consuming,

open coding allows the researcher to generate categories and their properties and then

determine how these categories vary dimensionally (Strauss & Corbin, 1998).

Furthermore, open coding allows the researcher to "mine early data for analytical ideas to

pursue in further data collection and analysis (Charmaz, 2006, p. 46).

During the initial open coding of data, and throughout the subsequent coding, I also utilized memo writing, which allows researchers to create more abstract categories from the basic concepts. According to Strauss and Corbin (1998), memos and diagrams force the researcher "to move from working with data to conceptualizing" (p. 218). Memo writing included documenting my ideas about the analysis and interpretation of the data. According to Marshall and Rossman (2011), "the researcher writes his thoughts about how data are coming together in clusters or patterns or themes he sees as the data accumulate" (p. 213). Charmaz (2006) posits that "memo-writing constitutes a crucial method in grounded theory because it prompts you to analyze your data and codes early in the research process" (p. 72).

The process of open coding and writing memos enabled me move to the next phase of data analysis, which was focused coding. According to Charmaz (2006), focused coding requires the researcher to use the most significant and/or frequently used codes to sift through large amounts of data to integrate and refine categories. Focused coding is not linear and often requires the researcher to refer back to earlier data afresh because new data "will make explicit what was implicit" in prior data (Charmaz, 2006, p. 58). Focused coding occurs by (a) comparing data to data, (b) developing new, more general codes, and (c) comparing data to codes to refine them (Charmaz, 2006).

Theoretical sensitivity is important in grounded theory research because it is concept driven (Corbin & Strauss, 2008). The researcher must become immersed in the data in attempt to understand and construct meaning of what the participants perceive as being significant and important about the research topic. In order to become theoretically sensitive to the data, the researcher must concurrently collect and analyze data from

participants. I continued to perform constant comparison until the data was saturated and no new concepts emerged. By the conclusion of data analysis for the primary research question, I constructed my own meaning of what reflective thinking means to NBCTs.

Comparison of Findings to Extant Literature

Throughout the study, review of relevant literature provided continuous focus for this study (Patton, 2002). Corbin and Strauss (2008) recommend reviewing extant literature throughout data analysis because literature can

- serve as a source for making comparisons

- enhance sensitivity of data

- offer descriptive data requiring little interpretation

- offer questions and topics for initial interviews and observations

- stimulate questions, ideas, concepts during data analysis

- recommend areas for theoretical sampling

- confirm findings or identify incorrect or partially explained literature on a
  phenomenon.

To address the study's ancillary research question, I compared the results of my analysis of classroom observation data, the written discussions of critical incidents, and all three interviews *to* the literature on reflective thinking, including the literature on National Board certification and reflective teaching. This comparison allowed me to determine the level of congruence of the literature with each participant's perception of reflective thinking and reflective teaching.

Role of the Researcher

Charmaz (2006) posits that the researcher is not separate from his or her theories but constructs them through interactions with people, places, and research perspectives. According to Charmaz, researchers do not discover data or theories, rather data and theories are constructed by the researcher and the research participants. The researcher seeks to elicit the participants' thoughts, feelings, and perceptions and place them into categories during data collection. During this process, the researcher's own thoughts, feels, perceptions, and questions about the data surface.

I chose the topic of reflective thinking because I believe in the positive effects of reflection in all aspects of one's life, including in the workplace. I believe that reflective thinking leads individuals to become more effective and skilled practitioners in their professions. I recognized my bias and subjectivity regarding the topic, and throughout data collection and data analysis, I strived to reflect on its influence in the research process. I focused on the research questions which sought to identify how the participants, not the researcher, perceived the meaning of reflective teaching and how the participants' perceived meaning of reflective teaching compared to the literature.

Trustworthiness

For this study, I chose triangulation of multiple data gathering methods to increase the validity of the findings (Patton, 2002). According to Patton (2002), the researcher uses multiple sources of data including interviews, observations, and documentation to bring together multiple perspectives. "Multiple sources of information are sought and used because no single source of information can be trusted to provide a comprehensive perspective" (Patton, 2002, p. 306). Patton posits that using a

combination of interviews, observations, and documentation enables the researcher to "validate and crosscheck findings" (p. 306). Because each data collection (interviews, observations, and documentation) has its limitations, using triangulation of multiple data gathering methods increased the trustworthiness of the study because the strengths of one data collection method can compensate for the weaknesses of another (Marshall & Rossman, 2011).

In addition to triangulation of methods, I used member checking to increase the trustworthiness of this research study. Guba and Lincoln (1985) posit that member checking is one of the most critical procedures for increasing the trustworthiness of a study because it allows participants an opportunity to correct errors and challenge what they perceive as incorrect interpretations. Once I transcribed each interview, I offered the participants an opportunity to review their transcripts for accuracy, verify that the transcripts matched what they intended to convey, and add clarifying or supplemental information.

Ethical Considerations

NBCTs in this study volunteered to participate by signing the informed consent form presented in Appendix C that describes the study, the role of the researcher, and the contributions of the participants. These contributions included participation in three interviews designed to determine what reflective teaching means to each participant, one observation for the purpose of demonstrating reflective teaching, and submission of a critical-incident writing that illustrates each participant's reflective thinking process.

The three interviews were conducted at a time and place convenient for each participant. A pseudonym was assigned to participants' data in order to conceal their

identity. Audio recordings of the interviews, email correspondence, signed letters of consent, and transcribed data was stored in a secure manner. Other than myself, the only other individual who was allowed access to the data included my dissertation committee chair. Electronic copies of the transcribed data were stored on the researcher's personal computer and on as USB drive to be accessed and used only by the researcher. Printed copies transcribed data were stored in a locked file drawer until my dissertation was approved and other scholarly writing based on the study was completed.

4. RESULTS

The purpose of this qualitative study was to determine the participating NBCTs'
perceptions of reflective thinking and teaching and compare their perceptions to the
literature on reflective thinking and teaching. The following research questions guided
the study:

1. What is the meaning of reflective teaching to National Board certified teachers
   who participated in the study?

2. How does the meaning of reflective teaching to National Board certified teachers
   who participated in this study compare to the literature on reflective thinking and
   teaching?

The first section of this chapter provides background information about each
participant and describes how each participant perceives the meaning of reflective
teaching. The second part of this chapter compares the participants' perceptions of
reflective teaching to the literature on reflective thinking and teaching. Both sections of
this chapter include data collected from interviews, classroom observations, and critical-
incident writing samples. The purpose of the first interview was to gather data to answer
the research question "What is the meaning of reflective teaching to National Board
certified teachers who participated in the study?" The first interview questions provided a
framework for organizing the participant information in this chapter. Appendices D-H
contain data related to each participant's classroom observation and critical-incident
writing sample. The classroom observations provided a frame for the second interview
questions, which are included in the appendices. The critical-incident writing samples

guided the development of the third interview questions, which are also included in the appendices.

<p style="text-align:center">Participants' Perceptions of Reflective Teaching</p>

Rebecca

Teaching is a second career for Rebecca, who has been a special education teacher for 15 years. Rebecca has a bachelor's degree in psychology and a master's degree in education. She teaches developmental preschool at a suburban elementary school where she incorporates each of her student's individualized education program (IEP) goals with developmentally appropriate educational and play activities. With the help of a teaching assistant, Rebecca's daily classroom instruction focuses on five developmental domains: cognitive, motor, communication, social-emotional, and self-care. Daily instruction includes circle time, directed learning activities, social play, snack time, outside play, and other age-appropriate activities. Most of Rebecca's students have been diagnosed with a form of autism.

Rebecca defines reflective teaching as a process of continuous discovery and evaluation of objectives and goals. Rebecca stated,

I guess reflective teaching would be reflecting on what works and what doesn't. But you have to have a clear idea of where you started and where you're headed to know if it is working or not, if you are meeting goals or making progress.

Rebecca perceives reflective teaching as requiring the teacher to reflect on a variety of components related to instructional practice. She stated that she reflects on individual student needs, goals, outcomes, and behaviors; instructional activities,

methods, and materials; instructional decisions and consequences; and personal beliefs and assumptions. Rebecca stated,

> I hope I reflect on everything. At least I try to. Every activity I pull out, every story and song, I ask myself, "Is it working? Is it meeting the goal I have? Do we just do it because it's cute?" In my position, it is very important to reflect upon children's behaviors and handling behaviors. "Did my response work? Did it have the opposite effect? Does it take several times for it to work?" Those are the kind of things that I think most about and reflect most about with my teaching assistant.

Rebecca perceives reflective thinking as a habit that occurs before, during, and after each lesson. Before a lesson, Rebecca stated that she reflects on the intended goals. Rebecca shared,

> For example if we are learning shapes, I think about what materials I have that will help. I think, "Do I need these materials for so-in-so who is hands-on and would like to manipulate it?" or "Would so-in-so like a book about it because he can do it independently?" So you start with the goal, and then my mode of reflection is determining what I need to achieve that goal.

Because Rebecca teaches preschool-aged special education students, she believes reflection during a lesson should be a necessary component of her instructional practice. Rebecca stated, "I have to stop and say, 'This isn't working.'" She shared an example.

> Last week during circle time, I lost everybody. Not a pair of eyes was on me. I thought, "Okay we are done; let's go to the table and move on to something else." They put away their chairs and came to the table. They were ready and just

over it, so I thought, "I am not going to beat a dead horse. I am not in the mood to fight them or try to draw them back in." If it was something I really needed to accomplish, I would have found a way to draw them back in, but the activity wasn't important and I had lost all of their attention. So I decided to just move on to something else and not force it.

Rebecca perceives reflection after a lesson a critical component of her practice, allowing her to evaluate student learning and set new goals. Rebecca described how she reflects on student performance and work samples, student goals, instructional materials and decisions that did or did not work. In addition, when an instructional practice is ineffective in meeting individual student goals, Rebecca collaborates with her teaching assistant, speech pathologist, physical therapist, and occupational therapist as needed to modify future lessons.

Rebecca identified two tools for developing reflective thinking: collaboration and action research. Rebecca stated that she prefers to reflect with colleagues, including her teaching assistant, the school speech pathologist, physical therapist, and occupational therapist. Collaboration includes discussions about instructional practices and student goals; review of student work; peer observations with constructive feedback; and shared planning, designing, and evaluating instructional materials and curriculum. Rebecca stated,

Even if they don't say anything, I can sometimes figure things out just by talking it out. But I still consider that reflecting with other people. You have to explain so much to someone who wasn't in the room that you might pick up on something that you didn't realize before. I collaborate with a variety of people because all of

my students have an IEP, so they all have a team working with them. So if I am

doing it right, I am keeping in touch with the speech path, the parent, the

classroom teacher. If I am doing it right, I am constantly collaborating with them.

It's valuable because everybody knows something that I don't know. So it is

always good to get multiple perspectives and insight.

Rebecca explained how action research is common practice for her. On a regular

basis, Rebecca performs action research in order to resolve problems. She described how,

after identifying a problem, she gathers and analyzes information about the problem,

including analyzing multiple influencing variables, and then forms and tests a hypothesis.

She explained that she continues the process until the solution resolves the problem.

Student IEPs (individualized education programs) allow Rebecca to document

student progress based on her reflections; however, Rebecca stated that she does not use

methods of recording her reflections such as journaling, narrative writing, or portfolios.

Rebecca perceives multiple benefits to reflective teaching and recommends that

all teachers include it as part of their practice. Rebecca explained,

I think it is essential. You have to reflect on what you are doing and why and how

do you know it is working. Otherwise, what are you doing? You are just singing

songs you like and reading books that you like and doing activities that are cute

because you like them. You need to know that you are working towards an

educational goal and that what you are doing is helping the child make progress

toward that goal. Around here it is millimeters. We don't measure in miles. We

don't measure in feet. We measure in millimeters.

Reflective thinking is not an explicit component of professional development initiatives at Rebecca's school or district. Rebecca stated, "We haven't really had professional development in reflection per se." Rebecca explained that her district's professional development emphasizes Marzano evaluation, which asks teachers "to look at all areas of teaching, including the environment, what you do in the classroom, what you do out of the classroom, and see how effectively you are and if [your instructional practices] are producing learning."

Rebecca achieved her National Board certification in Exceptional Needs Specialist/Early Childhood Through Young Adulthood in 2012. Rebecca perceives the National Board certification process as teaching her to be a more reflective teacher; however, Rebecca believes it is the needs of her student population that guide her reflective practices. When asked if the National Board certification process taught her to be a more reflective teacher, Rebecca responded,

> I think it did to some degree, but I also think being a special education teacher is more what informs my reflection because I have to write a good goal for each student. I have to consider current data and write good goals. I have to measure progress towards those goals and see what works and what doesn't and keep trying new things. So I feel like just the fact that I work with students with special needs is what makes me most reflective.

Rebecca believes the National Board certification process provided training in reflective teaching via an assigned mentor who helped "elicit reflection." Rebecca explained how her National Board certification mentor helped her become more reflective:

One of my mentors who read my entries would write in the margins, "How do you know this?" and "How do you know that?" So finally about the second or third entry I submitted, I would ask myself in my mind, "How do I know this?" I know [my mentor] is going to ask me "How do I know this?" So, I could say, "[My student] needed something to chew on." and [my mentor] would say, "How do you know this?" I would say, "Well, because when I give him something to chew on this behavior decreased or his ability to do this increased." So instead of me saying what he needs, I had to say this is why he needs this. She would give me feedback. She was very careful not to tell me what to write or direct my content but just to ask questions like "How do you know this?" or "What are you going to try next?"

Although Rebecca indicated that being a special education teacher requires her to be a reflective practitioner, she also explained that the National Board certification process led to improved reflective practices.

I think National Board helped me be more reflective in the big picture kind of way because I had always been able to turn to my teaching assistant and say, "Why do you think he is doing this today?" or "Why did he quit liking that?" or "Why does he only do this during circle time?" But that was all little picture type stuff. And big picture stuff that National Board helped me with is more of what is my big goal for him. I mean why do I do circle time? Let's say he's bored during circle time; then why do I do it? And it's making me think [what] are the big things I am doing in here, the big goals . . . reflecting on that kind of thing.

Rebecca does not perceive National Board certification as differentiating her from teachers who have not gone through the process.

> I think not everyone who goes through the process takes it to heart and continues it forever. Some people go through the process and get the certificate and afterwards keep doing what they like to do, but I don't think that is the majority. I think for most people it helps you grow as a teacher. I think I am more reflective than most teachers, and I'm not sure if it is because I am a special ed teacher or National Board certification or both. . . I have a small number of kids, and the nature of my job is that I am constantly reflecting on what is working because the "I" in IEP stands for "individual." You may be doing the same activity, but the goal for each kid is different. Yes, National Board helps if you let it change you and if you have mentors who are good reflectors that reflect with you. Then National Board will change you. But if you just want the certificate to get the stipend—not everyone lets it change them.

Laura

Laura is an elementary teacher with over 25 years teaching experience and is currently a Title I reading teacher at a rural elementary school where she provides reading instruction to grade three through six students in the areas of reading foundational skills (phonemic awareness, phonics, fluency), reading literature, reading informational text, and language/vocabulary acquisition. In addition to providing individual, small group, and whole class instruction, Laura works closely with peers to create differentiated instruction for struggling readers across classrooms and grades. Laura has a bachelor's degree in education and a master's degree in reading.

Laura defines reflective teaching as a continuous process of inquiry, questioning, and discovery. Laura explained reflective teaching as "thinking back about what you as a teacher did to create a particular outcome with the students; then judging your own performance and making decisions based upon that judgment."

Reflective thinking in embedded in Laura's everyday instructional practice. Laura indicated that she reflects on her instructional decisions, curriculum, materials, assumptions about her students and learning, student progress and goals, student work and performance, student motivation, and alternative solutions to problems. She stated, "I reflect to improve student outcomes. I want to pinpoint specific causes that improve or discourage learning and then act upon it. No one reflection is more beneficial than another."

Laura believes reflective teaching requires her to reflect before, during, and after implementing a lesson or activity. According to Laura, reflecting on a lesson or activity ahead of time enables the teacher to carefully consider the objectives for student learning and strategies for checking for student understanding. Successful instruction begins with concrete objectives for student learning. Before the instruction, Laura asks herself, "What do I want my students to learn? What resources should I use? What challenges do I anticipate? How will I check for understanding?" She described how it is important for her to start with identifying which concepts and skills are most important for her struggling readers. She then asks herself why these concepts and skills are important, allowing her to omit unnecessary elements and add relevant elements as necessary to meet the diverse needs of her student population. She stated, "I work with struggling readers, and reading and comprehension can be frustrating for them. I want them to enjoy

reading and understand the text. I have to plan carefully how I can best motivate and engage my students. I have to think about which strategies are best."

Laura believes reflecting during a lesson plan is necessary and requires her to be flexible and ready to adjust her lesson to meet students' needs. Laura noted, "I often need to make adjustments." Laura explained how she uses student work and performance as a guide. In addition, she stated, "I have to watch students' verbal and non-verbal actions. This allows me to determine if students are engaged, understanding, or confused." After the lesson, Laura asks students to work on assignments in class as she takes the opportunity to walk around the class and perform mini conferences with students to check for understanding and provide additional support. Laura believes effective teachers reflect after a lesson or activity. She explained,

> After the lesson, I think about what went well and what didn't work. I think about the objective of the lesson, which I post daily on the board for students to copy in their assignment books. I ask myself what are my students still struggling with and what do I need to reinforce?

Laura indicated that she uses information from her one-on-one discussions with students as well as student work to determine the success, failures, and needed adjustments after each instructional activity.

Laura utilizes several tools to aid in her reflective teaching. Laura uses journaling to cultivate her reflective thinking. In addition, she writes her reflections on sticky notes, in her lesson book, and in her teacher's edition instructional materials. Laura also uses action research to foster reflective thinking. She indicated that throughout the school year she seeks to identify relevant problems, identify personal theories and beliefs about the

problems, gather data, identify alternative solutions, and implement courses of action. Laura noted that collaboration is an important component of reflective teaching, and she seeks opportunities to collaborate with peers, including participating in peer observations.

Laura believes the benefit of reflective teaching is improved instruction and student learning. Reflective teaching enables Laura to think about the impact and consequences of instructional decisions and actions as they relate to student learning and outcomes. Laura believes reflection can increase the repertoire of instructional strategies that are necessary to teach struggling readers. Laura stated, "[Reflection] is an honest look at your practice in order to improve. Looking honestly at your practice leads to positive changes and professional development."

Laura is the one participant who works at a school and district that provides professional development on reflective teaching. She described a district-wide professional development initiative on using reflection to improve student learning. She explained an activity from the professional development program in which teachers were asked to identify their beliefs, how these beliefs are reflected in the classroom, and how their beliefs and actions impact students. Each teacher was asked to share this information with their peers via a 3x4 grid. The teachers were encouraged to hang the grid in their classroom. Laura said, "Mine is still there." She indicated that grade-level teachers then met regularly to reflect and plan together. She also described how her school fosters collaborative reflection. She provided an example of grade-level teachers collaborating and sharing reflective teaching practices with a goal of selecting the best reading phonics program for the elementary level.

In 2011, Laura earned her Generalist/Middle Childhood National Board certification. At the time of the certification process, Laura was teaching fifth grade. Her portfolio entries were related to her social studies class at a rural school. She did not pass the certification process the first time and had to redo one of the portfolio entries.

Laura believes the National Board certification process taught her to be a more reflective teacher. She stated, "After months of intense reflective thinking about my practice and student learning, [reflective thinking] became embedded in my practice. Years later, it is still a habit." She perceives the National Board certification process as one of the best professional development programs for fostering reflective teaching. She indicated the quest to pass this entry caused her to think critically about her instructional practices and student learning, and she "became obsessed" with learning how to best relay subject content to her students in a meaningful way. At the time of the National Board certification process, Laura was teaching fifth grade social studies, but she explained that she applies the same reflective teaching strategies she learned during the certification experience to her current reading class.

Laura indicated that the experience of the National Board certification process teaches participants to be more reflective due to the portfolio process. She stated that the process required her to critically examine her practice. Specifically, the portfolio submissions mandated that she critically evaluate actual lessons and student learning experiences. Although she was not assigned a mentor during the National Board certification process, she said the experience of the portfolio process taught her to be more reflective because it required her to analyze her assumptions about student learning, the subject she teaches, and her instructional decisions and actions.

Laura is uncertain if National Board certification differentiates her from other teachers who have not experienced the certification process. She stated, "I know three other NBCTs and they are all reflective thinkers; however, I know other teachers who practice reflective thinking as well." Laura stated that she mostly collaborates with two other NBCTs because the problem-solving discussion they have "includes genuine back and forth conversation, and often we come to conclusions together."

Sandy

Sandy is an English and AP English teacher at a rural high school. She has a master's degree in English as a second language and is alternatively certified as a secondary English teacher. Prior to teaching high school English, Sandy taught college-level ESL courses. Sandy has taught middle school and high school for 10 years. She teaches tenth-grade English and eleventh-grade English AP and holds the position of high school and middle school English department head in her district.

Sandy defines reflective teaching as a continuous process of self-questioning, learning, and discovery focused on student outcomes. Sandy perceives reflective teaching as an ongoing problem-solving inquiry that always focuses on student needs, learning, and development. She explained,

> [Reflective teaching] is when you teach a unit, a lesson, a concept, an idea and
> then you look at the outcomes. You say, "I don't think they quite got what I was
> trying to teach them." So, based on student outcomes, you ask yourself, "What do
> I need to do differently?" At the same, you think, "Gosh, those kids got it. That is
> fantastic. How can I do this in my other classes?" You are constantly asking,

"What did I do differently from other units that they got and how can I use this in the future?"

Sandy perceives that reflective teaching requires the teacher to analyze all aspects of instructional practices and student learning. Reflective teaching should include careful consideration of how students learn and how best to relay subject content to students (e.g., strategies, materials, and resources). Sandy perceives reflective teaching as asking both the "why" and "how" questions about instruction and student learning. Sandy identified reflecting on student work as a key component of her reflective teaching practices.

For Sandy, consciously reflecting about a lesson occurs both during and after the lesson. Sandy indicated that she does not consciously reflect on a lesson before she teaches it. She stated, "Only if I have used a similar lesson before, I think, 'Hmm, it worked well with this group last year but not with this group. Let's see if it works well this year.'" Sandy indicated that she reflects during the lesson. She stated, "When I see the looks on their faces that say I really don't know what you are talking about, I stop and find an alternate way of teaching it." Sandy gave an example of reflection-in-action when she was recently teaching her English IV students about satire. She explained, "As we were discussing it, I could see that some of my students were not going where I needed them to go, so I was able to pull up a video from Saturday Night Live to provide them an example they could connect with." Sandy indicated that reflection after the lesson is also common practice. Like other participants in the study, Sandy places sticky note comments in her lesson plan book and on assignments. In addition, she reflects on student

work to determine if adjustments to lessons and materials are needed in order to achieve the desired student outcomes.

Sandy uses a variety of tools to help develop her reflective teaching practices. She indicated that she uses collaboration most often. She collaborates with students to review their work and check for understanding and she also collaborates with other teachers to share insights and ideas. Sandy indicated that, although she is constantly reflecting on her instructional practices, she does not journal her reflections. Instead, she prefers to use sticky notes to document her reflections. She creates electronic notes about student essays, which she believes is a form of written reflection. She stated, "If you think about it, a lot of my reflection is the comments I make on students' papers. I am able to see what many have not understood. I can see if there is a common theme for student misconceptions, and I can modify my lesson plan and reteach concepts."

Sandy indicated that although she reflects with her peers, she prefers to self-reflect first. She stated, "I want to reflect by myself first. I'm not a perfectionist, but there is a part me that knows someone is going to find something wrong with what I do so I want to make sure I have it all in order first."

When asked if she perceives benefits to reflective teaching, Sandy stated, "That is obvious — student outcomes." She believes reflective teaching leads to improved student learning. She believes reflective teaching keeps instructional practices from becoming stagnant and routine, and keeps teachers focused on student needs. She shared,

Students will benefit from teachers that reflect. If you simply go just by the lesson

plans that you wrote three years ago or ten years ago, you are making it easy on

yourself but not benefiting your students. We have to reflect, and we have to

understand every single student. If you do not reflect on what you do, you will not have successful student outcomes.

Sandy's district does not have professional development on reflective teaching practices. However, Sandy indicated that she tries to model reflective teaching as a department head. Sandy meets regularly with other English teachers in her district to elicit multiple perspectives and solutions regarding instructional practices and student outcomes. She stated that she works with "earlier level teachers" to plan, monitor, evaluate, and modify their instructional practices to meet student needs. As department head of the middle and high school English department, Sandy mentors four teachers.

In 2013, Sandy earned her National Board certification in English Language Arts/Adolescence and Young Adulthood, and she is the only high school and middle school NBCT in her district. Sandy completed the National Board certification in two years. She stated that she doesn't regret taking the extra time to finish the certification process because at the time she was a working single mother raising three daughters. As part of her National Board certification process and in her current instructional practices, Sandy prefers to include social, political, ethical, and cultural topics in her instruction and materials. She described one of her video portfolio entries:

> I took a look at teaching creation versus evolution in high schools. Kids were able to do research on the topic and present an effective argument to the class. I was able to use a controversial topic [in rural Oklahoma] and get the students to discover how to use logic to support their argument and opinions. I still tend to do this today.

Although Sandy indicated that the National Board certification process helped her become more reflective due to the requirements of the portfolio, she stated that she mainly credits her teaching experiences rather than the National Board certification process for making her a more reflective teacher. For example, Sandy indicated that mentoring other teachers as the department head as well as mentoring student teachers each year has led her to be a more reflective teacher. She explained,

I have my student teacher put her lesson plans and assignments in a binder along with research supporting the lessons. Then I have the student teacher add sticky notes with comments about the lessons, assignments, and research. The sticky notes identify what worked and didn't work and why. So by teaching reflection, I have become more reflective.

Sandy noted that the National Board certification provided training on written reflection. She attended multiple workshops during the certification process. She stated that getting started with the portfolio process, specifically deciding on a topic to demonstrate the five core propositions and provide the required written reflective analysis, was the most challenging part of the certification process. She stated that at one of the workshops, mentor NBCTs shared portfolio samples with the candidates and as a group they analyzed the samples to ensure an understanding of the portfolio component and develop ideas for their topics. She shared, "I think there could be a better process. The workshops were focused on writing reflectively rather than teaching or thinking reflectively." Sandy indicated that perhaps she struggled with reflective teaching because she was never taught reflective teaching skills in college. She did not receive a degree in education and stated that perhaps reflective teaching was taught in the College of

Education but not in the College of Arts and Sciences. Sandy stated that it was the fact that she had to think reflectively in order to complete the portfolio process and "write 30 pages of reflection" that taught her to be a more reflective teacher. She noted that at first she selected her AP English students to be the subject of her portfolios and did not pass. She then changed the subject of her portfolios to her regular education English class which showed "a bigger difference in their learning," aligning with the five core propositions concerning what effective teachers should know and be able to do. As for whether the National Board certification process provided a professional development opportunity for reflective teaching skills, Sandy stated, "I can't recall anything that I learned from the workshops that I used in my portfolios or use today. I use more from my AP summer institutes than I use from the National Board training."

Sandy believes the National Board certification process differentiates her from other teachers who have not gone through the process. She indicated that the experience taught her to focus on student needs, learning, and development. She stated,

> I know this negates what I said earlier about the National Board certification process not teaching me to be more reflective. But, I am constantly changing the way I do things based on student interests, engagement, and outcomes. Each year, I have to make changes to units based on the students I have in class. So, does it differentiate me from other teachers? Yes, I think so. It makes me a better teacher.

She indicated that it is more important to teach students to be lifelong learners than it is to teach them to pass an end-of-year exam mandated by the stated. She indicated that she has high expectations for her students, which shows in the assessments and

activities she assigns and the way she grades. "I want my students to be prepared for college and careers."

Helen

Helen has a bachelor's degree in education and has taught middle school and high school English, journalism, and creative writing for over 25 years. She currently teaches English and AP English at a suburban high school, where she has taught for three years after transferring from a rural school district.

Like other participants, Helen defines reflective teaching as a process of continuous discovery and evaluation of student objectives and goals. Helen defined reflective teaching as "thinking back on what worked, what didn't and what would I do differently next time." Helen stated that reflection is critical to gaining a deeper understanding of her instructional practice and improving her teaching effectiveness. "It's a daily habit." Helen reflects on lessons, instructional materials, student performance and work, and communication with students.

Helen believes that in order to improve the quality of her instructional practices and improve student learning, reflection should occur before, during, and after a lesson. Prior to an activity, Helen reviews notes, from both herself and her students, identifying what went well and what changes should be made. She then makes needed changes before utilizing the activity again. She described reflecting during a lesson: "There have been times when I thought 'this just isn't going the way I thought it would.' At that moment, I have to decide if it is worth it to redirect or scrap it completely." When it comes to reflecting after a lesson, Helen involves her students. For example, it is common for Helen to create "exit sheets" in which she solicits advice from students

including what went well with the lesson or assignment, what should be changed, what was easiest, what was challenging, and if the lesson was meaningful and relevant. She uses this information to guide future lessons and assignments. She explained,

> Just yesterday, as a matter of fact, I finished a research paper process with my seniors, and I had them answer questions about their experience and present them orally with their research paper. Were there enough resources? What was the easiest part? What was the hardest part? And then the last question was, what is your advice to implement next year for me, for other students, for themselves, because many of them are going to college. If you were going to do this again, what would you do differently?

Helen uses multiple tools for fostering reflective thinking. She indicated sticky notes allow her to quickly document reflective thinking and these notes can be found on her desk, in her lesson plan book, on archived tests and worksheets, student artifacts, etc. The notes include comments such as "they had trouble with number 5," "reword the last essay question," "check for understanding here." In addition, Helen indicated that she uses collaboration to reflect. For example, she asks students to provide feedback about her instructional practices. Feedback includes effectiveness and relevance of instructional materials, activities, and assignments. At the end of the school year, Helen provides her AP students with an "exit ticket" in which they can rate her as a teacher, which she uses to improve her practice. During her National Board certification renewal process, Helen utilized social media such as Facebook queries to solicit information from former students regarding the effectiveness of a senior assignment. She indicated that she had 95 messages from former students and parents providing feedback. She then used the

constructive feedback to make needed changes to the assignment. Helen stated, "Asking for multiple perspectives has some risks, like making you feel vulnerable to some feedback, but I'm okay with negative feedback. That's how you know where you need to improve." In addition to utilizing student collaboration as a tool for reflective thinking, Helen also collaborates with peers at her school and in other districts. She shared, "It is nice to talk to people who have different experiences. I can bring something new to the table, and they can, too."

Helen perceives reflective teaching as having many benefits, including improving student learning and fostering personal and professional growth. She stated, "You can always learn something new about yourself, about your students, and about what you are doing."

Helen indicated that her school and district do not have professional development that teaches or encourages reflective teaching. Although she believes it would be beneficial, other professional development initiatives are a priority. Helen stated,

> I am on the professional development committee at my school and I would like to suggest some of those types of things but we are so busy jumping through hoops to whatever is the latest changes in testing and what we need to do for A-F report cards.

In 2005, Helen received her first National Board certification in English Language Arts/Adolescence and Young Adulthood, and in 2015 she completed her renewal certification in the same area of expertise. She was working on her renewal certification at the time of her participation in the present study.

Helen perceives the certification process as helping her become a more reflective teacher. She explained,

It made me look at everything I do in a different way. I had taught for about 10 years before starting the certification process, and I had never really stopped and thought about what I was doing. Was it effective? Why did I do it? It is so weird because it didn't even dawn on me. It was just you look at this unit and get through the next unit. What am I going to do after that instead of stopping and going why am I doing this? We have the PASS objectives in Oklahoma, the common core state standards and that dictates what you do, but was it effective? And I wasn't looking at that.

Helen believes the National Board certification process provided her the experience to become more reflective but did not provide explicit training. She explained,

I don't know if it [the certification process] provided training per se because it is your own professional journey, and reflection is such a huge part of it. So yes, I guess it provided the experience. Just not specific training in how to do it.

Helen explained that the first time she went through the certification process she was the only teacher in her district to pursue the certification and there were no other NBCTs to provide guidance. She stated that she attended two separate workshops in which participants received information about the required components of the certification process. Before leaving her rural school district, Helen mentored five teachers in her district who were participating in the National Board certification process. These five teachers successfully achieved the certification process. Helen stated, "It was a pay-it-forward kind of thing. Another big part of the [certification] process besides

reflection is helping other people become certified." Helen decided to renew her

National Board certification at the end of the ten-year period because she felt she had

worked too hard to lose that status. She said, "I don't want to be a former National Board

certified teacher." At the time Helen received her first certification in 2005, her district

offered NBCTs a stipend, but there is no longer a stipend. Helen admitted that the

renewal certification process took less time than the initial certification process, "but it

was still hard."

Helen perceives the National Board certification process as differentiating her

from other teachers who have not gone through the certification process. She described

talking to her assigned student teacher at the end of a classroom observation:

I just found talking to her that going into teaching you don't think about changing

the world but you have to think about everything that you do and why you do it.

You have to think back on it, and not everybody does that. And I was guilty, too.

Like I said, when I first started teaching I was like, "I have to hurry; I have to get

through this before Christmas break; I have to focus on planning it out," not

stopping to think about "What did we learn from this? How can we grow from

that?"

Helen also explained another example of how the National Board certification

process differentiates her from other teachers who do not have the certification process

experience. She stated,

Through National Board, I learned that everything needs to measurable. It needs

to be measurable to me, where I can say, "Is there growth? Did it work?" But it

also needs to be measurable for student success. I check for understanding more

than I used to. Instead of the blanket statement "Are there any questions?" I really

step to each student and talk to them.

Ramona

Ramona is a middle school English language arts teacher and has taught seventh

grade for over 20 years. She has a bachelor's degree in education and a master's degree

in reading. She currently teaches seventh grade English language arts at an urban middle

school. Besides teaching seventh grades standards for reading, writing, and speaking and

listening skills, Ramona believes that teaching students to be lifelong learners is

important. Ramona encourages students to take ownership of their learning and allows

students to redo any assignments for which they want to demonstrate a better

understanding of a concept or skill. In addition, her daily curriculum includes teaching

and assessing organization skills. Her students are required to maintain a daily agenda

and a notebook with ELA resources. "At the beginning of the year, so many times

students ask what they are supposed to do again and again, and I want them to own their

education and be proactive and not wait for someone to hand it to them. They need to be

responsible for their own education."

Ramona defines reflective teaching as "an organized process that involves

collecting, recording, and analyzing thoughts and observations as a teacher, as well as

those of students." According to Ramona,

> It is a practice that is done daily, and is never completed. I think too, reflecting
>
> makes me braver in the sense that I'm not as worried about taking chances to try
>
> new things and students being involved. I feel like reflecting makes me more
>
> goal-oriented on student learning.

Ramona reflects on all aspects of her practice, including lessons, activities, assignments, instructional materials, student performance, student work, goals, expectations, etc. One unique aspect of Ramona's reflective teaching includes doing all student assignments prior to having her students do the assignments. She explained,

Everything I ask [my students] to do, I do myself . . . as I am doing it and get to my end goal of what I am expecting, it really forces yourself to think outside the box. If I don't spend time thinking about all the different ways they can misinterpret something — they will ask some of the most off the wall questions that you have to be able to answer. So when I am doing the assignment myself, I am thinking about some of the misconceptions that they might have and how I can avoid those.

Ramona perceives reflective teaching as fostering student learning. She explained, "My goal is: I want my students to be able to learn and carry that knowledge forward." Ramona engages in reflective thinking before, during, and after instructional lessons, activities and assignments. Ramona spends significant time reflecting before teaching. She explained,

During the summer, I spend time looking over my notes from previous years and get a timetable mapped out before school starts. This past summer I went through my notes. During the school year, I pay particular attention to the ideas I had for improving the lesson, like the things I didn't like about the lesson, and how I think the current students will handle the material. I try to adjust the activities to meet the diverse needs of current students. I think about what background they already have to bring to the lesson.

Ramona stated that she engages in reflection during a lesson, although she spends more time reflecting on the lesson prior to teaching it. She stated,

I would say that reflecting during the lesson is a weakness of mine. I do it by reading students' faces and body language as the lesson is taking place and adjust accordingly. I also adjust things between classes and lessons. This is the area I really don't record, but I will jot something down if it makes a big impression.

Ramona shared that reflection after a lesson is critical to improving instruction. She explained,

[Reflecting after a lesson] is my area of strength. At the end of each day, I look over my sticky notes and take the time to write my thoughts neater and in depth (where needed) for future use. I record how I feel the lesson went, where it needs to be tweaked, and who or where I could go to as a resource to improve.

Since obtaining her National Board certification, Ramona has experimented with recording her reflections about her instructional practices. Her choice is journaling via sticky notes. She explained,

I have found placing sticky notes in my lesson plan book works best. I use a large over-sized appointment book. One week takes up two pages; this is where I jot down lesson standards and notes that I rewrite from sticky notes used in the past. For example, I may make a note to myself to really emphasize something particular that students had trouble with in the past. It also offers plenty of space for me to add current sticky notes about my thoughts too . . . I think all educators reflect, but many do not take the time to record it. It is the records that matter most to me. At the time of the reflection, as educators, we think we will remember

something important for the next time we teach the topic, but often a year goes by and we are more than likely going to forget.

Ramona prefers to self-reflect rather than reflect with colleagues; however, there are times in which she collaborates with peers. She stated,

I always self-reflect first. Since it is my classroom, I feel accountable to know the material. Plus, we are our own hardest critique. I want to know how I feel about something before I share my thoughts; mainly to save time, but reflection is private too. I do like to visit with colleagues in my department, but there isn't always time. I find reflecting with peers outside of my department difficult.

Ramona unreservedly recommends reflective teaching practices to other teachers and sees many benefits to consciously reflecting on instructional practices. She explained,

There are many benefits to taking the time to reflect. The main reason is to improve teaching practices. As a lifelong learner, I am never done with learning. There is always a better way to teach children, especially because every student and every year is different. I highly recommend taking the time to reflect before, during, and after teaching. Not just on the lesson or content itself, but with classroom management too.

Ramona's school and district encourage reflective teaching but do not provide professional development explicitly for teaching reflective thinking. Ramona stated,

I've heard in professional development meetings across the district that it is good practice to reflect, but I've never heard instructions on how to go about it. Teachers are not required to show documentation of any kind of self-reflection.

Unfortunately, I think this vital tool is overlooked. We are asked to fill out an exit slip before leaving a professional development workshop where reflection is asked. These exit slips are part reflection and part rubric. I have been asked to reflect on practices within my classroom and school in the past, but again, was never asked to provide documentation of any kind. It is just my opinion, but I think reflection is a practice that is taken for granted that teachers automatically know how to do. In reality it is a skill that needs to be practiced every day in order for it to work correctly.

In 2010, Ramona earned her National Board certification in English Language Arts/Early Adolescence. She said she was inspired to sign up for the National Board certification process because teachers that she admired and respected at her school and in her district were NBCTs. She remembers being impressed with the way the NBCTs at her school were able to "validate everything they said." It was during the National Board certification process that Ramona said she realized that she also needed to pursue a master's degree in reading. She noted that when her National Board certification expires in 2020 that she will renew it even if it means having to pay for the fees without support from her district.

Ramona indicated that the experience of the National Board certification process showed her how valuable it is to reflect on her instructional practices. Her daily reflective thinking includes "beginning with the end in mind for each lesson." She explained, "I know ahead of time what I am going to do to teach the lesson, how I will know students get it, what to do if they don't get it, and what to do next when they do get it."

Ramona explained that the National Board certification process did not provide explicit training regarding how to be a reflective teacher. She stated that the required portfolio process in which teachers describe and analyze their instructional practices and student learning mandated reflective thinking. However, no specific training on reflective teaching was provided. She shared,

> I don't think [the National Board certification process] provided instructions or any kind of training on "how" to [reflect], but it was an essential skill necessary in order to meet the requirements. I found myself reflecting constantly about so many areas that I was forced to take notes in order to remember everything. In fact, it was so constant that it became a habit. When I started seeing how much it helped with my lesson planning, classroom management, and student engagement, I stuck with it.

Ramona indicated that her focus during the National Board certification process was on differentiating instruction for her diverse student population. She stated that looking at her students as individual learners required her to think about her assumptions and redirect her instructional practices. She explained,

> Once I figured out how students learned best I geared my teaching instructions around them, not me. I found that once I differentiated my instructions based upon my students' needs, I had fewer and fewer students who needed remediation or time spent on re-teaching a concept or skill. Every day, I try to use differentiation in my instruction. After going through the National Board process, I find I provide more opportunities for students to have more choices.

Ramona believes the National Board certification process differentiates her from other teachers who have not gone through the National Board certification process and she recommends the experience. She explained,

I would have to say after going through the process I am much more reflective. It really showed me how important it is to understand the purpose of each lesson. Reflecting forces me to think about what I want students to learn, how am I going to know they learned it, what am I going to do for those who already know it, and what I need to do about those students who didn't get it. It becomes a habit to have this kind of thinking.

Comparison of Findings to Literature

This section of the chapter compares the perceptions of the participants regarding reflective thinking and teaching to the literature on reflective thinking and teaching. The conceptual framework used for the comparison includes: major theories of reflective thinking, general characteristics of reflective teaching, positive effects of reflective teaching, levels of reflective thinking, reflective thinking and CBAM, and tools for developing reflective thinking.

Dewey's Theory of Reflective Thinking

All five participants' perceptions of reflective teaching align with Dewey's theoretical framework of reflective thinking. First, Dewey believed that reflection enables teachers to plan according to an ends-in-mind. Each participant described reflection as having a similar end-in-view — a focus on student learning. Rebecca described reflection as having "a clear idea of where you started and where you are headed . . . if students are meeting goals and making progress." Laura described reflective teaching as "starting

with a desired student outcome in mind." Sandy explained that reflection requires a "focus on student outcomes." Helen described the importance of reflecting on instructional practices so that "everything you do leads to measurable student growth." Ramona indicated one reason she reflects on her practice is that it "makes me goal-oriented on student learning."

In addition, the participants described the process of reflection as starting with a problem or inquiry. According to Dewey, reflective thinking starts with a "state of perplexity, hesitation, doubt" (1933, p.17). Each participant provided examples of reflective thinking that was initiated by an awareness of a problem and ended with a deeper understanding. For example, Rebecca described a toilet-trained student with autism who refused to use the bathroom at school. The recognition of this problematic situation led Rebecca to a reflective process of gathering information about the problem, analyzing influencing variables, and forming and testing hypotheses to resolve the issue. Laura described how she noticed that in November of the school year her sixth-grade class of struggling readers seemed to dislike all reading activities. This led to her reading aloud *Black Beauty* as students followed along so they could experience "a taste of why people love to read." Sandy described how her tenth-grade English students had dazed expressions as they read aloud Shakespeare's *Romeo and Juliet,* so she reflected on ways to engage students and also help them comprehend the archaic language. This led to her displaying a contemporary version of the play next to the original play. Helen explained why she paused to reflect on an unsuccessful student product. She noticed that her tenth-grade students were not reading their books for the assigned book report; instead, they were cheating. She asked herself, "Am I teaching students to comprehend good literature,

or am I teaching them how to cheat on a book report?" She explained that she omitted book reports from her instructional practice and implemented book talks where "students read novels together and have conversations about what they read." Ramona described a seventh-grade student who gets easily aggravated and impatient when it comes to learning new concepts. This problem initiated a reflective process in which Ramona had to apply ideas and strategies to a problem for which there was no obvious solution.

All the participants described reflective teaching as being similar to Dewey's theory of reflective thinking in which the teacher engages in the "act of search or investigation directed toward bringing to light further facts which serve to corroborate or nullify the supposed belief" (Dewey, 1933). For Rebecca, many of her preschool students are nonverbal or unable to articulate their instructional needs. Rebecca explained, "I feel like reflection is something I do every day." At the start of the school year, Rebecca creates individual student goals and individualized education programs. From that point, every day is a ritual of investigating her practices, beliefs, and established goals and then trying different approaches, incorporating multiple perspectives, and assessing student progress.   Laura described how a focus of her reflection is trying "to pinpoint specific causes that improve or discourage learning." She described how she continuously investigates new curriculum materials and instructional ideas and most importantly her beliefs about the way her students learn. Sandy explained how she uses students' work to assess instructional objectives. "Sometimes I have to change the objective because what I thought [students] were going to learn isn't what they actually learned — they learned something else." Helen described how she investigated and tried different instructional practices to make learning student-led. The reflection led her to evaluate beliefs about

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what she wanted her students to learn. Differentiated instruction is important to Ramona, requiring her to reflect on each student's unique learning styles and evaluating and modifying her instructional practices.

The participants described the reflective teaching process of gaining a deeper understanding of an experience and then applying the gained knowledge to other experiences, beliefs, or ideas. For example, in Rebecca's critical-incident writing, she described how she assumed she could modify students' behaviors by using a reward system. What she learned was that children with autism and other special needs require ongoing monitoring, planning, evaluating, and modifying of actions. Other participants described how they applied understanding of the way students learn to future lessons and instructional materials.

Each participant shared Dewey's belief that reflection requires a set of attitudes: open-mindedness, whole-heartedness, and responsibility. By participating in the National Board certification process, all the participants demonstrated a willingness to consider multiple perspectives and take risks, a motivation to grow personally and professionally, and a sense of responsibility in which they evaluated their actions and consequences.

Schön's Theory of Reflective Thinking

Schön (1983) asserts that two types of reflective thinking foster knowledge: reflection-in-action and reflection-on-action. The participants in the study perceive reflective teaching as requiring both reflection-in-action and reflection-on-action and provided examples. The participants perceive reflection-in-action as being critical to effective teaching. They reported that reflection-in-action allows them to reflect and make immediate adjustments in the midst of a problematic or uncertain situation. For the

participants in the study, reflection-in-action is a daily practice as is making adjustments during a lesson or activity. All the participants indicated that reflection-on-action is key to being a reflective teacher and it is also part of their daily instruction, allowing them to learn from an experience in order to modify future decisions. Like Schön, the participants believe that reflection leads to professional competence.

General Characteristics of Reflective Teachers

The participants in the study share the belief that reflective practice is at the heart of effective teaching. Table 4 is a comparison of the participants' perceptions of how they perceive reflective teachers and what the literature identifies as characteristics of reflective teachers.

Table 4

Participants' Perceptions of General Characteristics of Reflective Teachers

Literature on the Characteristics of Reflective Teachers (Taggart & Wilson, 2005)	Participants' Perceptions of the Characteristics of Reflective Teachers				
	Rebecca	Laura	Sandy	Helen	Ramona
Reflective teachers search for alternative explanations.	yes	yes	yes	yes	yes
Reflective teachers identify and analyze problems and situations.	yes	yes	yes	yes	yes
Reflective teachers use rational problem-solving skills.	yes	yes	yes	yes	yes
Reflective teachers possess self-efficacy, intrinsic motivation, and a desire for lifelong learning.	yes	yes	yes	yes	yes
Reflective teachers are open to experimentation and new innovations.	yes	yes	yes	yes	yes

Table 4. Cont.

Reflective teachers seek multiple perspectives, including welcoming advice and critique.	yes	yes	yes	yes	yes
Reflective teachers are proactive and set goals.	yes	yes	yes	yes	yes
Reflective teachers make decisions consciously and carefully.	yes	yes	yes	yes	yes
Reflective teachers possess skills for acquiring and utilizing information.	yes	yes	yes	yes	yes
Reflective teachers evaluate underlying assumptions and biases.	yes	yes	yes	yes	yes
Reflective teachers recognize that knowledge is learned from experience and context.	yes	yes	yes	yes	yes
Reflective teachers are wholeheartedly committed to problem resolution.	yes	yes	yes	yes	yes
Reflective teachers are committed to improving their instructional practice.	yes	yes	yes	yes	yes
Reflective teachers align action with new understandings.	yes	yes	yes	yes	yes
Reflective teachers are committed to professional development.	yes	yes	yes	yes	yes
Reflective teachers possess a sustained interest in learning.	yes	yes	yes	yes	yes
Reflective teachers question personal actions and goals.	yes	yes	yes	yes	yes
Reflective teachers are committed to values.	yes	yes	yes	yes	yes
Reflective teachers are focused on student learning and development.	yes	yes	yes	yes	yes

Table 4. Cont.

Reflective teachers assume responsibility for one's own learning.	yes	yes	yes	yes	yes
Reflective teachers value continuous inquiry, questioning, and discovery.	yes	yes	yes	yes	yes

Positive Effects of Reflective Teaching

The participants in the study believe reflective teaching requires reflecting on the impact and consequences of instructional decisions and actions. The participants agree with Dewey's assertion that reflection is a pathway to knowledge and creates knowledge and skills that aid in understanding and dealing with future situations. The participants support Osterman's (2004) claim that reflection leads to learning (both for the teacher and students). The participants perceive reflection as leading to professional growth, as Van Manen (1977) purported. The participants believe that reflection improves their teaching practices; thus supporting Zeichner's and Liston's (1987) research on reflective teaching. The participants' perceptions of reflective teaching support Brookfield's (1987) claim that reflection encourages critical questioning. The participants agree with Larrivee's (2000) assertion that reflection prevents teachers from staying trapped in unexamined judgments, interpretations, assumptions, and expectations.

Van Manen's Levels of Reflective Thinking

Van Manen (1977) purports three levels of reflective thinking: technical rationality, practical action, and critical reflection. Teachers reflecting at the technical rationality level are concerned with the most efficient and effective method of teaching a predetermined objective, without questioning the end objectives. Teachers reflecting at the practical action level are concerned with clarifying assumptions (e.g., if and how

goals are being met). Teachers reflecting at the critical reflection level are concerned with the worth of the knowledge. The participants in this study perceive reflection at the practical action level and the critical reflection level.

The participants perceive reflective teaching at the practical action level. For example, the participants described how they carefully consider instructional materials, methods of instruction, and assessments; how they evaluate their assumptions about instructional practices and goals and how their practices and goals relate to student learning; and how they think about why they make decisions and evaluate the consequence of their decisions in regard to student growth.

The participants in the study also perceive reflective teaching at the critical reflection level. They shared a common concern about the worth of the knowledge and how their instructional practices benefit their students. The participants shared a concerned about what kind of content and skills are important for their students to know and how best to teach it. A common question the participants asked themselves is "why is this important to teach my students?"

The Concerns-Based Adoption Model (CBAM)

CBAM is a framework for explaining and implementing change; it identifies the stages of concern and levels of use for understanding and applying the process of change (Hall & Hord, 2006). The participants in this study identified with the following CBAM stages of concern: management, consequences, collaboration, and refocusing. The participants also identified the following CBAM levels of use: routine, refinement, integration, and renewal. Both the CBAM stages of concern and levels of use align with Van Manen's levels of reflective thinking.

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The CBAM stages of concern identify what teachers think and feel about change. The management stage of concern explains how the participants are focused on the task. The participants in this study reported that reflective teaching includes concerns and considerations regarding how change should be implemented, what resources are needed to implement change, and timeframes for implementing change. This stage of concern aligns with Van Manen's technical rationality and practical action levels of reflective thinking. The participants also identified with three other CBAM stages of concern: consequences, collaboration, and refocusing, all of which focus on the impact of change. These CBAM stages of concern align with Van Manen's practical action and critical reflection levels of reflective thinking. The participants reported that reflective teaching, specifically implementing change, requires careful consideration of consequences. They reflected on how instructional practices and changes affect students. The participants also reported a focus on collaboration when considering changes to instructional practices. The participants collaborated with both students and teachers as part of their reflective practice before making changes to lessons, activities, and goals. The participants also noted that reflective teaching requires the refocusing stage of concern. As part of the refocusing stage of concern, participants engaged in continuous inquiry regarding their instructional practices and how they could best make improvements to meet the needs of their students.

The CBAM levels of use identify behaviors during the implementation of change. Both routine and refinement levels of use align with Van Manen's practical action level of reflective thinking. The participants indicated that they perceive reflective teaching as including CBAM's routine level of use in which they carefully consider and implement

modifications to better implement a change. For example, when implementing a new goal or objective, the participants indicated that they reflect on modification such as adjustments to instructional materials, lessons, activities, assignments, etc. The participants also indicated that they perceive reflective teaching as including CBAM's refinement level of use, aligned with Van Manen's practical action level of reflective thinking. This level describes how the teacher makes the actual modifications to better meet student needs. All the participants in the study reported that they reflect on modifications to existing instructional practices before, during, and after the lesson or activity. CBAM's integration level of use aligns with Van Manen's critical reflection level of reflective thinking in which teachers work deliberately and collaboratively to meet students' needs. All the participants in the study reported collaborating with students and teachers to improve student learning as well as questioning instructional practice for relevance to students. All the participants indicated that concern about the worth of knowledge is part of their reflective teaching practices.

Tools for Developing Reflective Thinking

The literature identifies several common tools for developing reflective thinking: journaling, narrative writing, portfolios, action research, and collaboration. Two of the participants perceive journaling as an effective tool for developing their reflective teaching practices. Two participants perceive action research as a valuable tool for developing reflective teaching. All the participants utilize and value collaboration as a tool for developing reflective teaching; however, most of the participants indicated that they like to self-reflect before engaging in collaborative reflection. None of the participants utilize portfolios or narrative writing as a tool for reflective thinking;

however, they considered portfolios and narrative writing to be effective tools for fostering reflective thinking during the National Board certification process. All the participants indicated that lack of time impacts their decisions about which tools to use in their reflective teaching practices. Because time constraints are an issue, all the participants indicated that they use sticky notes with comments to document their reflective thinking because, as a reflective thinking tool, it is quick and effective. Table 5 identifies the tools for reflective thinking identified in the literature that the participants in the study utilize in their reflective teaching practices.

Table 5

Comparison of Participants' Use of Tool for Reflective Thinking and the Literature on Tools for Developing Reflective Thinking

Literature on Tools for Developing Reflective Thinking	Participants' Use of Tools for Developing Reflective Thinking				
	Rebecca	Laura	Sandy	Helen	Ramona
Journaling		X			X
Narrative Writing					
Portfolios					
Action Research	X	X			
Collaboration	X	X	X	X	X

Summary

This chapter described how the NBCTs who participated in this study perceive the meaning of reflective teaching. Rebecca, Laura, Sandy, Helen, and Ramona perceive reflective teaching as a process of discovery focused on student needs and learning, and

they all participate in daily reflective teaching practices. Four of the five participants believe that reflective thinking is necessary before, during, and after instructional activities. All of the participants utilize at least one tool for developing reflecting teaching. Only one participant indicated that her school and district include reflective teaching as a component of professional development initiatives. The participant responses differed regarding whether the National Board certification process provided training on reflective teaching. Four participants perceive the National Board certification process as a professional development activity that led to improved reflective teaching practices. The participants' perceptions differ regarding the belief that reflective practices differentiate them from other teachers who have not gone through the National Board certification process.

This chapter also described how the meaning of reflective thinking and teaching to the NBCTs who participated in this study compares to the literature on reflective thinking and teaching. The conceptual framework utilized for the comparison included: major theories of reflective thinking, general characteristics of reflective teachers, positive effects of reflective teaching, levels of reflective thinking, reflective teaching and CBAM, and tools for developing reflective thinking. All five participants' perceptions of reflective teaching aligned with the literature on both Dewey's and Schön's theory of reflective thinking. All five participants' perceptions of reflective teaching support the literature regarding general characteristics of reflective teachers. The participants perceive reflective teaching as having similar positive effects, including greater knowledge and understanding that lead to improved student learning and teacher professional growth. Based on the literature on levels of reflective thinking, the

participants perceive reflective thinking equivalent to Van Manen's practical action and

critical reflection levels of reflective teaching. The participants' responses compare to the

literature on CBAM, including stages of concern and levels of use that align with Van

Manen's practical action and critical reflection levels of reflective thinking. The

participants' tools for developing reflective thinking include tools identified in the

literature, including journaling, action research, and collaboration.

5. DISCUSSION

The literature indicates that reflective teaching improves teaching effectiveness. Reflection promotes professional growth, allows teachers to make better decisions about their practice, and leads to greater student success (Kottkamp & Osterman, 2004, York-Barr et. al, 2006). However, reflective thinking and teaching is not an intrinsic process (Cho & Oo, 2012). It is a learned behavior that must be developed (Dewey, 1933). In addition, those who engage in reflection usually reflect at the technical level unless taught and encouraged to think more deeply (Van Manen, 1977). NBPTS purports that the National Board certification process teaches participants to ask more critical *why* questions about their practices and student learning and that the certification process helps teachers develop a habit of questioning their practices and decisions (Park & Oliver, 2007). There is a lack of research on the levels of reflective thinking that NBCTs engage in after completing the certification process as well as reflective activities and tools that NBCTs utilize after the certification process.

The purpose of this study was to determine the participating NBCTs' perceptions of reflective thinking and teaching and compare their perceptions to the literature on reflective thinking and teaching. This study identified how the participating NBCTs define reflective teaching, incorporate reflective activities in their instructional practices, utilize various methods to record and develop reflections, perceive the benefits of reflective teaching, and engage in levels of reflections. The information provided by the participants was then compared to the extant literature on reflective thinking and teaching. Two specific research questions guided this study:

1. What is the meaning of reflective teaching to National Board certified teachers who participated in this study?

2. How does the meaning of reflective teaching to National Board certified teachers who participated in this study compare to the literature on reflective thinking and teaching?

This study included five participants who had completed the National Board certification process. Data collection included three interviews, a classroom observation, and procurement of a critical-incident writing sample. The first interview focused on the primary research question, the second interview focused on the observed lesson and gaps from the first interview and extant literature, and the third interview focused on the critical-incident writing sample, gaps from the first and second interviews, and extant literature. The classroom observations focused on the participants' instructional practices and student interactions, and the critical-incident writing focused on a purposeful sample of a significant experience or problem that required the participant to engage in critical thinking. I utilized grounded theory methodology, which allowed me to observe and interact with the NBCTs to better understand their perceptions of reflective teaching. To answer the research questions, I used constant comparison data analysis to analyze and compare data from the interview transcripts, observation notes, and critical-incident writing samples as well as continuously compare the data to the literature on reflective thinking and teaching.

Interpretations

The literature provided the conceptual framework for this study by identifying major theories of reflective thinking, general characteristics and positive effects of

reflective teaching, levels of reflective thinking, the Concerns-Based Adoption Model that includes reflection aligned with Van Manen's levels of reflective thinking, and tools for developing reflective thinking. This study found evidence that the NBCTs perceived the meaning of reflective thinking and teaching similarly to the literature. In addition, this study revealed that the NBCTs demonstrated both strong and developing correlations to the different aspects of reflective thinking and teaching as described in the literature and conceptual framework. In this section, I will present the meaning of the data reported in Chapter 4 as it relates to each participant.

Rebecca

In comparison to the other participants in this study, Rebecca best demonstrated Dewey's theory of reflective thinking as described in the literature. Based on the data collected from the interviews, observation, and critical-incident writing, Rebecca clearly exhibited Dewey's definition of reflective thinking in that she deliberately paused to recognize problematic situations in which there were no apparent solutions, planned according to ends-in-view, engaged in acts of searching and investigating beliefs and assumptions, and applied new knowledge to future instructional practices. In addition, Rebecca strongly exhibited the three attitudes that Dewey purported are necessary for reflective thinking. Rebecca's interview responses, observed lesson, and critical-incident writing revealed that Rebecca possesses attitudes of open-mindedness, wholeheartedness, and responsibility. Of all the participants in this study, Rebecca demonstrated the strongest attitude of open-mindedness, which Dewey described as seeking multiple perspectives, taking risks, and progressing to self-awareness. Dewey indicated that reflective thinking necessitates interaction with others. For Rebecca, in addition to

interaction with students like the other participants noted and exhibited, Rebecca revealed that she participates in daily collaboration with colleagues to engage in reflection.

Dewey also described reflective thinking as a systematic, rigorous, disciplined way of thinking that is rooted in scientific inquiry (Dewey, 1933, Rodgers, 2002). The data revealed that Rebecca frequently engages in this type of scientific inquiry-based reflection. For example, her critical-incident writing sample explains how she engaged in a six step process of a) identifying a problem, b) making a spontaneous interpretation of the experience, c) identifying questions that arose from the problem, d) generating possible explanations for the problem and questions, e) creating a hypothesis, and f) experimenting and testing the hypothesis.

Rebecca's reflective teaching also aligns strongly with Schön's theory of reflective thinking in that reflective practitioners engage in reflection in-action and reflection on-action. Rebecca demonstrated strong habits of reflective teaching in-action during the classroom observation. For example, Rebecca responded to each student's learning and developmental needs during the various instructional activities. When one student, for whom the learning goal was to independently follow instructions, refused to participate in the clean-up activity, Rebecca physically took his hand and helped him put away books until he was able to do it on his own. When another student, whose instructional goal was to participate as an engaged learner, was distracted by the need to touch things around him, Rebecca provided him with a string of beads to hold while he participated in the group lesson. She also demonstrated reflective teaching habits of reflection on-action as noted by her responses that explained her processes of reviewing

student work, collaborating with colleagues, evaluating experiences, and applying knowledge gained from her reflection to future decisions and actions.

Rebecca's reflective practices strongly support the literature on the characteristics and positive effects of reflective teaching. In the interview responses, Rebecca provided examples of how she examines her beliefs, goals, and practices to gain a better understanding of decisions and actions that lead to improved student learning. She demonstrated that she consciously and carefully plans, monitors, evaluates, and modifies actions and often engages in experimentation to test hypotheses. She identified and demonstrated that the focus of her reflection is on student needs, learning, and development and that reflective teaching leads to higher level student learning outcomes. She also demonstrated that reflection leads to new knowledge, a greater understanding of problems and solutions, and increased self-awareness.

Rebecca's responses to interview questions, the observed lesson, and her critical-incident writing demonstrate that Rebecca most often reflects at Van Manen's highest critical reflection level. Before, during, and after each lesson, Rebecca revealed that she reflects on why the content of the lesson is important to her students as well as the value of the knowledge and skill to her students. Of all the participants in this study, Rebecca reflected most often at the critical reflection level. She possessed a strong concern for the social consequences of her instructional practices. For example, Rebecca stated, "It may look like we are just playing with toy trains on the floor, but we are doing so much more." She explained how she is helping her autistic students develop social, motor, cognitive, and communication skills that are necessary to function in real world situations beyond the classroom.

An important component of Rebecca's role as a special education teacher is to identify and introduce change to students based on new and updated student individualized education programs (IEPs). Rebecca noted that, when reflecting on change, she identifies with CBAM's stages of concern (SoC) that focus on impact. After identifying the needed change, she noted that she reflects on the following questions: What are the possible effects the change will have on the student? (SoC level 4: consequence), How can I collaborate with my teaching assistant, speech pathologist, physical therapist, occupational therapist, parents, etc. to best implement the change? (SoC level 5: collaboration), and How can I differentiate my instruction to best address the change so that the student can achieve the new goal? (SoC level 6: refocusing). These stages of concern align with Van Manen's practical action and critical reflection levels of reflective thinking. During the implementation of the change, Rebecca described the following behaviors or CBAM's levels of use (LoU) that align with Van Manen's practical action and critical reflection levels of reflective thinking: making modifications to practices to meet the student's needs (LoU 4B: refinement), collaborating with colleagues to modify implementation of the change to meet the student's needs (LoU 5: integration), and testing alternative strategies to maximize the impact of the change on student's needs (LoU 6: renewal). Of all the participants, Rebecca indicated the highest frequency of implementing change in instructional practices and testing alternative strategies to maximize the change on student learning goals.

Rebecca revealed that she utilizes a limited number of tools for developing reflective teaching due to time constraints and the needs of her students. Because she teaches students with special needs, collaboration with the teaching assistant, speech

pathologist, physical therapist, occupational therapist, and parents is an important reflective thinking tool. In addition, because she has to consistently figure out how to best meet her students' needs for which there is no obvious solution, action research is a common reflective thinking tool. Although portfolios and narrative writing are a critical component of the National Board certification process, Rebecca has not utilized these tools since obtaining her certification due to the time commitment needed to include them in reflective teaching. Like the other participants, Rebecca utilizes "sticky notes" as needed to record her reflections on instructional materials and student artifacts.

Of all the participants in this study, Rebecca exhibited the most advanced reflective teaching skills in terms of the literature on reflective thinking theories, characteristics, positive effects, levels, and tools. Although Rebecca indicated that the National Board certification process taught her to be more reflective "to some degree," she stated "teaching students with special needs is what makes me most reflective."

Laura

Laura demonstrated strong traits of Dewey's theory of reflective thinking. Like the other participants in this study, her reflective teaching included planning according to ends-in-view, consciously pausing to focus on a problem or inquiry, evaluating personal biases and assumptions, and applying new knowledge from reflection to future instructional decisions and practices. She displayed the three attitudes that Dewey indicated are necessary for reflection. She showed strong characteristics of whole-heartedness and responsibility and revealed developing open-mindedness which entails considering multiple perspectives. Although Laura indicated that she engages in collaboration including participating in peer observations, Laura described how she

prefers to self-reflect rather than reflect with colleagues. She also noted that when she engages in collaboration she does so with the same two colleagues. The lack of seeking multiple perspectives through collaboration appears to be the result of time constraints. Laura noted that the colleagues she prefers to collaborate with are the "busiest people in school so there is little time for them to reflect together."

Laura exhibited a strong alignment with Schön's definition of reflection in-action and reflection on-action. During the classroom observation, Laura demonstrated reflection in-action by circulating around the classroom and participating in small group discussions. Each discussion was unique to the groups' needs. In her interview responses, Laura noted that reflection in-action is the product of both positive and negative student reactions to lessons. For example, during the classroom observation, Laura discerned from the students' expressions and participation at the beginning of the lesson that the students understood the task and were ready to participate in their small group read alouds and discussion activities. As she circulated around the room, she was able to identify students' strengths and weaknesses and then differentiate instruction to meet individual student and small group needs. After the lesson, Laura was able to reflect on the discussions to further identify students' strengths and weaknesses, which she noted would guide instruction the next day.

Like the other participants in this study, Laura demonstrated strong reflective teaching characteristics and the positive effects of reflective teaching as noted in the literature. Per Laura, reflective thinking is embedded in her everyday instructional practice and is focused on improving student learning. Laura presented a strong emphasis on being responsible for her own learning as denoted in her critical-incident writing in

which she applied for a fellowship and then used the information learned from the fellowship to create a social studies program that positively impacted the learning experiences for students within her district. Laura noted that reflective teaching has increased her repertoire of instructional strategies, empowered her to challenge existing practices, and led to higher student learning outcomes.

Laura displayed Van Manen's practical action and critical reflection levels of reflective thinking. Most of Laura's interview responses were aligned with Van Manen's practical action level of reflection in which she described how she evaluates her instructional practices in regard to their relevance to student growth and needs. Based on the data collected from the interviews, observation, and critical-incident writing, Laura is developing Van Manen's critical reflection level. For example, in an interview response, Laura described her student population as struggling readers who dislike the task of reading. She exhibited the critical reflection level when she explained how she wants to motivate her students to enjoy reading the way that she does and not perceive it as a task that makes them feel inferior to their peers who are reading at or above grade-level. Laura explained that activities like the lesson observed show how reading can foster social interactions and provide opportunities for students to participate in engaging and collaborative discussions about text as well as sharing differing ideas and opinions with peers. She explained that these skills are applicable in other content areas as well as valuable skills that they will continue to use as adults. She noted that these types of activities help students perceive reading more positively as well as create an environment where students can take risks and gain confidence as readers.

Laura's critical-incident writing is an example of CBAM's reflection on change and implementation of change. Laura's reflection on the implementation of a new district-wide fifth grade social studies program included the following CBAM stages of concern (SoC): schedule and resources needed (SoC level 3: management), effect on student learning (SoC level 4: consequence), inclusion of other teachers' ideas and involvement (SoC level 5: collaboration), and ideas for modifications to improve student learning and engagement (SoC level 6: refocusing). These stages of concern focusing on the task and its impact on students align with Van Manen's practical action and critical reflection levels of reflective thinking. The behaviors, CBAM's levels of use (LoU), that Laura exhibited during the implementation of the new social studies program included making modifications as needed (LoU 4B: refinement), collaborating with colleagues (LoU 5: integration), and reflecting on and implementing alternatives to maximize the impact of the change on student learning (LoU 6: renewal). These levels of use align with Van Manen's practical action and critical reflection levels of reflective thinking. Laura demonstrated a strong development of CBAM's higher stages of concern and levels of use when reflecting on and implementing change.

Based on Laura's interview responses, she is the strongest of all the participants in this study in regard to the variety of tools that she utilizes in her reflective teaching practices. She indicated that she uses journaling, sticky notes, action research, and collaboration when reflecting. Laura explained that these tools for reflective thinking are a result of her Title I reading teacher responsibilities as well as her school's inclusion of reflective teaching practices as part of its professional development.

Sandy

Like the other participants in this study, Sandy demonstrated strong development of Dewey's definition of reflective thinking, including planning instructions with goals in mind, initiating reflection by deliberately pausing to consider a problem or inquiry, investigating beliefs and assumptions about student learning and goals, and applying new knowledge gained from reflection to future decisions and actions. Sandy also demonstrated traits of whole-heartedness and responsibility. Although Sandy engaged in taking risks as described in Dewey's attitude of open-mindedness, data revealed that Sandy is developing the attribute of seeking multiple perspectives. Sandy noted that she primarily self-reflects, and she explained that she collaborates most often with a science teacher at her school; however, the collaboration is to identify science topics being studied for integrated English and science projects. For example, Sandy had her English class create slam poems about the science topics of motion and force and then had students participate in performance poetry in the science classes. Sandy did not indicate that she seeks multiple perspectives from colleagues.

Sandy demonstrated that she engages in Schön's reflection in-action and reflection on-action similar to the other participants in this study. However, unlike the other participants, Sandy noted that she does not usually engaging in reflection before a lesson. In her interview responses and classroom observation, Sandy demonstrated that she is strongest in reflection in-action. For example, she described an incident in which she was teaching satire to English IV students, and during the class discussion, Sandy discovered that students were struggling to understand the concept. At that moment, Sandy went to the computer and located a Saturday Night Live skit and a Stephen Colbert

video clip to display as an example of satire for the students. Using the spontaneous additional resources allowed Sandy to quickly teach satire so that students understood the concept and could relate it to experiences outside of the classroom. Sandy believed this impromptu guided instruction not only assisted in helping students understand satire at that moment but would also encourage students to look for it the next time they watch television programs similar to the ones shared in class.

Based on the interview responses and the classroom observation, Sandy exhibited the general characteristics and positive effects of reflective teaching as described in the literature, especially the characteristics and positive effects focused on student learning and development. She strongly demonstrated the reflective teaching characteristic of recognizing that knowledge is learned from experience and context. For example, Sandy described how her instructional practices focus of teaching students skills that can be transferred to other situations and experiences. She noted that she likes to include social, political, and cultural issues in her instructional practices. She encourages students to research controversial or relevant topics and present effective arguments using logical support from credible sources.

Sandy engaged in Van Manen's practical action level of reflection as denoted by almost all of her interview responses, which described how she engages in reflection on her instructional practices in regard to the relevance to student needs and learning outcomes. Sandy exhibited development of Van Manen's critical reflection level. For example, in an interview response, she explained how she utilized the controversial topic of fracking to teach students how to paraphrase and cite sources. She stated that the experience of researching credible sources and being able to articulate an opinion

supported by logic about the connection between increased earthquakes in Oklahoma and fracking provided an opportunity to not only learn writing skills that they can use in other content area classes and college, but it also provided an opportunity to help student understand and form educated opinions about a relevant topic on the local and national news. This example demonstrated how Sandy considered the value and social context of knowledge.

Sandy provided an example of an instructional change that demonstrated the CBAM stages of concern (SoC) focused on task and impact. She described how she taught sophomore students for the first time and her focus that year was on what she should teach and what resources she needed (SoC level 3: management) and collaborating with other teachers (SoC level 5: collaboration). These CBAM stages of concern align with Van Manen's technical rationality and practical action levels of reflective thinking. Sandy demonstrated the following CBAM behaviors, or levels of use (LoU), when implementing the change: stabilizing the daily implementation of the change (LoU 4A: routine), adjusting instructional materials, lessons, activities, assignments (LoU 4B: refinement), and collaborating with colleagues (LoU 5: integration). These CBAM levels of use align with Van Manen's practical action and critical reflection level of reflective thinking. Based on the information Sandy provided, she demonstrated strong CBAM stages of concern and levels of use aligned with Van Manen's practical action and revealed developing CBAM stages of concern and levels of use aligned with Van Manen's critical reflection.

Sandy noted that she utilizes a limited number of tools for developing reflective thinking. She explained that she is "constantly reflecting, but doesn't record it." She

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perceives collaboration with her students as the most effective tool for developing reflective teaching. She explained that if her students are asking higher-level, reflective questions, then she knows she does not need to modify instructions to reteach a concept or skill. She also stated that she perceives tools for reflecting as including the comments that she makes on students' essays and assignment, and if she notices a common theme, she knows to modify her lesson plans and reteach. Like the other participants in this study, she also utilizes sticky note comments and attaches them to lesson plans and student artifacts. Also like the other participants, she noted that time constraints are a factor in the tools employed to develop and record reflections.

Helen

Like the other participants in this study, Helen strongly exhibited Dewey's theory of reflective thinking including planning with ends-in-view, pausing to reflect on a problem or inquiry, evaluating biases and assumptions, and applying knowledge gained from reflection to future decisions and actions. She also demonstrated Dewey's proposed attitudes necessary for reflective thinking: whole-heartedness, open-mindedness, and responsibility. Of all the participants in the study, Helen displayed the highest level of the traits associated with open-mindedness by eliciting constructive criticism and feedback from her students about her instructional practices. During the observation, she asked the students how she could provide better feedback on their writing assignment, how she could help students to better understand AP English terms, and how she could best continue to help them prepare for the upcoming AP English exam. In her interview responses, she described how she requested feedback from present and past students to help improve her instructional practices and materials. She stated that some of the

feedback was humbling to receive but made her a better teacher. She also indicated that she seeks multiple perspectives from colleagues as well.

Helen displayed one of the strongest alignments with Schön's theory of reflection in-action and reflection-on action. During the classroom observation, it was obvious that Helen had reflected on the activity and quiz prior to assigning them. For example, she shared with her students the common misconceptions and errors that she made when taking the quiz that they would be taking. She shared personal experiences related to mistakes that they might make and offered strategies and suggestions that helped her. She empowered students to share their reflections on strengths and weaknesses and strategies that might help their peers. As the students engaged in the quiz-quiz activity to study the AP English terms, Helen exhibited reflection in-action by asking individual students questions to guide their understanding of their metacognition. She circulated around the class to join each group multiple times to check for understanding and ask guiding questions.

Based on the interview responses and classroom observation, it was apparent that the characteristics and positive effects of reflective teaching are embedded in Helen's daily instructional practices. Of all the participants in the study, Helen exhibited the strongest characteristics of welcoming advice and critique and being committed to challenging exiting practices. Helen indicated it is a consistent practice to ask her students for constructive criticism on how she can improve their learning experiences. In addition, Helen demonstrated the strongest commitment to professional development and responsibility for her own learning. For example, she was in the process of renewing her National Board certification during the study despite having to pay for the renewal fees

without a stipend from her district or state. In addition, she stated that she continues to learn from "paying it forward" by helping others with the National Board certification process.

Helen displayed Van Manen's practical action level of reflective thinking and developing critical reflection level of reflection. At the practical level of reflective thinking, Helen demonstrated that she reflects on biases and assumptions about instructional materials, methods of instruction, goals related to student learning, and consequences of instructional decisions and practices in regard to student learning and growth. Most of Helen's interview responses were aligned with Van Manen's practical action level of reflective thinking. Helen's critical-incident writing is an example of reflection at the critical reflection level. In her critical-incident writing, Helen explained how she evaluated her instructional decisions and actions from an educational, social, and moral perspective.

Helen provided an example of thinking about and implementing a change in her English classes that helped demonstrate CBAM's stages of concern and levels of use. All the English teachers at her school assigned book reports, and Helen believed that students were not benefiting from that instructional activity because it was clear to her that many students were borrowing from online sources, sharing each other's completed reports, making up information, or guessing in order to complete the assignment. She stated that book reports were not benefiting either the motivated readers or the unmotivated readers, so she suggested omitting book reports in English classes and replacing them with an activity and assignment that would focus on promoting student learning and goals in her content area. She thought about the change using the following CBAM stages of concern

(Soc): effects on student learning and goals as well as the merit and value of proposed change (SoC level 4: consequence), how the proposed change related to other teachers' instructional practices (SoC level 5: collaboration), and ideas for modifying assignments (SoC level 6: refocusing). These CBAM stages of concern align with Van Manen's practical action and critical reflection level of reflective thinking. She decided to replace the book reports with a comparable task that included a focus on social context. She had students read a novel and participate in book talks and Socratic discussions. While implementing the change, Helen engaged in the following CBAM levels of use (LoU): daily implementation of the change (LoU 4A: routine), modifications to the change to meet the needs of her students (LoU 4B: refinement), integration with other teachers (LoU 5: integration). Helen noted that she continues to reflect on the "value and merit" of these activities and continues to utilize student feedback to make modifications (LoU 6: renewal). These CBAM levels of use align with Van Manen's practical action and critical reflection levels of reflective thinking.

Helen shared that she uses minimal tools for recording and developing reflective thinking. She utilizes two primary tools for developing reflective thinking: sticky notes to document comments and collaboration with students. Helen noted that, when time permits, she collaborates with colleagues as well; however, Helen indicated that time constraints play a role in the tools that she utilizes for reflection. At the time of the study, Helen was renewing her National Board certification, so she was in the process of creating her portfolio, which included videotapes and written reflections about her instructional practices. She indicated that the portfolio process is time consuming and not practical to continue after she submits her entries to NBPTS.

Ramona

As with the other participants in this study, Ramona strongly demonstrated Dewey's claims that reflective teachers plan with ends-in-view, deliberately pause to reflect on a problem or inquiry, evaluate personal biases and assumptions, and apply knowledge gained from reflection to future instructional practices. She also demonstrated the three attitudes that Dewey purported are important for reflective thinking. Based on an interview response about reflecting with colleagues, Ramona is developing the attitude of open-mindedness. For example, she indicated that she prefers to self-reflect rather than reflect with colleagues because reflection is a "private" experience and she is her own hardest critic. She demonstrated strong attitudes of whole-heartedness and responsibility and many of her interview responses mentioned the importance of being a lifelong learner and instilling that passion to her students.

Ramona exhibited strong characteristics of Schön's reflection in-action and reflection on-action. Ramona explained that prior to assigning a task or assessment to her students, she completes the activity herself to better identify potential misconceptions or issues that her students might encounter when they engage in the assignment or assessment. During the classroom observation, Ramona displayed continuous examples of reflection in-action as she checked for student understanding and used that information to provide additional support and guidance. The instructional activity was student-led and she acted as the facilitator of their learning, much like the other participants in this study. She indicated that reflection on-action is an area of strength because, at the end of each day, she takes the time to document her reflections, including how she feels about the

lessons, how to improve the lesson in the future, what modifications need to be made to scaffold the lesson, and what resources are needed to improve the lesson.

Like the other participants in this study, Ramona displayed characteristics and positive effects of reflective teaching as noted in the literature. Ramona revealed that she is developing the characteristic of seeking multiple perspectives. In her critical-incident writing, she purposefully sought multiple perspectives; however, in her interview responses, she indicated that she does not prefer to collaborate with colleagues when reflecting. Ramona's responses revealed that she exhibits strong characteristics of being responsible for her own learning. She described herself as a "lifelong learner" who never wants to stop improving her instructional practice. She values professional development in the form of National Board certification and higher education courses. Similar to the other participants in the study, Ramona also demonstrated the reflective teaching characteristic of focusing on student learning and development.

Ramona strongly exhibited Van Manen's practical action level of reflective thinking in that she carefully and consciously considers all aspects of her instructional decisions including materials, methods, and assessments. She also demonstrated that she evaluates her assumptions and biases and as well as the consequences of decisions and actions related to student learning and goals. Ramona demonstrated that she is developing Van Manen's critical reflection level of reflective thinking. The classroom observation appeared to focus on Van Manen's technical rationality level; however, her interview responses about the observation revealed that Ramona reflected at the critical reflection level. For example, Ramona perceives her emphasis on structure to be a solution to educational, social, and ethical issues. Ramona stated that she is teaching her students

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skills necessary to be successful in their future education and real world experiences. She referred to her classroom as "her house" and the student as "guests in [her] classroom." She described how she "refuses to lower [her] expectations for any student." Ramona explained that the structure and routines in her class teach students to be organized, lifelong learners. She noted that in her class, she does not emphasize grades and allows students to redo any assignment or test so that they learn the skill and knowledge and not focus on grades. She stated, "They can redo anything they want up to a 95." For Ramona, her instructional practices are not about teaching, assessing, grading, and moving on to the next concept. Ramona stated that she wants her students to "own their learning and carry that forward for life."

In her interview responses, Ramona described how she thinks about change and the behaviors she includes when implementing a change. She stated that when thinking about a change, such as introducing a new unit or incorporating new standards into her instructional practices, she thinks about change using the following CBAM stages of concern (SoC): the resources needed to implement the change (SoC level 3: management), how the change will affect students (SoC level 4: consequences), and ideas to make the change better for students (SoC level 6: refocusing). During the implementation of the change, Ramona indicated that she includes the following CBAM levels of use (LoU): focus on structure (LoU 4A: routine) and modifications identified from reflection on-action and reflection in-action (LoU 4B: refinement). Ramona did not indicate that she utilized CBAM's collaboration stage of concern or integration level of use, which both focus on deliberate collaboration with colleagues.

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Ramona stated that she experimented with using multiple tools for recording and developing reflective thinking, including recording thoughts and journaling. She indicated that recording her thoughts was awkward and journaling her thoughts was impractical. Like the other participants in this study, Ramona stated the most practical and useful tool for recording and developing reflection is using sticky notes. Time constraints play a role in the tool that she uses. Of all the participants in the study, Ramona feels least comfortable utilizing collaboration as a tool for developing reflection. She noted "reflection is private . . . there isn't always time . . . reflecting with peers outside of my department is difficult." After various experimentation with reflective thinking tools, Ramona noted that she will continue to use sticky notes to record her reflections.

Conclusions

1. The National Board certification process helped improve the participants' reflective teaching practices. The NBCTs in this study indicated that the National Board certification process provided minimal explicit instruction on reflective teaching; however, the participants stated that the certification process, specifically the creation of the portfolios, led them to be a more reflective teacher. The data reveal that the NBCTs in this study primarily engage in reflection at Van Manen's practical action level of reflection and sometimes engage in reflection at Van Manen's critical reflection level. Each of the participants demonstrated that they reflect on the worth of instruction and knowledge as it relates to their students' needs. Although most of the participants in the study did not receive explicit training on reflection, it appears that the National Board certification

process led these teachers to ask "why" questions about their practices. Data

collected in the interviews, classroom observations, and critical-incident writing

revealed that the participants continue to ask "why" questions about their

practices after they successfully completed the certification process.

2. After successful completion of the National Board certification process, the

    NBCTs in this study continued to display attributes of NBPTS five core

    propositions. The interviews, classroom observations, and critical-incident

    writings revealed that the NBCTs demonstrated reflective teaching as noted by

    NBPTS five core propositions. Proposition 1 states, "Teachers are committed to

    their students and their learning." The NBCTs in this study identified student

    learning as their primary reason and benefit of reflective teaching, and they strive

    to understand individual student needs and adjust their instructional practices

    accordingly. Proposition 2 indicates that "teachers know the subjects they teach

    and how to teach those subjects to students." The NBCTs in this study relayed

    subject content to students using a variety of instructional strategies, materials,

    and resources, and fostered the importance of discovery, active engagement,

    inquiry, and higher-level thinking skills with their students. Proposition 3 purports

    that "teachers are responsible for managing and monitoring student learning." The

    NBCTs in this study emphasized the importance of knowing their students

    learning styles, reflecting on their personal assumptions and biases about student

    learning, and considering alternatives to improving student success. Proposition 4

    states, "Teachers think systematically about their practice and learn from

    experience." The NBCTs in this study indicated that they engage in daily

reflection and possess a genuine passion for learning and improving their teaching

practices. Proposition 5 indicates that "teachers are members of learning

communities." The NBCTs in this study engaged in collaboration with students to

improve student learning outcomes. In addition, the NBCTs in this study are

leaders in their schools and districts.

3. The participants in this study demonstrated that reflective thinking leads to

professional growth. This study supports the literature on reflective teaching in

that reflective thinking enables teachers to be self-directed and to take

responsibility for improving their own learning and teaching performance. Four of

the five NBCTs in this study indicated that their districts and schools do not

include reflection on teaching practices as part of their professional development,

yet the NBCTs described how they use reflection to increase their repertoire of

instructional strategies, challenge existing practices, examine their assumptions,

and modify their instructional practices. Although reflection is not a component of

professional development in their districts or schools, the participants

demonstrated that they engage in Van Manen's practical action level of reflection

by taking ownership of their own personal and professional development.

4. Participants in this study engage in self-reflection on instructional practices before

considering reflection with colleagues. Four of the five NBCTs prefer to self-

reflect. The one participant who prefers to reflect with colleagues teaches special

education, which she explained requires her to collaborate with a teaching

assistant, speech pathologist, physical therapist, and occupational therapist to

discuss student IEPs. Although all the participants indicated there are instances in

which they engage in reflection with colleagues, they stated that they prefer to self-reflect on their instructional practices due to time constraints. Some participants described reflection as being a personal task because they are evaluating their own biases and assumptions. The four NBCTs in the study that engage in mostly self-reflection indicated that, when they do reflect collaboratively, they prefer to reflect with colleagues that teach similar subject areas. All the participants stated that they first engage in self-reflection before they reflect with colleagues.

5. An emphasis on student-centered reflection leads to higher levels of reflective thinking. When the NBCTs in this study reflected at Van Manen's highest level of reflective thinking, it was because of their focus on students. All the NBCTs identified student goals, needs, learning, and outcomes as the primary reason that they engage in reflection. They demonstrated that when they reflect at Van Manen's critical reflection level of reflective thinking they reflect on the worth of the knowledge presented to their students and consider the possible social, moral, ethical results of their instructional practices and decisions. They evaluate the strengths and weaknesses of their lessons, why modifications to their lessons are necessary, and if the content of their lessons is important to students. The NBCTs in this study expressed a need to meet the needs of all the learners in their class, which requires modifying content and lessons to ensure all students are engaged, active learners. They focused on student-centered reflection, in which they examined the impact that their instructional decisions have on their students.

6. Reflecting at higher levels requires instruction and practice. The participants in this study indicated that the National Board certification process taught them to be more reflective. The components of the portfolio teach candidates to ask "why" questions at Van Manen's practical action level of reflective thinking. In order for teachers to reflect consistently at Van Manen's critical reflection level, teachers need to be taught to evaluate the worth of knowledge and learning in regard to justice, equality, and freedom, which is not a requirement of the National Board certification process.

7. The NBCTs in this study demonstrated Dewey's theory of reflective thinking in that reflection begins with a deliberate pause to recognize problematic situations for which there are no apparent solutions, entails planning according to ends-in-view, includes actively searching and investigating beliefs and assumptions, and requires application of new knowledge to future instructional practices and decisions. The NBCTs in this study exhibited the three attitudes that Dewey purported are necessary for reflection: open-mindedness, whole-heartedness, and responsibility. Some of the participants in this study revealed that more time and practice is needed for developing the attitude of open-mindedness, specifically collaborating with colleagues to seek multiple perspectives.

8. According to the NBCTs in this study, reflective thinking leads to professional competence and requires both reflection in-action and reflection on-action. The participants perceive reflection in-action as critical to effective teaching because it enables them to make changes in the midst of their instructional practices to maximize student learning. The participants also indicated that reflection on-

action is critical to student learning and outcomes because it allows teachers to learn from an experience, action, or decision and use that information to modify future instructional practices.

9. The NBCTs in this study perceive the primary benefit of reflection is the improvement of student learning. This perception aligns with the literature on the characteristics and positive effects of reflective teaching.

10. The NBCTs in this study indicated that the tools they utilize for recording and developing reflective thinking are influenced by time constraints and practicality. For example, all the participants in this study use sticky notes as a quick and easy method of documenting their reflections.

<p align="center">**Recommendations**</p>

In this section I will present the recommendations for changes to the National Board certification process, school leaders seeking to increase teachers' reflective thinking and teaching, and future research.

Recommendations for Changes to the National Board Certification Process

As part of the mentoring from candidate support providers, NBPTS can incorporate instruction on the different levels of reflective thinking. Literature indicates that reflective thinking is not a spontaneous activity in the teaching profession and those who engage in reflection usually reflect at the lower levels unless encouraged and taught. Providing information about the levels of reflective thinking would help candidates going through the certification process become conscious of their reflective thinking and more likely to reflect at the higher levels. For example, NBPTS could gradually expose the candidates to higher levels of reflections for each of the five core propositions. When

reviewing candidates written reflections for the portfolio process, NBPTS candidate support providers could include comments and questions related to higher levels of reflective thinking.

NBPTS can also use the conceptual framework of this study as part of the mentoring from candidate support providers. NBPTS candidate support providers could share Dewey's theory of reflective thinking; Schön's theory of reflective thinking before, during, and after a lesson; the general characteristics of reflective teaching, the positive effects of reflective teaching, the levels of reflective thinking, and tools for developing reflective thinking. This information could assist candidates in creating portfolio entries and completing the timed writing assessment. The inclusion of this information could also lead to reflective teaching habits after the completion of the certification process.

Recommendations for School Leaders Seeking to Increase Teachers' Reflective Thinking and Teaching

School leaders can utilize NBCTs' knowledge and skills related to reflective teaching by asking them to serve as leaders of professional development communities. School leaders can recruit NBCTs as partners in developing, selecting, and evaluating professional development programs and instructional materials. Specifically, NBCTs can serve as facilitators of professional development training on reflective teaching strategies. In addition, districts and schools can utilize NBCTs to mentor and collaborate with other teachers to foster reflective teaching.

For schools and districts that do not have NBCTs, school leaders can still include reflective teaching as a component of professional development. School leaders can use the conceptual framework in this study as a guide for professional development on

reflective teaching and include aspects such as Dewey's theory of reflective thinking, Schön's theory of reflection in-action and reflection on-action, general characteristics of reflective teaching, positive effects of reflective teaching, Van Manen's levels of reflective thinking, the Concerns-Based Adoption Model for implementing change, and tools for developing reflective thinking. In addition, schools and districts can incorporate time for reflection into various professional development activities as well as provide opportunities for teachers to utilize tools for developing reflective teaching, including reflective writing, collaboration, and action research as components of professional development programs.

School leaders can create an environment that promotes Dewey's proposed attitudes of reflective thinking, which include open-mindedness, whole-heartedness, and responsibility. An environment that fosters open-mindedness would encourage teachers to consider multiple perspectives and take risks, thus enabling teachers from getting "stuck on the level of self" (Dewey, 1933, p.30). An environment that promotes whole-heartedness would motivate teachers to grow professionally and prevent them from being indifferent about their instructional practices and decisions. An environment that perceives responsibility as an important teacher attribute would encourage teachers to reflect on their decisions and actions and their consequences.

Recommendations for Future Research

As a result of the findings and conclusions of this study, I suggest the following recommendations for future research:

1. Further investigation could center on identifying which levels of reflective thinking teachers engage in during Schön's reflection in-action and reflection on-

action. This study could include analysis of reflective levels before, during, and after instructional activities.

2. Further study is needed to determine if deliberate exposure or training in levels of reflective thinking leads to higher levels of teacher reflection and learning. Specifically, if teachers were exposed to Van Manen's three levels of reflective thinking, would the results include teachers' awareness of their current level of reflection as well as a conscious decision by teachers to reflect at the higher levels of reflection?

3. Further research could explore the relationship between the use of tools for recording and developing reflective thinking and the development of reflective teaching practices. Specifically, research could focus on which tools reflective teachers utilize that lead to the highest level of reflective thinking.

4. More research is needed to determine which factors influence the levels of reflective thinking that teachers regularly utilize. The factors could include subject area taught, specific content taught, specific instructional activities, student demographics, teaching and life experiences, professional development on reflective teaching, incorporating student feedback, learning culture of the school, staffing levels in the school, demographic makeup, class size, and other external factors.

5. Further investigation could center on the impact of schools and districts utilizing NBCT's knowledge and skills related to reflective teaching to train their colleagues.

6. Further research could compare the difference between the way NBCTs and non-NBCTs with similar teaching experience perceive the meaning of reflective teaching.

7. Further investigation could focus on how NBCTs perceive their reflective teaching practices prior to, during, and after the National Board certification process.

Reflections on My Experiences with the Research Process

The research process that I chose for this study taught me about the process of constructing meaning, and this study in particular helped me understand the meaning of reflective teaching through the eyes of the participants. My primary goal was to collect and analyze data so that the focus was on "how" NBCTs perceive reflective thinking rather than determining "if" or "why" the NBCTs in the study were reflective.

Through grounded theory methodology, I learned that making meaning of knowledge claims that emerge during the research process takes time and patience. I learned the skill of utilizing constant comparison data analysis in which I continuously analyzed and compared data from interview transcripts, observation notes, and critical-incident writings. New insights and questions continuously surfaced throughout the data collection and data analysis, and at times, it was overwhelming. I learned that grounded theory methodology can be messy and time consuming. At times the recurring process of constant comparison of data to data and data to literature seemed like it would never end and the research questions would never get answered. But now I see that the process enabled me to construct a deeper understanding of reflective teaching practices of the

NBCTs in the study, and I am motivated to want to do future research using grounded theory methodology.

I learned that finding participants, especially busy teachers, to commit to multiple interviews, a classroom observation, and critical-incident writing is challenging. I sent many email requests and left many messages to potential participants without hearing back from them. I received many email replies from teachers saying they wished that they had time to help but were too busy with the many conflicting priorities that come with being an educator. I learned the skill of interviewing participants, creating follow-up interview questions to fill in gaps and clarify emerging concepts, taking observation notes, and analyzing critical-incident writing samples. I learned the art of developing open-ended, non-judgmental questions that elicit responses relevant to research questions.

I learned the importance of a thorough literature review and was relieved that I had invested the time to peruse literature during the development of Chapter 2 and during data analysis until I reached a saturation point at which I was no longer finding new insights. For future research endeavors, I learned the skill of using existing literature to help first provide a framework for the study and then help guide ideas that emerge from data collection and analysis.

Conducting this research has been the ultimate professional development experience of my life and has impacted me both personally and professionally. I learned a great deal about myself, including that I am my own worst critic and that meaning making is an ongoing process. Personally, this experience has led me to be more disciplined, self-confident, and better at time management. It has motivated me to be a

lifelong learner, and it has inspired me to want to pursue research on other educational topics. I would like to pay forward the mentoring, support, and encouragement that my dissertation chair has shown me through this experience and have vowed to make that a top priority. Professionally, the research topic of reflective thinking has taught me to be more cognizant of levels of reflection in my own practices and has sparked interest in future research topics such as the role of reflection in culturally responsive teaching. The cyclical and interactive nature of the data collection and data analysis I used in this study is now a practice that I utilize for identifying solutions to work-related problems. Finally, I would like to use the information from this study to create a professional development training on reflective teaching and share with school leaders.

Closing Thoughts

The NBCTs in this study demonstrated that they possess the knowledge, skills, attitudes, and instructional practices associated with reflective teaching. The participants also perceive reflection as essential for effective teaching. When asked why they reflect and what they perceive are the benefits of reflecting on instructional practices and decisions, the NBCTs in this study shared the same answer: improved student learning. In a 2008 speech, President Obama said, "The single most important factor in determining [student] achievement is not the color of their skin or where they come from. It's not who their parents are or how much money they have. It's who their teacher is." Imagine classrooms with teachers who consistently reflect at the highest level and imagine the positive impact that these teachers can have on students, colleagues, and the educational system.

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Encouraging teachers to reflect at Van Manen's critical reflection level would lead teachers to examine the social, ethical, and moral aspects of their instructional practices and student goals. The NBCTs in this study credit the National Board certification process for helping them become more reflective, and the National Board certification process requires teachers to ask "why" questions about their instructional practices and decisions. Imagine if all teachers were taught and encouraged to not only ask "why" question when considering the worth of instruction and knowledge but were also encouraged to ask "what should be."

APPENDIX SECTION

APPENDIX A: FIRST INTERVIEW QUESTIONS

1. What is your definition or description of reflective teaching?

2. Can you describe a recent time when you used reflection to improve your instructional practice?

3. Does your school or district encourage you to reflect on your teaching practices as part of your professional development?

4. Do you believe the National Board Certification process provided quality training in reflective teaching? If not, why? If so, how?

5. Do you believe the National Board Certification process taught you to be a more reflective teacher? If not, why? If so, how?

6. What types of activities did you reflect upon while going through the National Board Certification process? Which of these activities provided the most valuable insights to improving your instructional practices? Which of these activities do you currently practice after going through the certification process?

7. What types of activities (e.g., lessons, activities, curriculum, instructional materials, student performance and/or work, working with students from diverse cultures) do you reflect upon? Which do you find most beneficial to improving your instructional practice?

8. What methods, if any, do you use to record your reflections? Which do you find most beneficial?

9. Do you reflect on a lesson before the lesson? If yes, how?

10. Do you reflect on a lesson during the lesson? If yes, how?

11. Do you reflect on a lesson after the lesson? If yes, how?

12. When reflecting on your instructional practices, do you usually self-reflect, reflect with colleagues, or do some combination of both? Which do you prefer and why?

13. What, if any, do you believe are the benefits of reflective teaching? Would you recommend reflective teaching to other teachers? Why or why not?

14. Do you think reflective practice differentiates you from other teachers who have not gone through the National Board certification process? If so, why?

15. Describe a time when you used reflection to implement a change related to your instructional practice. How did your reflection impact the way you implemented the change?

APPENDIX B: GUIDELINES FOR CRITICAL-INCIDENT WRITING

Part A: Description of a critical incident

Think of an incident concerning your teaching that is significant to you. This event does not need to be dramatic but should be an event that made you stop and think about the situation or raise questions about it; that made you question aspects of your beliefs, values, attitude, or behavior; and that was significant enough to impact you personally or professionally. Once you have decided on the incident you want to write about, complete the following steps:

1. Write a brief description of the incident including what happened, when and where it took place, and who was involved.

2. Describe your feelings and thoughts at the time of the incident and what made this incident "critical" for you.

3. List assumptions, if any, that you had at the time of the incident which you felt were confirmed by what happened. What happened that led you to think your assumptions were accurate and valid?

4. List assumptions, if any, that you had that were challenged by the incident. What happened that led you to think your assumptions might be inaccurate or invalid?

5. Did you try to check the accuracy or validity of your assumptions challenged by the incident, either at the time of or after the incident occurred? If so, how?

6. What was your immediate response to the incident? What, if any, was your later response?

7. Are there different perspectives on the incident? For example, would other individuals involved in the incident perceive the situation or interpret your behavior differently than you did?

8. After reflecting, can you think of any different responses you might have made or actions you might have taken?

9. Explain the impact the incident has had on you personally or professionally.

Part B: Analysis of critical incident

Read your description of the critical incident and explain how reflective thinking was relevant both during and after the incident.

APPENDIX C: INFORMED CONSENT FORM

Informed Consent Form

The Meaning of Reflective Teaching to National Board Certified Teachers

This project EXP2014C480757I was approved by the Texas State IRB on June 13, 2014. Pertinent questions or concerns about the research, research participants' rights, and/or research-related injuries to participants should be directed to the IRB chair, Dr. Jon Lasser (512-245-3413 - lasser@txstate.edu) and to Becky Northcut, Director, Research Integrity & Compliance (512-245-2314 - bnorthcut@txstate.edu).

INTRODUCTION

You are invited to participate in a research study being conducted by Sharlotte Carey, a doctoral candidate at Texas State University, under the direction of dissertation committee chair Dr. Steve Gordon. You are being asked to participate because you have met the following criteria: (a) attained National Board certification, (b) currently teach in a K-12 school, and (c) have a minimum of three years teaching experience. You are one of five individuals taking part in this study.

PURPOSE

The purpose of this study is to examine the meaning of reflective teaching through the lens of National Board certified teachers. This study will contribute to the literature on reflective thinking and teaching.

INFORMATION ABOUT PARTICIPANTS' INVOLVEMENT IN THE STUDY

If you agree to participate in this study, you will take part in the following procedures:

1. You will participate in three interviews. Each interview will take approximately 45-60 minutes. The interviews will be recorded electronically. You will determine the time and location of the interviews.

2. You will be asked to submit a critical-incident writing sample, which will include two parts. Part A is a description of the incident and will be collected at the first interview and returned to you at the second interview. Part B is the analysis of the incident and will be collected prior to the third interview.

3. You will participate in a classroom observation. The researcher will take notes during the observation.

4. You will have the opportunity to view the contents of typed transcripts for accuracy.

5. If requested, you will receive a summary of the findings upon completion of the study.

RISKS

There is minimal risk involved in your participation in this study. You may experiences some stress or discomfort in recalling events you may share in your critical-incident writing or interviews regarding reflective practices. You are free to disclose only information you wish to reveal. You are free to skip any interview questions that make you uncomfortable.

BENEFITS

There are no direct benefits to you from participation; however, you will be making a valuable contribution to research on the body of knowledge about reflective thinking and teaching in education. Your participation will contribute information to the literature on reflective thinking and teaching through the lens of National Board certified teachers. Information from this study can be used by NBPTS and administrators.

CONFIDENTIALITY

All data collected and any other information gathered in this study will be kept confidential. The electronic recordings of the interviews will be transcribed. No references in oral or written reports will link participants or participants' schools to the study. A pseudonym will be assigned to your data to conceal your identity. You may be quoted in papers that are published as a result of this study, but your pseudonym, not your real name, will be used.

Electronic copies of data will be stored on the researcher's personal computer to be accessed and used only by the researcher. Other data will be stored in a locked file drawer at the office of the researcher until the dissertation has been approved. Unless participants in the study give permission otherwise, data will be available only to the researcher, Sharlotte Carey, and the dissertation committee chair, Dr. Stephen Gordon.

CONTATCT INFORMATION

If you have questions at any time about the study or the procedures, you may contact the researcher, Sharlotte Carey, at sharcareytx@yahoo.com. This research study is a requirement of the doctoral program at Texas State University. No funding for the project or compensation to participants is provided.

PARTICIPATION

Participation in this study is voluntary. If you decide to participate, you may refuse an answer to any questions you do not want to answer and still remain in the study. As a participant, you are free to withdraw from participation at any time without penalty. If

you withdraw from the study before data collection is complete, your data will be returned to you upon request or destroyed.

DOCUMENTATION OF CONSENT

If you agree to take part in this study, please sign below:

_____
Printed Name of Participant

_____
Participant Signature

_____
Printed Name of Researcher

_____
Researcher Signature

After you have signed this consent form, the researcher will provide you with a copy. Please keep it in case you want to read it again or contact the researcher regarding the study.

APPENDIX D: REBECCA'S OBSERVATION AND CRITICAL INCIDENT

Description of Classroom Observation

Rebecca's preschool students engaged in independent free play focusing on social skills while Rebecca facilitated a one-on-one activity with each student. The one-on-one activity provided guided instruction and assessment of cognitive, motor, and communication skills. The students appeared comfortable with the morning routine and independently chose various activities such as playing with blocks, looking at books, and working on puzzles.

For the one-on-one activity, Rebecca assisted each student in gluing paper shapes to create an owl. Rebecca encouraged each student to select a circle or square shape for the owl. Rebecca asked the students to name the shapes and the colors as they assembled the paper owls, and during this activity, it was apparent that Rebecca was cognizant of each student's needs, including cognitive, motor, communication, and social-emotional. The one-on-one activity was uniquely tailored to each student's learning style and individual goals as evidenced by the guided instruction and level of independence in which each student constructed the paper owl and communicated with the teacher.

While Rebecca facilitated the one-on-one activity with each student, a teacher's assistant oversaw independent free play; however, Rebecca was also observant of the multiple activities and student behaviors in the classroom. For example, when Rebecca noticed a student sitting on the floor by himself, she escorted him to a table and engaged him in a marble activity to work on his fine motor skills. A few minutes later, Rebecca noticed a conflict between two students arguing over a toy. Rebecca quickly intervened with a mini-lesson about sharing and encouraged each student to select a colored ball and

take turns dropping the balls in a toy chute. A few minutes later, Rebecca reminded a student to "fix his feet," which Rebecca later described as one of the student's individual goals related to self-care. Rebecca was also aware of her student's emotional needs. For example, she showed sympathy to a student by asking him if he had a "tough night" and telling him "nosebleeds can be scary."

Free play and the one-on-one activity ended with Rebecca singing "the clean-up" song while the students put away toys in designated bins and areas. Rebecca assigned each student a task to assist with putting away the various toys and books, and she rewarded each student on-task with praise for his/her contribution. One student refused to put away books as assigned, and Rebecca guided his hands to pick up a book and put it on the bookshelf and then gave him a high-five. This interaction continued until the student put away the books on his own.

Rebecca announced circle time, each student selected a colored carpet square, and the students sat in a semi-circle facing the teacher and various instructional manipulatives. Rebecca guided the students to role play to a song about a sleeping rooster waking up to a good morning. Each student's personality and developmental needs were unique. One student fidgeted, so Rebecca offered him a handmade marble rope toy to hold. Rebecca modeled social skills and then asked the students to practice the behavior, which included looking at a peer and saying hello. Rebecca used animated expressions to engage the students and seamlessly redirected student behaviors to ensure all students were active learners during circle time activities. Rebecca praised the students for singing the "Rise and Shine" song using American Sign Language. Throughout circle time, she continued to praise her students for their participation. She instructed the students to say

the alphabet as she signed the letters in American Sign Language. Some students mirrored Rebecca's actions and signed the alphabet. In unison, Rebecca guided the students to count the days on a displayed calendar and sing a song about the days of the week. Other circle time activities included singing a song about the 12 months of the year to the tune of "Macarena," predicting the weather for the day and placing the warm and sunny labels on the whiteboard, reviewing the color of the day and placing pictures of red objects on the whiteboard, singing a song about the letter "I" and the number "12," and reading a book titled *Pete and the Cat*. Throughout circle time, Rebecca maintained a positive disposition, displaying a sense of humor and patience. It was obvious during the observation that Rebecca was focused on individual student goals as well as the inclusive goal that all students will be active learners. The students were engaged and eager to answer questions when Rebecca checked for understanding of the various lessons.

Classroom Observation Follow-up Questions

Rebecca's instructional practices and interactions with her students revealed an emphasis on individual student goals as well as an inclusive goal that all students participate as active learners. The following instructional practices and student interactions related to reflective teaching were observed:

- Reflective thinking starts with an awareness of a problem or uncertainty and ends with a judgment about the problem (Dewey, 1933).

- Reflective thinking requires an attitude of open-mindedness, whole-heartedness, and responsibility (Dewey, 1933).

- Reflective thinking necessitates interaction with others (Dewey, 1933).

- Reflection-in-action occurs when the teacher identifies and selects practical solutions while in the midst of a problematic situation (Schön, 1983).

- Reflective teachers monitor, evaluate, and modify actions consciously and carefully (Taggart & Wilson, 2005).

- Reflective teachers focus on student needs, learning, and development (Valli, 1997).

- Reflective teaching leads to self-awareness and understanding of problems (Dewey, 1933).

- Reflective teaching leads to higher student learning outcomes (York-Barr, et al., 2001).

- Reflective teaching leads to an increased repertoire of instructional strategies (Zeichner & Liston, 1987).

- Van Manen's practical action level of reflective thinking focuses on student needs (Van Manen, 1977).

- Van Manen's critical reflection level considers the value of knowledge and the social context (Van Manen, 1977).

Critical Incident

Rebecca described a preschool student with autism who was fully toilet-trained but would not use the bathroom at school. Rebecca was concerned because the student would not go to the bathroom for seven hours plus a 30 minute bus ride before and after school. Rebecca tried rewarding the student for attempting to use the toilet at school but had no success. Rebecca discovered that when the student's father picked him up early, the student would immediately go to the bathroom while his father was present. The

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student's father was a stay-at-home parent, so Rebecca arranged for him to come to school each day and take his son into the bathroom to use the toilet. After a few days, Rebecca asked the father to remain at the bathroom door while the student used the toilet by himself. Then after another few days, Rebecca asked the father to wait outside the bathroom door in the classroom while Rebecca took the student into the bathroom. After a few more days, Rebecca had the father look in the classroom window while she took the student to the bathroom. Next, Rebecca transitioned to placing a photo of the father's face in the window, and finally the student was able to use the toilet on his own by having Rebecca or the teacher assistant tell him it was time to use the restroom. The entire process took a month.

Rebecca described her feelings and thoughts at the time of the incident and explained why she views the incident as critical. She indicated that she was concerned for the health of the child because not going to the bathroom for eight hours could lead to urine stagnation, urinary tract infections, stretching the bladder, and dehydration resulting from not drinking enough water. She perceived the situation as critical because the child's health was at risk.

Rebecca described assumptions that she had at the time of the incident and identified which assumptions proved to be accurate and valid and which assumptions proved to be inaccurate and invalid. She stated she had originally assumed that she could redirect the student's behavior by using a reward system, but his aversion to the toilet at school was stronger than his love for goldfish crackers and other rewards. Rebecca's assumption that the student's need to go the bathroom, coupled with his security when his father was present, allowed him to use the toilet at school. Rebecca made the assumption

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that she could wean the student from having his father be present to use the toilet and with patience and time, it worked. She stated that working with students with special needs has taught her that when one thing doesn't work, try another and another until the desired behavior is reached. She indicated that since the incident the student now goes to the bathroom independently without being asked.

Rebecca indicated that reflective thinking was relevant both during and after the incident. She stated that working with children who have autism or other special needs requires her to employ an extensive "bag of tricks." She stated that she collaborated with the student's father to develop a plan for redirecting the behavior, and over the month of the incident, she reflected on the next steps to reach the goal. During and after the incident, she collaborated with her teaching assistant and the school psychologist to determine each step in the process of helping the student independently use the toilet at school without his father present.

Based on Rebecca's critical-incident writing, the following reflective thinking and teaching characteristics were noted:

- Reflective thinking involves critical questioning and discovery (Brookfield, 1987).

- Reflective thinking includes framing and reframing decisions, practices, and outcomes (Loughran, 2002).

- Reflective thinking includes confronting and reconstructing meaning-making and understanding of actions (Smyth, 1989).

- Reflective thinking is a form of mental processing with a purpose and outcome applied to ideas for which there is no obvious solution (Moon, 1999).

- Reflective thinking is a process of gathering information about a situation, analyzing multiple influencing variables, and forming/testing a hypothesis (Langer & Colton, 1994).

- Reflective thinking is an inquiry into the motives, methods, materials, and consequences of actions, decisions, and practices (Norton, 1994).

- Reflective thinking involves the capacity to think creatively about goals, practices, and decisions (Lasley, 1992).

- Reflective thinking is a cognitive process that involves a deliberate pause to examine beliefs, goals, and practices to improve student lives (Dewey, 1933).

- Reflective thinking is inquiry-based and centered on a problem (Dewey, 1933).

- Reflective thinking is a meaning-making process that requires planning according to ends-in-view (Dewey, 1933).

- Reflective thinking necessitates interaction with others and has the potential to change individuals (Dewey, 1933).

- Reflective thinking includes attitudes of open-mindedness, whole-heartedness, and responsibility (Dewey, 1933).

- Reflective teachers reflect-on-action and evaluate circumstance and determine solutions. (Schön, 1983)

- Reflective teachers regularly analyze and evaluate decisions and actions (Taggart & Wilson, 2005).

- Reflective teachers are continuously self-questioning and learning (Osterman & Kottkamp, 2004).

- Reflective teachers seek multiple perspectives and alternative solutions (Taggart & Wilson, 2005).

- Reflective teachers plan, monitor, evaluate, and modify actions as well as consciously and carefully engage in experimentation (Taggart & Wilson, 2005).

- Reflective teachers engage in ongoing problem-solving inquiry approach focused on student needs, learning and development (Taggart & Wilson, 2005).

- Reflective teachers align actions with new understanding (Taggart & Wilson, 2005).

- Reflective teachers question their actions and goals (Taggart & Wilson, 2005).

- Reflective teachers are responsible for own learning (Taggart & Wilson, 2005).

- Reflective teaching leads to greater knowledge and understanding of problems/solutions (Taggart & Wilson, 2005).

- Reflective teachers engage in critical reflection that focuses on moral and ethical issues of social compassion (Taggart & Wilson, 2005).

Rebecca's critical-incident writing explained a problem in which the solution required careful planning, monitoring, evaluating, and modifying actions through experimentation and testing a hypothesis.

APPENDIX E: LAURA'S OBSERVATION AND CRITICAL INCIDENT

Description of Classroom Observation

Laura's fifth grade reading class began with the established routine of gathering folders and books and handing in homework assignments. The students copied the learning objectives written on the board in their notebooks as Laura took attendance. The students were excited about working in small group literature circles. As one student entered the classroom, she said to the teacher, "We only have four more pages from being done!"

Laura instructed the students to sit in their literature circle groups. Each group was reading a different book based on their reading levels. Each student had a copy of the literature circle book as well as an individual library book. One student asked the teacher, "Are we going to read *Black Beauty* today?"

Laura explained that the day's activity was a continuations of the assignment from the prior class in which each student selected a main character from the literature circle book and made "judgments" (inferences) about the character. Laura told the students that they would find textual evidence to support their "judgments." She also encouraged the students to add more inferences about their characters as they continued reading in their groups. She explained that textual evidence includes characters' actions, feelings, and thoughts. Laura elicited examples of character inferences from the students and wrote them on the board. Next, she asked for examples of the character's actions, feelings, and thoughts that supported the inference and wrote the responses on the board.

Laura explained that after the students add textual support for their inferences and finished their books, they would use the information to create an art project. The students

were excited about the idea of an art project. Using the student examples written on the board, Laura modeled the requirements of the art project. She drew a figure of a character and asked the students to identify the example on the board that showed how the character felt. She then drew a heart on the character's chest, wrote the example in the heart, and said, "This represents what the character feels." Next, she asked the students which example showed what the character was thinking. She pointed to the character's head and said, "The head represents what the character thinks, so I am going to write the example next to his head." Laura then asked the students for the example that showed the character's actions. The example selected described how the character's commitment to running track daily showed he was determined. Laura asked the students for suggestions for illustrating how the character's actions showed determination, and a student suggested drawing running shoes on the character with the statement: "He practices running every day, so he can win the race." Laura complimented the student and then checked for understanding of the art project requirements. The students were eager to finish their books and begin the project.

Laura instructed the students to take turns reading aloud in their small groups and to write down and discuss judgements about the characters as they read. The students took turns reading aloud and identifying and discussing judgements about characters. Laura walked around the classroom and listened to each group as they read and discussed their books. She asked the students questions including, "What examples from the book make your judgement true?" She also reinforced their ideas by saying, "You're on the right track" and "Write that down." Based on the discussions with the students, it was evident that Laura had read all the books used for the activity. She continued to join each

group's discussion and added guiding questions to promote critical thinking about the characters. Reciprocal feedback between the teacher and the students was evident from the students' eagerness to share their insights and ask questions. The classroom environment was collaborative, and the students felt comfortable taking risks sharing ideas and asking questions.

While Laura circulated around the room, the students continued to work independently in their small groups, taking turns reading aloud and pausing to write down their judgement ideas and supporting evidence. One group of students discovered that the main character in the literature circle book is diagnosed with leukemia, and the students appeared concerned after one student explained to the others the seriousness of the illness. Laura observed the conversation as the students provided explanations and supported for one another.

Laura visited with each small group multiple times, asking questions about the characters and reminding students to write the textual evidence and judgements about characters in their notebooks. Laura overheard a student tell his group that was reading a graphic novel with mostly illustrations, "I'll copy off of you." Laura redirected the student by asking questions that engaged all the students in the group. As the students answered the questions, Laura waited patiently while each student independently took notes. The students continued to take notes independently after Laura circulated to another group discussion. The student who asked to copy asked the group how to spell "castle." The student's peer said, "It's right there on page 16." The student turned to page 16 and asked, "Which word is 'castle.'" The peer pointed to the word on page 16, and the student wrote the word in his notebook. In another group, a student struggled to find the

best choice of words for his notes. He asked, "Is 'requests' the best word or 'demands?'" Laura encouraged the group to help determine the best word to use by asking questions and allowing the group to decide.

One group of students that was reading *The Summer of the Swan* paused from reading aloud to ask questions to each other. When the group could not answer a question independently, they continued reading aloud and waited for the teacher-group conference. Laura used guided questions that elicited inferences and enabled the students to answer their own questions. Each time a student made an inference, Laura asked for evidence from the text. When students were unable to make inferences, Laura instructed them to turn to a particular page and reread a paragraph. She also got a copy of the book and turned to particular pages, reading paragraphs aloud, and then asking students questions about what she read. Laura explained, "Sometimes you have to reread a section and think about it. Sometimes you have to think about the way your voice sounds when you read it."

Laura visited with a group who had finished their book, and she checked to see if each student's character analysis and textual evidence was sufficient to start the art project. One group member was reevaluating her initial judgement of a character, and Laura engaged the group in the discussion. The students gathered the art supplies for the character illustrations, and one student said, "This is going to be hard." Laura was pleased that they each selected different characters to illustrate. She encouraged them to discuss their notes with each other and to share ideas. Laura returned to the students reading the graphic novel. They had remained on task since her last interaction with them. She reviewed their notes and offered praise. At the end of class, Laura asked the

entire class if any student would like to share his/her character analysis. The students were eager to share their analyses with their peers.

During the observation, there was a buzz in the room as students read aloud in their small groups. The students were engaged as they listen to their peers read aloud, and at the end of each student's reading, their peers asked questions, shared ideas, and took notes. There was a sense of collaboration and respect, and students were not distracted by other groups or the teacher's presence. The students were focused on the discovery and sharing of ideas and there was a sense that they enjoyed what they were reading.

Laura's instructional practices and interactions with her students revealed an emphasis on differentiated instruction; student collaboration, discovery, and sharing ideas; and fostering a passion for reading. The following instructional practices and student interactions related to reflective teaching were observed:

- Reflective thinking involves planning according to ends-in-view (Dewey, 1933).

- Reflective thinking necessitates interaction with others (Dewey, 1933).

- Reflective thinking starts with an awareness of a problem or uncertainty and ends with a judgment about the problem (Dewey, 1933).

- Reflective thinking requires an attitude of open-mindedness, whole-heartedness, and responsibility (Dewey, 1933).

- Reflection-in-action occurs when the teacher identifies and selects practical solutions while in the midst of a situation Schön, 1983).

- Reflective teachers planning, monitor, evaluate, and modify actions consciously and carefully (Taggart & Wilson, 2005).

- Reflective teachers focus on student needs, learning, and development (Valli, 1997).

- Reflective teaching leads to higher student learning outcomes (York-Barr, et al., 2001).

- Reflective teaching leads to an increased repertoire of instructional strategies (Zeichner & Liston, 1987).

- Van Manen's practical action level of reflective thinking focuses on student needs (Van Manen, 1977).

- Van Manen's critical reflection level considers the value of knowledge and the social context (Van Manen, 1977).

Critical Incident

Laura described a critical incident that occurred in 2008 when she was teaching fifth grade in a different rural school district. She indicated that it had been almost 20 years since she had taught fifth grade, and because of this, she had to study the instructional materials each night to prepare for the upcoming lessons and instructional activities. She explained that the fifth grade state standards for social studies included specific topics and concepts that she was required to teach, and she discovered that the district textbook did not include adequate information about the standard for teaching "daily life of the colonist." She realized that additional resources beyond what was readily available at her school were need to help students understand life in America over 200 years ago. Laura indicated that she first went to a colleague who had taught fifth grade for many years, and the teacher was eager to help. Laura was surprised when the colleague removed a coloring sheet from a file cabinet and said, "Here ya, go. We do this

every year, and the kids love. We hang the colored pictures on the wall." There were no other resources or ideas that were shared. She then sought help from two other fifth grade teachers, who all produced the same coloring sheet and no other ideas or resources.

Laura described her feelings and thoughts at the time of the incident and why she perceived the incident as critical. She explained that she immediately felt "empathetic" because she realized that her peers needed as much help as she did, but they did not realize it. She felt the situation was critical because she knew that in order for fifth grade students to understand the complexities of the different social groups' daily lives during colonial times, they needed more information than a coloring sheet or what was in the social studies textbook. She believed that she needed to figure out a way to make the topic clear for her students and all the fifth grade students at her school.

Laura described assumptions that she had at the time of the incident and explained which assumptions were accurate and valid and which assumptions were inaccurate and invalid. Laura stated she assumed the fifth grade teacher who had taught fifth grade social studies for over 20 years would have an abundance of resources and knowledge related to the state mandated topic of daily life of colonists. She stated that she also assumed that the three teachers she collaborated with would provide additional resources after they had a chance to reflect on the topic. Laura used the coloring sheet like the other fifth grade teachers and her assumption that students needed more instruction to understand the topic was confirmed. She described how she started searching for additional resources online and discovered an invitation to apply for a fellowship to Colonial Williamsburg. Laura explained that she applied for the fellowship and was accepted and the experience changed her life. She received a trip to Williamsburg for five

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days where she learned about daily life as a colonist and received instructional materials and ideas to share with her students and colleagues. When Laura returned from the trip, she presented the information she learned and distributed resources to colleagues in her district. She organized her first "Colonial Day" for fifth graders, which she presently continues. During "Colonial Day," students dress in period clothing; the music teacher teaches colonial music; the PE teacher teaches colonial dances; students present different trades of colonial times; and students perform debates and skits.

Laura described how she believes reflection was relevant both during and after the critical incident. She indicated how reflection during the critical incident led her to pursue better resources to teach her students about colonial life as well as the Williamsburg fellowship experience and the organization of "Colonial Day." She indicated that she continues to reflect about this topic, and each years makes improvement and changes to the activities. The incident taught her go the extra step to make learning engaging and relevant for students.

Based on Laura's critical-incident writing, the following reflective thinking and teaching characteristics were noted:

- Reflective thinking is inquiry-based and centered on a problem or experience (Dewey, 1933).

- Reflective thinking starts with an awareness of a problem or uncertainty of a situation and ends with a judgment (Dewey, 1993)

- Reflective thinking enables teachers to plan according to ends-in view (Dewey, 1933).

- Reflective thinking requires an attitude of open-mindedness, whole-heartedness, and responsibility (Dewey, 1933).

- Reflective thinking prevents instructional practices from being stagnant and routine (Dewey, 1933).

- Reflective thinking prevents teachers from staying trapped in unexamined judgments, assumptions, interpretations, and expectations (Larrivee, 2000)

- Reflection-on-action enables teachers to evaluate circumstances and determine solutions for future actions (Schön, 1983).

- Reflective teachers regularly analyze, evaluate, and strengthen the quality and effectiveness of instructional decisions (Taggart & Wilson, 2005).

- Reflective teachers examine beliefs, goals, and practices to gain new and/or deeper understanding that leads to actions that improve learning for students (Montie, York-Barr, & Kronberb, 1998).

- Reflective teachers continuously engage in self-questioning, learning, and discovery (Osterman & Kottkamp, 2004).

- Reflective teachers seek multiple perspectives and alternative solutions (Taggart & Wilson, 2005).

- Reflective teachers are responsible for their own learning (Taggart & Wilson, 2005).

- Reflective teachers identify and analyze problem and solutions from an educational, social and ethical perspective (Rodgers, 2002).

- Reflective teachers consider context and pedagogical factors when determining actions and goals (Zeichner & Liston, 1987).

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- Reflective teachers utilize problem-solving inquiry (Dewey, 1933).

- Reflective teachers focus on student needs, learning, and development (Valli, 1997).

- Reflective teachers are committed to improving their practices and challenging existing practices (Osterman & Kottkamp, 2004).

- Reflective teachers align action with new understanding (Taggart & Wilson, 2005).

- Reflective teachers are committed to professional development and are responsible for own learning (Taggart & Wilson, 2005).

- Reflective teachers question actions and goals (Taggart & Wilson, 2005).

- Reflective teachers value critical thinking (Taggart & Wilson, 2005).

- Reflective teaching includes Van Manen's practical action level of reflective thinking in which teachers clarify assumptions, determine the worth of competing educational goals, examine goals and reasons for selecting instructional practices, evaluate goals as they relate to student achievement (Van Manen, 1977).

- Reflective teaching leads to professional growth and self-directed responsibility for improving teaching. (Van Manen, 1977)

Laura's critical-incident writing identified a problem that required her to challenge existing practices and take ownership of her own learning and discovery.

APPENDIX F: SANDY'S OBSERVATION AND CRITICAL INCIDENT

Description of Classroom Observation

Sandy's tenth-grade English class was reading Shakespeare's *Romeo and Juliet*. Several students read the characters' lines aloud and the remaining students listened and participated in discussions about the play. Sandy included technology as needed to support student comprehension. Displayed on a whiteboard was a copy of the play: on the left side of the screen was the original version of the scenes and on the right side of the screen was a modern version of the scenes. For this activity, Sandy had the modern text covered.

As the students read the lines from the play, Sandy strategically stopped the reading to ask the students specific questions about the setting, characters, vocabulary, etc., providing guidance when necessary. In addition to checking for understanding, Sandy initiated judgment questions about the play. The students offered their interpretations of the characters' dialogue, actions, and reactions to events. When Sandy asked students for the meaning of specific words in the play, the students felt comfortable taking risks and sharing their inferences and ideas even when they were incorrect. For example, the students were eager to discuss the modern interpretation of Shakespeare's phrase "robbing the cradle."

Through guided questioning and a sense of humor, Sandy encouraged students to analyze the text and make predictions and inferences. After an important section of the play was read, Sandy facilitated a whole class discussion, which often included breaking down each line to highlight important concepts, check for understanding, and practice targeted skills. She encouraged her students to make predictions before resuming the read

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aloud. For example, Sandy asked, "What does Caplet mean when he says, 'Let's get the marriage done before you change your mind?'" In another instance, a student paused the reading to ask the class if they knew the meaning of "trunnel" before he got out of his seat to look up the word in a dictionary and share with the class. Repeatedly, various students paused the oral reading of the play to ask questions when something did not make sense. For example, after a student read Juliet's lines, another student questioned Fryar's involvement and multiple students offered their interpretations. Throughout the reading, Sandy provided opportunities for students to compare the context of the play to modern day situations. She asked students how characters in the play are similar to characters in 21st century literature, television, and movies as well as how events in the play relate to the real world and historical situations.

Sandy also included mini lessons on language and vocabulary. For example, she discussed apostrophe and consonant vowel omission, how to use context clues to discern the meaning of unfamiliar vocabulary, and ways affixes can aid in understanding unfamiliar words. At one point, a student read the word "ho" in the play and the class burst into laughter. Sandy used this opportunity to explain the meaning of the word in the context of the play, and the students discussed how the English language has evolved to have new meanings. In another example, Sandy used the familiar literature of J. K. Rowling's *Harry Potter* to provide a reference for the meaning of the word "mandricks" in Shakespeare's play.

The instructional activity demonstrated a safe, collaborative learning environment in which the teacher facilitated student-led learning. The students were empowered to figure out important ideas, interpret archaic language, make predictions, and connect

concepts to real world experiences. Below are examples of teacher-guided questions

utilized to connect the students with the text:

"What was this conversation about?"

"What is happening here?"

"So, what did he just say?"

"Do you think Romeo knows about . . ."

"What does it mean when . . ."

"What is Juliet thinking at this moment?"

"What is Juliet's worse fear?"

"What do you think is going to happen?"

"What just happened?"

Sandy's instructional practices and interactions with her students revealed an

emphasis on reader connection to texts. In addition, the classroom activity and

interactions fostered a safe, collaborative environment in which the teacher facilitated

student-led learning. The following instructional practices and student interactions related

to reflective teaching were observed:

- Reflective thinking starts with an awareness of a problem or uncertainty and ends

  with a judgment about the problem (Dewey, 1933).

- Reflective thinking requires an attitude of open-mindedness, whole-heartedness,

  and responsibility (Dewey, 1933).

- Reflection in action occurs when the teacher identifies and selects practical

  solutions while in the midst of a problematic situation (Schön, 1983).

- Reflective teachers consider context when determining actions and goals (Osterman & Kottkamp, 2004).

- Reflective teachers focus on student needs, learning, and development (Valli, 1997).

- Reflective teaching leads to an increased repertoire of instructional strategies (Zeichner & Liston, 1987).

- Reflective teaching leads to self-awareness and understanding of potential issues (Dewey, 1933).

- Reflective teaching leads to higher student learning outcomes (York-Barr, et al., 2001).

- Van Manen's practical action level of reflective thinking focuses on student needs (Van Manen, 1977).

- Van Manen's critical reflection level considers the value of knowledge and the social context (Van Manen, 1977).

Critical Incident

Sandy described her decision to take the maximum amount of time (two years) to finish the National Board certification process. She described the certification process as extremely time consuming, so she had to make the decision to not let it be life-consuming and take precedence over raising her three children and being a dedicated teacher to her students. Sandy was confident that she was a good teacher, but acquiring National Board certification required more than good teaching. It required a commitment to long hours necessary to complete the portfolio process and prepare for the timed assessment center exercises.

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Sandy explained how the portfolio process was an intensive writing task, requiring obsessive attention to planning, details, and reflection. For example, the instructions alone contained pages and pages of specifications for the written component of the portfolios. Each portfolio required multiple forms to be completed and signed along with the warning that, if components were missing or incorrect, entries would not be reviewed and scored. After the time spent assessing the basic requirements, the next time-consuming task was identifying and planning the activities for the portfolios. Sandy described this important decision-making step as one of the most challenging in the process. The written analysis of the portfolio activities required an extensive amount of time. For each of Sandy's portfolio entries, she explained that she had to write a lengthy essay that included a description, analysis, and reflection of the classroom practice or professional activity.

In addition to the portfolio component of the certification process, Sandy explained that she also had to prepare for the required assessment center exercises. She studied national standards, concepts that she hadn't taught, ESOL strategies, etc., and she took online practice assessments posted on the NBPTS Web site. She reviewed exercise descriptions, scoring guidelines, and rubrics to ensure she had a clear understanding of the expectations.

Sandy shared her feelings and thoughts that she had at the time of the incident and why she perceived the incident as critical. She explained how she struggled with the decision to be like her peers and spend more time on the National Board portfolio entries at the expense of losing valuable time with her young children. She also explained how she wanted to maintain her commitment to classroom instruction in the classes not

utilized for the portfolio process. Sandy described how she sometime felt like a "loser" when she heard peers say, "I got my certification in the first year." Sandy perceives this event as critical because of its impact on her daughters. Sandy explained that her two daughters are now in college on academic scholarships. Sandy said placing a priority on her daughters helped them score a 32 on their ACTs and have an "active and engaged" life when they left home. Sandy said, "I did the right thing. They are on their way to achieving great things."

Sandy described assumptions she had at the time of the incident and explained which assumptions were accurate and valid and which assumptions were inaccurate and invalid. She assumed as a single mom raising three daughters that her priorities should first focus on parenting. She stated that she believes this assumption is accurate. The second assumption was that she played an important role in her students' academic success and that all students should receive her full attention and consideration. Pressuring herself to finish the portfolio entries within a short timeframe might have resulted in less time and consideration given to other students and classes not utilized in the portfolio entries. Sandy noted that the assumption about her being inadequate if she did not finish her National Board certification in one year was incorrect.

Sandy described how she believes reflection was relevant both during and after the critical incident. She indicated how reflection during the critical incident led her to prioritize and maintain work-life balance and enabled her to be a good teacher and mother while achieving personal goals.

Based on Sandy's critical-incident writing, the following reflective thinking and teaching characteristics were noted:

- Reflective thinking involves critical questioning and discovery of positive and negative information concerning quality and status of actions (Bright, 1996).

- Reflective thinking is the process of describing, informing, confronting, and reconstructing meaning-making and understanding of actions (Smyth, 1996).

- Reflective thinking is a form of mental processing with a purpose and outcome applied to ideas for which there is no obvious solution (Moon, 1999).

- Reflective thinking is an inquiry into the motives and consequences of actions and decisions (Norton, 1994).

- Reflective thinking involves the capacity to think self-critically about decisions (Lasley, 1992).

- Reflective thinking is a cognitive process that involves a deliberate pause to examine beliefs, assumptions, and goals (Dewey, 1933).

- Reflective thinking is a meaning-making process that requires planning according to ends-in-view (Dewey, 1933).

- Reflective thinking includes attitudes of open-mindedness, whole-heartedness, and responsibility (Dewey, 1933).

- Reflective teachers reflect on action and evaluate circumstance and determine solutions (Schön, 1983).

- Reflective teachers regularly analyze and evaluate decisions and actions (Taggart & Wilson, 2005).

- Reflective teachers are continuously self-questioning (Osterman & Kottkamp, 2004).

- Reflective teachers question their actions and goals (Taggart & Wilson, 2005).

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- Reflective teachers are responsible for own learning (Taggart & Wilson, 2005).

- Reflective teaching leads to greater knowledge and understanding of problems/solutions (Taggart & Wilson, 2005).

- Reflective teachers engage in critical reflection that focuses on moral and ethical issues (Taggart & Wilson, 2005).

Sandy's critical incident identified a problem that required her to evaluate assumptions and align understanding with actions.

APPENDIX G: HELEN'S OBSERVATION AND CRITICAL INCIDENT

Description of Classroom Observation

Helen began her eleventh-grade AP III English class by collaborating with various students who have upcoming excused absences for school-related events. Helen offered to provide assignment information and praised the students for recently receiving school-related awards and leadership positions. Students asked about midterms, and Helen provided information to ease the students' anxieties.

Helen instructed the students to review her feedback on their power write assignments for homework. The prompt for the power write was about freedom and many students had narrowed their topic to explain how their school does not offer students the freedom they need or deserve. Helen told the students that their responses "are relevant to things I have seen." She complimented students for their responses to the power write prompt and asked how they thought they would have performed on the AP exam if they had received a similar topic? Helen then offered suggestions for improving their responses to the power write assignment. She used examples of students' introductory paragraphs that included a "hook" to get the reader's attention. Various students shared their methods for capturing the reader's attention in the introductory paragraph. For example, one student explained how he used a catchy phrase and another student shared how she used an anecdote. Helen encouraged the students to review the feedback and make revisions as needed to their power write responses.

Helen explained that the purpose of the day's class was to prepare the students for the upcoming College Board AP English exam. She asked the students if they had reviewed the AP terms night before for the quiz and indicated there was another way to

study that they would try in that day's class. She called the study method quiz-quiz-trade-grade. Helen distributed cards with AP terms, definitions and examples to each student. Before the activity began, Helen asked the students to self-evaluate their knowledge of the AP terms and volunteer to share their strengths and weaknesses with their peers. Helen asked the students if there were any words that they need help pronouncing, and she shared an example of how she mispronounced terms in her National Board certification renewal video. She told the students, "It doesn't matter if you can pronounce it correctly; it matters if you can recognize it and write about it." Helen's students were eager to hear more about her certification video, and Helen offered to share the video with the class, adding that they were the "stars of the show." Helen then helped individual students pronounce some of the AP terms.

The students then selected a partner and started reviewing the study cards. One student held up the side of the card with the definition of the AP term and the other student identified the name of the AP term. When students struggled to name the AP terms, Helen encouraged their partners to offer hints, including examples from literature. Helen circulated around the room and worked with student partners as needed. Helen paused the study session to ask students to share their strategies for learning the AP terms. Next, the students traded AP study cards and partners and repeated the process of quizzing each other. Throughout the activity, the students were on task and engaged. The students were able to give hints and examples to their partners when needed.

As the students continued to engage in the quiz-quiz-trade-grade activity, Helen met individually with students to give them information about make-up work for both past and future absences. She then circulated to various groups to check for

understanding of the AP terms. Helen allowed for individual learning styles. For example, some students chose to study independently and not engage in the partner quizzing activity. Helen said, "Everyone learns in a different way." As Helen circulated to different groups, the students shared their metacognitive strategies for learning the AP terms.

Helen turned on the computer timer that faced the students and announced that they had four minutes before the independent quiz for a grade. At the end of four minutes, Helen asked the students, "Did you notice any terms that are similar?" She then shared with the students that when she took the quiz, she noticed that paradox and oxymoron are very similar. She asked the students how the terms are different and then asked for examples from literature. Some students shared challenging AP terms, while other students offered ideas for helping their peers better understand the terms.

Helen explained the quiz before she distributed it to the class. She told the students that the quiz would include examples of the AP terms and not the definitions, which would help them on the actual AP exam because they would be asked to find examples of the terms and write about them. She stated, "If you don't remember a term when taking the AP test, write what you saw and explain it like 'I noticed repetition did . . .'" Helen collected the study cards, distributed the quizzes, displayed the AP terms on the whiteboard, and circulated around the room. She gave individual students a thumbs up to see how they were doing and received a thumbs up in return.

When all students were finished with the quiz, T.J instructed them to trade quizzes with another student and told the students, "Academic integrity means when it is wrong, it is wrong." She then reviewed the answers to the quiz by calling on students to

provide the answers. During the review of the quiz answers, Helen reinforced the term anecdote by saying that she saw it used in the students' current writings to hook the reader. She also offered personal strategies she used when she took the quiz a day earlier. She included a mini-lesson about root words and affixes to help students discern the meaning of certain AP terms and provided examples of rhetorical questions. Helen then asks students to write the number of incorrect answers at the top of the quiz and return it to the owner. She said, "This reminds me of a response to the freedom prompt. Someone described how Mrs. J. said 'don't fold – pass it upside down.'" The students appeared to understand the reference.

After collecting the quizzes, Helen distributed the power write responses and the students reviewed the teacher feedback. Helen indicated that she tried to provide helpful, specific comments and asked if there are any questions. One student explained how she used strategies from her speech class to tie the closing paragraph with the beginning paragraph. Helen asked the students, "Do you feel you know the AP terms better after doing today's quiz-quiz-trade? What makes it challenging?" The students explained why certain AP terms are challenging and Helen said, "I will incorporate that next year," and then said, "Next class, let's talk about what I can do differently next year to help students taking the AP exam." She then displayed the semester test schedule on the board and said she would also email the students the displayed information. Before the students leave the class, Helen said, "We are going to practice like we did today until Wed [AP exam date]."

Helen's instructional practices and interactions with her students revealed an emphasis on collaboration, reflection, and respect, as well as empowering her students to

understand their metacognition and connect instructional practices to real world experiences and college readiness. The following instructional practices and student interactions related to reflective teaching were observed:

- Reflective thinking is inquiry-based and centered on an experience (Dewey, 1933).

- Reflective thinking involves a willingness to connect a deeper understanding of an experience to other experiences (York-Barr, Ommers, Ghere, & Montie, 2006).

- Reflective thinking requires an attitude of open-mindedness, whole-heartedness, and responsibility (Dewey, 1933).

- Reflective thinking necessitates interaction with others (Dewey, 1933).

- Reflection in action occurs when the teacher observes his/her own thinking and action as they occur in order to make adjustments (York-Barr, Ommers, Ghere, & Montie, 2006).

- Reflective teachers examine beliefs, goals, and practices to gain a new or deeper understanding that leads to improved student learning (Montie, York-Barr, & Kronberb, 1998).

- Reflective teachers continuously self-question and seek learning and discovery (Osterman & Kottkamp, 2004).

- Reflective teachers seek multiple perspectives (Taggart & Wilson, 2005).

- Reflective teachers focus on student needs, learning, and development (Valli, 1997).

- Reflective teachers welcome advice and critique (Taggart & Wilson, 2005).

- Reflective teachers align action with new understandings (Taggart & Wilson, 2005).

- Reflective teachers are responsible for one's own learning and question actions and goals (Taggart & Wilson, 2005).

- Reflective teaching leads to great self-awareness and new knowledge (Dewey, 1933).

- Reflective teaching increases the repertoire of instructional strategies (Zeichner & Liston, 1987).

- Reflective teaching challenges existing practices (Osterman & Kottkamp, 2004).

- Reflective teaching leads to higher student learning outcomes (York-Barr, et al., 2001).

- Van Manen's practical action level of reflective thinking focuses on student needs (Van Manen, 1977).

- Van Manen's critical reflection level considers the value of knowledge and the social context (Van Manen, 1977).

Critical Incident

Helen described an eleventh-grade student that she taught 20 years ago who was foul-mouthed, temperamental, and immature for his age. She explained that he would often lay his head on the desk during class instead of participating in instructional activities and assignments. He spent a great deal of time in school detention for various infractions. Helen was advised by a teacher who had taught the student the previous year to contact the student's father to discuss the problematic behavior. According to the teacher, conferencing with the student's father improved the student's behavior for at

least a short period of time. Helen met with the student and asked him to be responsible for improving his behavior or she would have to discuss his misconduct with his father. The student agreed to turn in his assignments and engage more in class. A few days later, the student came to class agitated, and he shoved a desk, cursed, and walked out of the classroom slamming the door behind him. Helen had another conference with the student to discuss his behavior, and the student pleaded with Helen to not call his father. Helen told the student that because he had failed to honor his side of the agreement that she would be contacting his father after school.

Helen explained that she had a lengthy conversation with the student's father, who was grateful that he had been contacted and informed of his son's behavior. The father told Helen that he would punish his son at home and to contact him again if his son's behavior did not improve. Helen assumed the student would be grounded by his father, and the student's behavior and work ethic in class would improve.

The student did not return to school for a few days after the conference call with the father. Helen assumed the student was ill, and she admitted that she "secretly relished the peace and quiet his absence brought to the class." Helen decided to check with the school secretary to see if the student's parents had contacted the school to collect their son's assignments. She told the secretary that she had not seen the student since her conference call with his father. To Helen's surprise, the secretary shared with her that the student's father was known to be abusive to his son and shared examples of the abuse including the son having to sleep in the barn instead of his house for punishment, the stepmother making him wash his clothes outside and refusing to let him eat dinner, etc. Helen wrote that "in rural farming communities, it is common for families to use

punishment to teach respect and hard work ethics." The secretary also informed Helen that the student was diagnosed with attention deficient hyperactivity disorder and had a doctor's prescription for medication to treat it.

Helen felt an overwhelming sense of sympathy for the student. She realized that the reason his clothes were usually dirty and he smelled of body odor was because he often slept in a barn and had washed his clothes using the outdoor water pump and no soap. The student did not care about his grades because he had more significant burdens in his life. Helen realized the reason the student had begged her to not contact his father was because he knew it would result in severe punishment.

Helen stated that she had a lengthy discussion with the student when he returned to school. She apologized to the student for not making an effort to understand reasons for his behavior. Helen wrote "He told me I was the first teacher that ever really talked to him like that." She stated that they both had a better understanding of each other. Helen continued to hold him accountable for his behavior and when his actions warranted detention, that detention was spent with her after school talking. She wrote, "I listened to him, and he knew that I genuinely cared about him."

Helen described the assumptions she had at the time of the incident and which assumptions were accurate and valid and which assumptions were inaccurate and invalid. Helen wrote that her initial assumption that the student's appearance and behavior was due to apathy and laziness was inaccurate. Although she felt strongly about the importance of connecting on a personal level with all her students, she realized she had not done so with this student. She had made the assumption that he did not care because he was immature and lacked value for education. Her assumption about the importance of

connecting with each student proved to be valid. Once Helen made an effort to understand the student's needs, she was able to collaborate with him so that both of their goals were met: for Helen, the goal for the student was positive, productive classroom participation; and for the student, the goal was to avoid severe punishment and to have his basic needs met at home.

Helen indicated that this incident taught her the importance of connecting with students "in ways that have nothing to do with writing skills or grammar concepts." She stated that the incident taught her to reflect on her biases and assumptions and to "find the good in 'bad' students." She noted that she still keeps in contact with the student, including helping him get a tuxedo for the school prom, hugging him at graduation, recommending him for jobs, and meeting his children. Helen wrote she will never forget him because of "the lessons *he* taught *me*."

Based on Helen's critical-incident writing, the following reflective thinking and teaching characteristics were noted:

- Reflective thinking involves critical questioning and discovery of positive and negative information concerning quality and status of actions (Bright, 1996).

- Reflective thinking is the process of describing, informing, confronting, and reconstructing meaning-making and understanding of actions (Smyth, 1996).

- Reflective thinking is a form of mental processing with a purpose and outcome applied to ideas for which there is no obvious solution (Moon, 1999).

- Reflective thinking is an inquiry into the motives, methods, and consequences of actions, decisions, and instructional practices (Norton, 1994).

- Reflective thinking is a cognitive process that involves a deliberate pause to examine beliefs, goals, and practices to improve student lives (Dewey, 1933).

- Reflective thinking is inquiry-based and centered on a problem (Dewey, 1933).

- Reflective thinking necessitates interaction with others and has the potential to change individuals (Dewey, 1933).

- Reflective thinking includes attitudes of open-mindedness, whole-heartedness, and responsibility (Dewey, 1933).

- Reflective teachers reflect on action and evaluate circumstance and determine solutions. (Schön, 1977)

- Reflective teachers regularly analyze and evaluate decisions and actions (Taggart & Wilson, 2005).

- Reflective teachers are continuously self-questioning and learning (Osterman & Kottkamp, 2004).

- Reflective teachers seek multiple perspectives and alternative solutions (Taggart & Wilson, 2005).

- Reflective teachers plan, monitor, evaluate, and modify actions consciously and carefully (Taggart & Wilson, 2005).

- Reflective teachers engage in ongoing problem-solving inquiry approach focused on student needs, learning and development (Taggart & Wilson, 2005).

- Reflective teachers align action with new understanding (Taggart & Wilson, 2005).

- Reflective teachers question their actions and goals (Taggart & Wilson, 2005).

- Reflective teachers are responsible for own learning (Taggart & Wilson, 2005).

- Reflective teaching leads to greater knowledge and understanding of problems/solutions (Taggart & Wilson, 2005).

- Reflective teachers engage in critical reflection that focuses on moral and ethical issues of social compassion (Taggart & Wilson, 2005).

Helen's critical incident identified a situation that required evaluating her underlying assumptions and biases and aligning the new knowledge to her instructional practices and goals.

APPENDIX H: RAMONA'S OBSERVATION AND CRITICAL INCIDENT

Description of Classroom Observation

On the board of Ramona's seventh grade English Language Arts class was the learning objective of the day: "Add figurative language to the students' memoir drafts." Ramona stood at the door to greet the students as they entered the classroom. On the overhead projector was an affix lesson; soft music was playing in the background. The students sat in assigned seats arranged in groups of four. When the bell rang, Ramona said, "Good afternoon ladies and gentlemen" and began to take attendance. During this time, the students engaged in a routine of turning in homework assignments in a designated bin and working on the displayed affix assignment. Ramona reminded the students to turn in their monthly agendas and distributed new agendas for the month. Ramona distributed new school badges, and the students began to shift their focus from the affix assignment to discussing the photos on their badges. Ramona refocused the class by counting, "3 – 2 – 1. Voices should be off, and you should be listening to directions." The students stopped talking and looked at their teacher.

Ramona called on a student to answer a question about the affix assignment, and when the student offered an answer, Ramona asked, "How do you know?" The student was unsure of the answer, and Ramona suggested he use his "resources" (a handout in his notebook) to help him explain how he knew the answer. Ramona continued to ask for volunteers to provide answers to the affix assignment while she monitored student engagement. She instructed a student who was off-task to put away his things and work on the affix assignment. Ramona circulated around the room to ensure the students were on task. She called on individual students to answer questions such as "What is milli?

What is pedi? What is semi?" The students provided responses and explained how they know. Ramona noticed that a student was using a two inch pencil to complete the assignment, so she retrieved a new pencil from her desk, sharpened it, and gave it to the student.

Ramona instructed the students to locate page R32 in their binders and take the page out of the binder and place it on their desks. One student asked, "What is R32?" and Ramona responded "figurative language definitions." Ramona then distributed the students' typed memoir drafts, which she explained were started a month ago. At this time, only the memoir drafts and page R32 were on the students' desks; the students had put their notebooks under their desks. Ramona asked the students to reread their memoirs to refresh their memories. She said, "I read these memoirs, and they are very good, but there is something missing that would make them even better. Do you know what that is?" The students responded, "Figurative language." Ramona replied, "Yes, if we add figurative language to them, they will be awesome. You already used a sound word. What is a sound word called?" The students responded, "Onomatopoeia." Ramona told the students that she liked how they used onomatopoeias in their memoirs and asked, "I wonder what it would be like if you added a personification, or a simile, or a metaphor. I think your memoirs would be pretty close to brilliant. Guess what we are going to do today?" The students responded, "Add figurative language." Ramona smiled and said, "It's kinda freaky to add that, so we are going to get some help."

Ramona informed the students that they would work in small groups, trade papers, and help their peers add figurative language to their memoirs. She divided the students into small groups and assisted one student with clearing his desk of belongs so

that only his memoir and page R32 remained on the desk. She instructed the students to trade papers with a group member and told the students that the reason she had them type their memoirs was to prevent students from having to read illegible handwriting. Ramona instructed the students to read their peers' memoirs.

Ramona asked for a student volunteer to explain the definition of a metaphor and a student used page R32 handout to provide the answer. Ramona repeated the student's response so all the students could hear. Next, Ramona called on another student to read the first two sentences of a memoir and then asked how he could create a metaphor. When the student was unable to provide an example of a metaphor for the memoir, Ramona explained that a metaphor is "calling something by something else," and offered an example. She said, "The memoir is about fishing. How about 'When I went fishing, the fish was a shark.' I called the fish a shark. Now I want you to add a metaphor to your partner's paper."

Ramona circulated around the classroom as the students worked independently reading their peers' memoirs and creating metaphors to add. She instructed the students to stand as soon as they had added a metaphor sentence at the bottom of their peers' memoirs. As the students stood, Ramona reviewed each student's metaphor and provided feedback. For students struggling to create a metaphor, Ramona asked guiding questions. She reminded the students that they were creating a metaphor, not looking for one. She explained that she had read all of the memoirs and there were no metaphors in the current drafts. She conferenced with each student not standing. When all students were standing, indicating that they have created metaphors for their peers' drafts, Ramona called on students to share the metaphors they created. One student read, "Zoey was a puppy

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licking my face." Ramona repeated the metaphor and said, "Zoey is a girl, not a puppy. But he is comparing Zoey the girl to a puppy." Ramona shared a student's metaphor, "Morgan's paper is about a video game. So she wrote, '*Mind Destroyer* is a bomb.' She is comparing the video game *Mind Destroyer* to a bomb."

Ramona instructed the students to sit down and trade papers and then counts "1 – 2 – 3." She called on a student to define a simile. Ramona repeated the student's answer, so all the student could hear. She then asked for an example, and a student said, "The bus was like a zoo." Ramona repeated the example, so all the students could hear, and then complimented the volunteer. Ramona instructed the students to read their peers' memoirs and write a simile at the bottom. Students worked independently to read the memoirs and write a simile at the bottom of the paper. Ramona circulated around the room conferencing with students. She reminded the students to stand up when they had written the simile. Ramona asked for a volunteer to share a simile and a student replied, "His arm was like a gorilla's back." Another student said, "He came close like a cheetah hunting its prey." Each time a student shared, Ramona repeated the example, so all the students could hear, and then offered a compliment.

Ramona instructed the students to sit down and trade papers and then counted "1 – 2 – 3." She called on a student to define hyperbole, and she repeated the definition so all the students could hear. She then instructed the students, "At the bottom of the paper, I want you to add a huge exaggeration." As students worked independently, Ramona circulated around the classroom and conferenced with individual students. She paused to say, "If you are talking, you are not working." She called on a student to tell the class what his memoir was about and the student responded, "Scaring my sister." Ramona said,

"I wish I could hear you, but I'll have to wait for Michael to stop taking first." She then had the students in the group share the hyperbole, simile, and metaphor added to the memoir.

Ramona instructed the students to sit down and trade papers and then counted "1 – 2 – 3." She instructed the students to write down the setting of the memoir using one word. She gave examples, including "house, store, farm, lake." She reminded the students that if they were talking, then they were not working. She then instructed the students to think of another word that started with the same consonant sound as the word they chose for the setting. She asked for a volunteer to tell her the name of the term used to describe a noun, and a student responded "adjective." She instructed the students to add an adjective that describes the setting and reminds the students to make sure the adjective began with the same consonant as the word they used to identify the setting. She asked the students to "think quietly in your head and not out loud." She circulated around the classroom and conferenced with individual students. The students stood after they had written the alliteration at the bottom of the memoir.

When all students are standing, Ramona instructed the students to sit down and trade papers. She asked for a volunteer to define personification and, again, Ramona repeated the definition provided by the student. The students began working independently to add personifications to the memoirs, and Ramona circulated around the room. She asked for volunteers to read examples, which included "The rain clapped as it hit the roof," "The hall knew something was up," and "The crumbs held on for dear life to my cheeks." Ramona repeated the examples and complimented each student.

Ramona instructed the students to circle the onomatopoeia in the memoir and told the students that, if it was missing, to add one at the bottom of the paper. She then asked the students to return the memoirs to the owners and go back to their seats. Ramona started counting backwards, starting with the number 10. She asked the students to review the figurative language added at the bottom of their memoirs and asked students to raise their hands if their peers offered good suggestions. She then asked the students to look at page R32 and determine if there was one more example of figurative language that the memoirs were missing. A student replied, "idiom." Ramona called on a student to define idiom, and Ramona repeated the definition. She then distributed a handout with examples of idioms and instructed the students to use the "cheat sheet" to add an idiom to their memoirs. She said, "Find one that can work in your story, or you can think of one on your own." Ramona then said, "I will know you are done when you return the "cheat sheet" to the back of the room on the paper cutter."

She then asked for volunteers to share the idioms they chose. Students shared idioms and explained the meanings of the idioms. On student said, "I chose 'It's raining cats and dogs.' It means that it is raining really hard." Ramona repeated the student's response. Another student shared, "My sister bit the dust. In my story, it means that she is lost." Again, Ramona repeated the student's response.

Ramona then asked the students to count the number of figurative language examples they had on their memoirs and indicated that there should have been a total of seven examples. She then instructed the students to select the four they like best or create their own. She told the students to put a star next to the figurative language examples that they liked best. Ramona then stated, "Here is the next part of your assignment. Take out a

piece of paper and staple it to your typed memoir." She provided explicit instructions for titling the paper, including adding a page number to the paper and adding the title to the table of contents in their binders. She informed the students that on Monday, they would begin rewriting their memoirs to include the selected figurative language. The students turned in their assignments and returned their binders to a designated location in the classroom.

Ramona's instructional practices and interactions with her students revealed an emphasis on organizational skills and responsibility applicable across content areas and real world experiences. It also emphasized collaboration, sharing ideas, and taking risks. The following instructional practices and student interactions related to reflective teaching were observed:

- Reflective teachers plan according to ends-in-view (Dewey, 1933).
- Reflective thinking starts with an awareness of a problem or uncertainty of a situation and ends with a judgment (Dewey, 1933).
- Reflective thinking necessitates interaction with others (Dewey, 1933).
- Reflective thinking requires an attitude of open-mindedness, whole-heartedness, and responsibility (Dewey, 1933).
- Reflection-on-action occurs when the teacher identifies and selects practical solutions while in the midst of a problematic situation (Schön, 1983).
- Reflective teachers plan, monitor, evaluate, and modify instruction consciously and carefully (Taggart & Wilson, 2005).
- Reflective teachers consider context when determining actions and goals (Osterman & Kottkamp, 2004).

- Reflective teaches are focused on student needs, learning, and development (Taggart & Wilson, 2005).

- Reflective teaching leads to self-awareness and understanding of problems (Dewey, 1933).

- Reflective teaching leads to increased repertoire of instructional strategies (Zeichner & Liston 1987).

- Reflective teaching leads to higher student learning outcomes (York-Barr, et al., 2001).

- Van Manen's technical rationality level of reflective thinking focuses on the most efficient method of achieving a predetermined goal (Van Manen, 1977).

- Van Manen's practical action level of reflective thinking focuses on student needs (Van Manen, 1977).

- Van Manen's critical reflection level considers the value of knowledge and the social context (Van Manen, 1977).

Critical Incident

Ramona's critical incident occurred at a campus meeting at her former school with all seventh grade English Language Arts (ELA) teachers, the principal, the counselor, and the reading specialist. The group met regularly to discuss student progress, and during a particular meeting, the ELA teachers were reviewing the students' scores on the first high stakes writing assessment. The information was organized by teacher's name with a list of each student and the overall score the students received on the writing assessment with one being the lowest score and four being the highest score. Ramona's student scores were significantly higher than her colleagues, so she was asked to share

with the group how her students had achieved the high scores. Ramona explained her instructional practices for teaching writing, including showing the students the rubric used to grade each stage of the writing process. When Ramona finished her explanation, the principal asked the other teachers if they also shared the rubric with their students. Ramona's colleagues indicated that they did not share the rubric with their students. The principal told Ramona that it was prohibited to share the high stakes rubric with the students because it put the students at an unfair advantage; therefore, her students' scores could not be counted towards the school's annual yearly progress.

Ramona perceived the incident as critical because she strongly believes it is "crucial for students to have a full understanding of what and how they will be graded." Ramona indicated "writing is an intimidating process for seventh grade students, and based on my experience, students gain a sense of empowerment when they have a full understanding of criteria and expectations." Being told by her principal that she was wrong in sharing the rubric with her students caused Ramona to critically evaluate her understanding about the writing process and how she taught it. Ramona stated that she thought sharing the criteria in the rubric was something that all teachers did prior to having students start the writing process. Ramona wrote, "If I am looking for a specific skill in student writing, I feel the students need to know exactly what I am going to be looking for." Ramona strongly believed that her students' scores demonstrated the importance and consequences of this practice. She described how her colleagues also questioned her decision to share the rubric with her students and felt it was cheating. This reaction from her peers further compelled Ramona to reevaluate her instructional practices and beliefs about student learning.

Ramona described her process of evaluating her instructional practices and beliefs. She explained how she critically evaluated the resources she utilized, read several articles about the importance of sharing a rubric with students early in the writing process, and met with the district's curriculum specialists to get her perspective. Each component of Ramona's evaluation reinforced her practice of sharing grading rubrics with students as an important component of the writing process.

Ramona identified her assumptions at the time of the critical incident that were accurate and valid and her assumptions that were invalid and inaccurate. Her assumption that students should be exposed to grading rubrics as part of the writing process was validated by the research that she did. The assumption that all teachers share the rubric with their students as part of the writing process was inaccurate.

Ramona explained that after her critical reflection of her instructional practices, she requested a meeting with the seventh grade teachers, the principal, the counselor, and the reading specialists to present her findings and promote the importance of sharing grading rubrics with students prior to having them begin any writing process. Ramona wrote that she was compelled to present the information on behalf of all seventh grade students taking high stakes assessments. She knew her students had worked hard to receive high scores and deserved to have these scores counted as part of the district's annual yearly progress. In addition, she felt it was important to present her research and reflection on behalf of students not in her class who deserved to have a clear understanding of expectations and required criteria before starting a writing assignment.

Based on Ramona's critical-incident writing, the following reflective thinking and teaching characteristics were noted:

- Reflective thinking is inquiry-based and centered on a problem or experience (Dewey, 1933).

- Reflective thinking starts with an awareness of a problem or uncertainty of a situation and ends with a judgment (Dewey, 1933).

- Reflective thinking enables teachers to plan according to ends-in view (Dewey, 1933).

- Reflective thinking requires an attitude of open-mindedness, whole-heartedness, and responsibility (Dewey, 1933).

- Reflective thinking prevents teachers from staying trapped in unexamined judgments, assumptions, interpretations, and expectations (Larrivee, 2000).

- Reflection on action enables teachers to evaluate circumstances and determine solutions for future actions (Schön, 1977).

- Reflective teachers regularly analyze, evaluate, and strengthen the quality and effectiveness of instructional decisions (Taggart & Wilson, 2005).

- Reflective teachers examine beliefs, goals, and practices to gain new and/or deeper understanding that leads to actions that improve learning for students (Montie, York-Barr, & Kronberb, 1998).

- Reflective teachers continuously engage in self-questioning, learning, and discovery (Osterman &Kottkamp, 2004).

- Reflective teachers seek multiple perspectives and alternative solutions (Taggart & Wilson, 2005).

- Reflective teachers are responsible for their own learning (Taggart & Wilson, 2005).

- Reflective teachers identify and analyze problem and solutions from an educational, social, and ethical perspective (Rodgers, 2002).

- Reflective teachers consider context and pedagogical factors when determining actions and goals (Zeichner & Liston, 1987).

- Reflective teachers utilize problem-solving inquiry (Dewey, 1933).

- Reflective teachers focus on student needs, learning, and development (Valli, 1997).

- Reflective teachers are committed to improving their practices and challenging existing practices (Osterman & Kottkamp, 2004).

- Reflective teachers align action with new understanding (Taggart & Wilson, 2005).

- Reflective teachers are committed to professional development and are responsible for own learning (Taggart & Wilson, 2005).

- Reflective teachers question actions and goals (Taggart & Wilson, 2005).

- Reflective teachers value critical thinking (Taggart & Wilson, 2005).

- Reflective teaching necessitates interaction with others (Dewey, 1933).

- Reflective teaching includes Van Manen's practical action level of reflective thinking in which teachers clarify assumptions, determine the worth of competing educational goals, examine goals and reasons for selecting instructional practices, evaluate goals as they relate to student achievement (Van Manen, 1977).

- Reflective teaching leads to professional growth and self-directed responsibility for improving teaching. (Van Manen, 1977)

Ramona's critical incident identified a problem that required her to challenge existing

practices and take ownership of her own learning and discovery to improve student

learning and success.

REFERENCES

Allen, L. (2010). A critique of four grounded theory texts. *The qualitative report*, *15*(6), 1606-1620. Retrieved from http://www.nova.edu/ssss/QR/QR15-6/allen.pdf.

Allen, R., & Cabergue, R. (1997). Evolution of novice through expert teachers' recall: Implications for effective reflection on practice. *Teaching and Teacher Education*, *13*, 741-755.

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

Arrendondo-Rucinski, D. (2005). Standards of reflective practice. In Gordon, S. (Ed) *Standards for instructional supervision: Enhancing teaching and learning* (pp. 77-90). Larchmont, NY: Eye on Education.

Ballard, K. (2006). *Using Van Manen's model to assess levels of reflectivity among preservice physical education teachers*. Retrieved from http://repository.tamu.edu/bitstream/handle/1969.1/4373/etd-tamu-2006B-KINE-Ballard.pdf?sequence=1

Belenky, M., Clinchy, B., Goldberger, N., & Tarule, J. (1986). *Women's ways of knowing: The development of self, voice, and mind*. New York, NY: Basic Books.

Bohen, D. (2001). Strengthening teaching through national certification. *Educational Leadership 58*(8), 50-53.

Boudah, D. (2011). *Conducting educational research: A guide to completing a major project*. Thousand Oaks, CA: Sage.

Bright, B. (1996). Reflecting on "reflective practice." *Studies in the Education of Adults*, *28*(2), 162-184.

Brookfield, S. (1987). *Developing critical thinkers: Challenging adults to explore alternatives ways of thinking and acting*. San Francisco, CA: Jossey-Bass.

Brookfield, S. (1990). Using critical incidents to explore learners' assumptions. In J. Mezirow (Ed.) *Fostering critical reflections in adulthood: A guide to transformative and emancipatory learning* (pp. 177-193). San Francisco, CA: Jossey-Bass.

Brookfield, S. (1995). *Becoming a critically reflective teacher*. San Francisco: Jossey-Bass.

Brookfield, S. (2006). *Helping adults learn*. Retrieved from http://www.stephenbrookfield.com/Dr._Stephen_D._Brookfield/Workshop_Materials_files/Adult_Learning_materials.pdf.

Bruacher, R., Case, W., & Reagan, T. (1994). *Becoming a reflective educator: How to build a culture of inquiry in the schools*. Thousand Oaks, CA: Corwin.

Burroughs, R., Schwartz, T., & Hendricks-Lee (2000). Communities of practice and discourse communities: The problem of National Board certification. *Teachers College Record*, *102*, 344-374.

Campbell-Jones, B., & Campbell-Jones, F. (2002). Educating African-American children: Credibility at the crossroads. *Educational Horizons*, *80*(3), 133-139.

Center for the Future of Teaching and Learning. (2002). *California teachers' perceptions of National Board certification: Individual benefits substantial, system benefits yet to be realized.* Santa Cruz, CA: Author.

Charmaz, K. (1994). Discovering chronic illness: Using grounded theory. In B.G. Glaser

    (Ed.), *More grounded theory methodology: A reader* (pp. 65-93). Mill Valley,

    CA: Sociology Press.

Charmaz, K. (2006). *Constructing grounded theory: A practical guide through*

    qualitative analysis. London, England: Sage.

Chittenden, E., & Jones, J. (1997, March). *An observational study of national board*

    candidates as they progress through the certification process. Paper presented at

    the Annual Meeting of the American Educational Research Association, Chicago,

    IL.

Choy, S., & Oo, P. (2012). Reflective thinking and teaching practices: A precursor for

    incorporating critical thinking into the classroom? *International Journal of*

    Instruction, *5*(1), 167-182.

Clark, P. (1994). Learning on interdisciplinary gerontological teams. *Educational*

    Gerontology, 20, 349-364.

Cochran-Smith, M., & Lytle, S. (1999). Relationships of knowledge and practice:

    Teacher learning in communities. *Review of Research in Education, 24,* 249- 302.

Corbin, J., & Strauss, A. (2008). *Basics of qualitative research* (3rd ed.). Thousand Oaks,

    CA: Sage.

Costa, A., & Kallick, B. (2000). Getting into the habit of reflection. *Leadership, 57*(7)*,*

    60-62.

Crotty, M. (1998). *The foundations of social research: Meaning and perspective in the*

    research process. Thousand Oaks, CA: Sage.

Cruickshank, D. (1985). Uses and benefits of reflective teaching. *Phi Delta Kappan*, *66*, 704-706.

Cruickshank, D. (1987). *Reflective teaching: The preparation of students of teaching*. Reston, VA: Association of Teacher Educators.

Darling-Hammond, L. (1998). Teacher learning that supports student learning. *Educational Leadership* 55, 6-11.

Darling-Hammond, L. (2001). Research and rhetoric on teacher certification: A response to "Teacher Certification Reconsidered," *Education Policy Analysis Archives*, *10*(36). Retrieved from http://epaa.asu.edu/epaa/v10n36.html.

Deavers, C. (2009). *National board certification: A reservoir of reflective principals*. Ph.D. dissertation, University of California. (UMI No. 3350030).

Denzin, N., & Lincoln, Y. (2000). Introduction: The discipline and practices of qualitative research. In N.K. Denzin & Y.S. Lincoln (Eds), *The handbook of qualitative research* (2nd ed) (pp. 1-39). Thousand Oaks, CA: Sage.

Denzin, N., & Lincoln, Y. (2003). Introduction: The discipline and practices of qualitative research. In N.K. Denzin & Y.S. Lincoln (Eds.), *Strategies of qualitative inquiry* (2nd ed) (pp. 1-45). Thousand Oaks, CA: Sage.

Dewey, J. (1933). *How we think*. Boston, MA: D.C. Heath.

Dinkelman, T. (1997). The promise of action research for critically reflective teacher educators. *The Teacher Educator, 32*, 250-274. Available from Wilson Web. WBN: 9710500449005.

El-Dib, M. (2007). Levels of reflection in action research. An overview and assessment tool. *Teaching and Teacher Education*, *23*(1), 24-35.

Erginel, S. (2006). *Developing reflective teachers: A study on perception and improvement of reflection in pre-service teacher education.* Ph.D. dissertation, The Graduate School of Social Sciences of Middle East Technical University, Retrieved from http://etd.lib.metu.edu.tr/upload/12607298/ index.pdf.

Feldman, S. (2004, May/June). Students of board-certified teachers excel. *American Teacher*, *88*(8), 2.

Finn, L. (2002). Using video to reflect on curriculum. *Educational Leadership, 59*(6), 72-74.

Gaddis, L. (2002). *Candidate decision-making through the development of the National Board for Professional Teaching Standards portfolio*, Ph.D. dissertation, Illinois State University. (UMI No. 3064512).

Gelter, H. (2003). Why is reflective thinking uncommon. *Reflective Practice*, *4*, 337-344.

Genor, M. (2005). A social reconstruction framework for reflection: The "problematizing" of teaching. *Issues in Teacher Education, 14*(2), 45-62.

Ghaye, T., & Lillyman, S. (2000). *Reflection: Principles and practices for healthcare professionals*. Wiltshire, UK: Quay Books.

Gilles, C., Wilson, J., & Elias, M. (2010). Sustaining teachers' growth and renewal through action research, induction programs, and collaboration. *Teacher Education Quarterly, 37*(1), 91-108.

Glaser, B. (1978). *Theoretical sensitivity: Advances in the methodology of grounded theory*. Mills Valley, CA: Sociology Press.

Glaser, B. (1998). *Doing grounded theory: Issues and discussions.* Mill Valley, CA: Sociology Press.

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

Glickman, C., Gordon, S., & Ross-Gordon, J. (2010). *Supervision and instructional leadership: A developmental approach* (8th ed.). Boston, MA: Allyn & Bacon.

Gore, J., & Zeichner, K. (1991). Action research and reflective teaching in preservice teacher education: A case study from the United States. *Teaching and Teacher Education*, *7*(2), 119-136.

Greene, M. (1988). *The dialectic of freedom*. New York, NY: Teachers College Press.

Guba, E., & Lincoln, Y. (1994). Competing paradigms in qualitative research. In N.K. Denzin & Y.S. Lincoln (Eds.), *The handbook of qualitative research* (2nd ed.), (pp. 105-117). Thousand Oaks, CA: Sage.

Habermas, J. (1971). *Knowledge and human interests*. London, England: Beacon.

Hall, G., & Hord, S. (2006). *Implementing change: Patterns, principles, and potholes* (2nd ed.). Boston, MA: Allyn & Bacon.

Hatton, N., & Smith, D. (1995). Reflection in teacher education: Towards definition and implementation. *Teaching and Teacher Education*, *11*(1), 33-49.

Hiemestra, R. (2001). Use and benefits of journal writing. *New Directions for Adult and Continuing Eduation*, *90*, 19-26.

Hollingshead, B. (2009). The concerns-based adoption model: A Framework for examining implementation of a character education program. *NASSP Bulletin, 93*(3), 166-183.

Holt, S. (1994). Reflective journal writing and its effects on teaching adults. *The year of the review, 3,* 31-54. Retrieved from http://www.eric.ed.gov.libproxy.txstate.edu/PDFS/ED375302.pdf.

Hoover, L. (1994). Reflective writing as a window on preservice teachers' thought processes. *Teaching & Teaching Education*, *10*(1), 83-93.

Hourani, R. B. (2013). Pre-service teachers' reflection: Perception, preparedness and challenges. *Reflective Practice: International and Multidisciplinary Perspectives, 14*(1), 12-30.

Huff, S. (2006). *Teachers' perceptions of the teacher portfolio process*. Ph.D. dissertation, State University of New York at Buffalo, Available from ProQuest Digital Dissertations database. (UMI No. 3213877).

Hutchinson, S. (1993). Grounded theory: The method. In P.L. Munhall & C.O. Boyd (Eds.), *Nursing research: A qualitative perspective* (2nd ed.), (pp. 180-212). New York, NY: National League for Nursing.

Johnson, S. (2001). Can professional certification for teachers reshape teaching as a career? *Phi Delta Kappan 82*, 393-9.

Kanter, L., Bergee, M., & Unrath, K. (2000). National Board certification in art and its potential impact on graduate programming in art education. *Arts and Learning Research Journal, 16*, 226-239.

Kemmis, S., & McTaggert, R. (1988). *The action research planner* (3rd ed.). Geelong, Australia: Deaking Univeristy Press.

King, P., & Kitchener, K. (1994). *Developing reflective judgment: Understanding and promoting intellectual growth and critical thinking in adolescents and adults*. San Francisco, CA: Jossey-Bass.

King, P., & Kitchener, K. (2002). The reflective judgment model: Twenty years of research on epistemic cognition. In B. K. Hofer and P. R. Pintrich (Eds.), *Personal epistemology: The psychology of beliefs about knowledge and knowing*, (pp. 37-61). Mahway, NJ: Lawrence Erlbaum.

Kvale, S. (1996). Interviews: An introduction to qualitative research interviewing. Thousand Oaks, CA: Sage.

Lake, C. (2006). *How national board certification teachers use reflection to improve instruction*. Ph.D. dissertation, Temple University. Available from ProQuest Digital Dissertations database. (UMI No. 3211883).

Langer, G., & Colton, A. (1994). Reflective decision-making: The cornerstone of school reform. *Journal of Staff Development*, *15*(1), 2-7.

Lasley, T. (1992). Promoting teacher reflection. *Journal of Staff Development*, *13*(1), 24-29.

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

Larrivee, B., & Cooper, J. (2006). *An educator's guide to teacher reflection.* Retrieved from http://cengagesites.com/academic/assets/sites/4004/ Education%20Modules/ gd%20to%20teach%20refl.pdf.

Levy, D. (2006). Qualitative methodology and grounded theory in property research. *Pacific Rim Property Research Journal*, *(12)*2, 369-388. Retrieved from http://www.prres.net/Papers/PRRPJ_No_4_2006_Levy.pdf.

Lincoln, Y., & Guba, E. (1985). *Naturalistic inquiry*. Newbury Park, CA: Sage.

Little, J. (2002). Professional communication and collaboration. In W. Hawley & D. Rollie (Eds.), *The keys to effective schools: Educational reform as continuous improvement* (pp. 43-55). Thousand Oaks, CA: Corwin.

Louden, W. (1992). Understanding reflection through collaborative research. In A. Hargreaves and M. Fullan (Eds.), *Understanding teacher development* (pp. 178-215). New York, NY: Teachers College.

Loughran, J. (2002). Effective reflective practice: In search of meaning in learning about teaching. *Journal of Teacher Education*, *53*(1), 33-43.

Lustick, D. (2002, April). *National board certification as a professional development: A study that identifies a framework and findings of teachers learning to manage complexity, uncertainty, and community*. Paper presented at the Annual Meeting of the American Educational Research Association, New Orleans, LA.

Marshall, C., & Rossman, G. (2011). *Designing qualitative research* (5th ed.). Thousand Oaks, CA: Sage.

Mattingly, C. F. (1991). Narrative reflections on practical actions. In D. Schön (Ed.), *The reflective turn: Case studies in and on practice*. New York, NY: Teachers College Press.

Maynard, M. (1994). Methods, practice, and epistemology: The debate about feminism

and research. In M. Maynard & J. Purvis (Eds.), *Researching women's lives from*

a feminist perspective, (pp. 10-26). London, England: Taylor and Francis.

McCann, I., & Radford, R. (1993). Mentoring for teachers: The collaborative approach.

In B. Cadwell and E. Carter (Eds.), *The return of the mentor: Strategies for*

workplace learning (pp. 25-41). Washington, DC: Falmer Press.

McLaughlin, D., & O'Donoghue, T. (1996). *Community teacher education in Papua New*

Guinea. Retrieved from http://www.pngbuai.com/300

socialsciences/education/training/teacher-ed-mclaughlin5of6.htm.

Mezirow, J. (1981). A critical theory of adult learning and education. *Adult Education 32*,

3-24.

Minnott, M. (2008). Valli's typology of reflection and the analysis of pre-service

teachers' reflective journals. *Australian Journal of Teacher Education, 33(5)*, 55-

65.

Monite, J., York-Barr, J., Kronberg, R., Stevenson, J., Vallejo, B., & Lunders, C. (1998).

Reflective practice: Creating capacities for school improvement. Retrieved from

http://eric.ed.gov/?q=%22Kronberg+Robi%22&ff1=autYork-

Barr%2c+Jennifer&id=ED427470.

Moon, J. (1999). *A handbook of reflective and experiential learning: Theory and*

practice. London, England: Routledge.

Moseley, C., & Rain, A. (2002) National board for professional teaching standards: A

reflective essay. *The Delta Kappa Gamma Bulletin*, *68*(4), 44-48.

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

National Board for Professional Teaching Standards. (2004). Backgrounder. Arlington, VA: National Office. .

National Board for Professional Teaching Standards. (2004). Questions and Answers. Arlington, VA: National Office.

National Board for Professional Teaching Standards. (2008). A NBPTS research report. Arlington, VA: National Office.

National Board for Professional Teaching Standards (2011). *Certificate areas*. Retrieved from http://nbpts.org/for_candidates/certificate_areas1.

National Board for Professional Teaching Standards (2014). *Future revisions to national board certification.* Retrieved from http://www.nbpts.org/future-revision- national-board-certification.

National Board for Professional Teaching Standards (2014). *Think systematically & learn from experience*. Retrieved from http://www.nbpts.org/think-systematically-learn- experience.

National Board for Professional Teaching Standards (2016). *Written by teachers, for teachers, what teachers should know and be able to do illuminates the five core propositions for accomplished teaching*. Retrieved from http://www.nbpts.org/ national-board-certification.

National Commission on Excellence in Education. (1983). *A nation at risk: The imperative for educational reform*. Washington, DC: United States Department of

Education.

National Council of Teachers of Mathematics. (2005). National Board certified teachers

top of the class. *NCTM*. Retrieved from file://PHD\NCTM

News&MediaNationalBoardCertifiedTeachersTopoftheClass.htm.

Nieto, S. (2003). Challenging current notions of "highly qualified teachers" through work

in a teachers' inquiry group. *Journal of Teacher Education*, *54*, 386-398.

Norton, J. (1994, February). *Creative thinking and locus of control as predictors of*

reflective thinking in preservice teachers. Paper presented at the Annual Meeting

of the Association of Teacher Educators, Atlanta, GA.

Obama, B. (2008). What is possible for our children. *The Denver Post*. Retrieved from

http://www.denverpost.com/2008/05/28/full-text-of-obamas-education-speech.

Oja, S., & Smulyan, L. (1989). *Collaborative action research: A developmental*

approach. London, England: Falmer Press.

Onosko, J. (1992). Exploring the thinking of thoughtful teachers. *Educational*

Leadership, 49(7),40-43.

Osterman, K. (1990). Reflective practice: A new agenda for education. *Education and*

Urban Society, 22, 133-52.

Osterman, K., & Kottkamp, R. (2004). *Reflective practice for educators: Improving*

schooling through professional development. Thousand Oaks, CA: Corwin.

Palmer, J. (2012). National board certification portfolio process and its influence on

teacher reflection. Ph.D. dissertation, Wilmington University, DE. (UMI No.

3509873).

Park, S., & Oliver, J. (2007). National board certification (NBC) as a catalyst for

    teachers' learning about teaching: The effects of the NBC process on candidate

    teachers' PCK development. *Journal of Research in Science Teaching*, *45*, 812-

    834.

Patton, M. (2002). *Qualitative research and evaluation methods* (3rd ed.). Thousand

    Oaks, CA: Sage.

Petty, T. (2002). *Identifying the wants and needs of North Carolina high school

    mathematics teachers for job success and satisfaction.* Ph.D. dissertation,

    University of North Carolina at Chapel Hill, Available from ProQuest Digital

    Dissertation database. (UMI No. 3070673).

Polk, J. (2006). *A phenomenological study of national board certified teachers use of

    reflective practice to improve pedagogy.* Ph.D. dissertation, University of

    Oklahoma, Available from ProQuest Digital Dissertations database. (UMI No.

    3211364).

Posner, G. (1989). *Field experience: Methods of reflective teaching*. New York, NY:

    Longman.

Riggs, I.M., & Sandlin, R.A. (2000). Teaching portfolios for support of teachers'

    professional growth. *NASSP Bulletin, 84*(618), 22-27.

Rodgers, C. (2002). Defining reflection: Another look at John Dewey and reflective

    thinking. *Teachers College Record*, *104*, 842-866.

Ross, D., & Hannay, L. (1986). Towards a critical theory of reflective inquiry. *Journal of

    Teacher Education*, *37*(4), 9-15.

Rubin, H., & Rubin, I. (1995). *Qualitative interviewing: The art of hearing data* (2nd ed.). Thousand Oaks, CA: Sage.

Russback, S. (2010). The perceived value of reflective thinking by preservice teachers and new teachers in Missouri. Ph.D. dissertation, Arkansas State University, Available from ProQuest Digital Dissertations database. (UMI No. 3397963).

Sagor, R. (2000). *Guiding school improvement with action research*. Alexandria, VA: Association for Supervision and Curriculum Development.

Sato, M. (2000, April). *The national board for professional teaching standards: Teacher learning through the assessment process.* Paper presented at the annual meeting of the American Educational Research Association, New Orleans, LA.

Schneider, P. (1994). *The writer as an artist*. Los Angeles, CA: Lowell House.

Schön, D. (1983). *The reflective practitioner*. New York, NY: Basic Books.

Shulman, Lee (1998) "Teacher portfolios: A theoretical activity" in N. Lyons (Ed.) *With Portfolio in Hand*. (p. 23-37) New York, NY: Teachers College Press.

Schwandt, T. (1994). Constructivist, interpretivist approaches to human inquiry. In N.K. Denzin & Y.S. Lincoln (Eds.), *The handbook of qualitative research*, (pp. 118-137). Thousand Oaks, CA: Sage.

Schwandt, T. (2000). Three epistemological stances of qualitative inquiry: Interpretivism, hermeneutics, and social constructionism. In N.K. Denzin & Y.S. Lincoln (Eds.), *The handbook of qualitative research* (2nd ed.), (pp. 189-213). Thousand Oaks, CA: Sage.

Smyth, J. (1989). Developing and sustaining critical reflection in teacher education. *Journal of Teacher Education*, *40*(2), 2-9.

Sommer, R. (1989). *Teaching writing to adults*. San Francisco, CA: Jossey-Bass.

Spalding, E., & Wilson, A. (2002). Demystifying reflection: A study of pedagogical strategies that encourage reflective journal writing. *Teachers College Record, 104,* 1393-1421.

Sparks-Langer, G., Colton, A., Pasch, M., & Starko, A. (1991). *Promoting cognitive, critical, and narrative reflection* (Report No. 033 326). Chicago, IL: American Educational Research Association. (ERIC Document Reproduction Service No. ED337435).

Stern, P. (1994). Eroding grounded theory. In J.M. Morse (Ed.), In *Critical issues in qualitative research methods* (pp. 210-223). Thousand Oaks, CA: Sage.

Stout, C. (1993). The dialogue journal: A forum for critical consideration. *Studies in Art Education, 35*(1), 34-44.

Strauss, A., & Corbin, J. (1998). Grounded theory methodology: An overview. In N.K. Denzin & Y.S. Lincoln (Eds.), *Strategies of qualitative inquiry*. (pp. 158-183). Thousand Oaks, CA: Sage.

Surbeck, E., Han, E., & Moyer, J. (1991). Assessing reflective responses in journals. *Educational Leadership, 48*(6), 25-27.

Subramanian, M. (2001). Journal writing as a tool for teacher trainees' reflection on teaching. Retrieved from http://www.ipbl.edu.my/inter/penyelidikan /2001/ 2001_man0.pdf.

Sullivan, D. (2011). An examination of national board certified teachers' views of the professional impact of national board certification. Ph.D. dissertation, Aurora University. (UMI No. 3448319).

Taggart, G., & Wilson, A. (2005). *Promoting reflective thinking in teachers: 50 action strategies*. Thousand Oaks, CA: Corwin.

Tracz, S., Sienty, S., Todorov, K., Snyder, J., Takashima, B., Pensabene, R., Olsen, B., Pauls, L., & Sork, J. (1995, April). *Improvement in teaching skills: Perspectives from national board for professional teaching standards field test network candidates.* Paper presented at the annual meeting of the American Educational Research Association, San Francisco, CA.

Tsangaridou, N., & Seidentop, D. (1995). Reflective teaching: A literature review. *Quest, 47*, 212-237.

Unrath, K. (2002). *Reflection, the national board certification process, and its potential impact on national board art teachers and their practice*. Ph.D. dissertation, University of Missour-Columbia, Available from ProQuest Digital Dissertations database. (UMI No. 3052225).

Valli, L. (1997). Listening to other voices: A description of practitioner reflection in the United States. *Peabody Journal of Education, 72*(1), 67-88.

Van Manen, M. (1977). Linking ways of knowing with ways of being practical. *Curriculum Inquiry, 6*(3), 205-228.

Van Manen, M. (1995). On the epistemology of reflective practice. *Teachers and Teaching: Theory and Practice, 1*(1), 33-50.

Wolf, K. (1996). Developing an effective teaching portfolio. *Educational Leadership, 53*(6), 34-37.

Wong, H. (1998). *First days of school*. Mountain View, CA: Harry K. Wong Publications.

Wood, D. (2007). Teachers' learning communities: Catalyst for change or new

    infrastructure for the status quo? *Teacher College Record, 109*, 669-739.

Yinger, R., Clark, M. (1981). *Reflective journal writing: Theory and practice*.

    (Occasional Paper No. 50). East Lansing, MI: Michigan State University. Institute

    for Research on Teaching.

York-Barr, J., Sommers, W., Ghere, G., & Montie, J. (2006). *Reflective practice to

    improve schools: An action guide for educators* (2nd ed.). Thousand Oaks, CA:

    Corwin.

Zeichner, K. (1993). Connecting genuine teacher development to the struggle for social

    justice. *Journal of Education for Teaching*, *19*(1), 5-20.

Zeichner, K., & Liston, D. (1987). Teaching student teachers to reflect. *Harvard

    Educational Review, 11*, 565-576.