

1-1-2010

The National Board Certification Process: A Comparison of the Perceptions of National Board Certified Teachers and National Board Candidates in West Virginia

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THE NATIONAL BOARD CERTIFICATION PROCESS: A COMPARISON OF
THE PERCEPTIONS OF NATIONAL BOARD CERTIFIED TEACHERS AND
NATIONAL BOARD CANDIDATES IN WEST VIRGINIA

A Dissertation submitted to the Graduate College of
Marshall University

in partial fulfillment of the
requirements for the degree of

Doctor of Education

by
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Marshall University
August, 2010

Keywords: National Board certification, National Board of Professional Teaching
Standards, NBPTS, West Virginia, National Board certified teachers, NBCT,
National Board candidates

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ABSTRACT

More than twenty years of research have been devoted to the National Board of Professional Teaching Standards (NBPTS) certification process, much of it focused on the effects of National Board certified teachers (NBCTs) on student achievement. Less attention has been paid to the effects of the process on teachers' skills and practices, while virtually no research has focused on teachers who attempted the process but did not succeed (NB Candidates). Using the NBPTS Five Core Propositions as a basis for survey items and open-ended questions, this mixed-methods study examined and compared the perceptions of West Virginia NBCTs and National Board Candidates (NB Candidates) from 2004-2009. Data indicated that NBCTs perceived the process as having great effect on their teaching practices in five areas: creating a positive learning environment, planning effective instruction, delivering effective instruction, assessing student learning, and belonging to a larger learning community. NB Candidates perceived the process as having moderate effects, at best, on those same practices. Neither group perceived any effect on their knowledge of subject matter. Results also indicated that while the pay raise associated with National Board certification was the primary motivation for both groups, teachers whose motivations included professional development or encouragement from friends and colleagues were slightly more likely to certify. Similarly, teachers who utilized a support group of friends and colleagues were more likely to certify, whereas those who utilized a RESA sponsored support group were less likely to certify. Support components such as deadlines, mentoring, feedback, collegiality, and help with directions were perceived as most important. Ancillary findings included higher certification rates for females in the population as well as higher certification rates for more experienced teachers.

DEDICATION

This study is dedicated to my wife, Lynne, and our daughter, Sarah, who have assisted in more ways than they know and who have made it all worthwhile. This study is also dedicated to every teacher and student I have worked with through the years; I learned something from each of you.

ACKNOWLEDGMENTS

Thanks to the following people who have inspired, assisted and persevered:

- To Dr. Lisa Heaton: your understanding and patience have been invaluable. I could not have had a better guide on this journey.
- To Dr. Rudy Pauley: your belief in me gave me new confidence. Thank you for the many new opportunities made possible as a result.
- To Dr. Edna Meisel: your help with all things statistical has been priceless. With your help, the world of statistics is a less mysterious place.
- To Dr. Sue Hollandsworth: your kindness, patience and understanding are much appreciated.
- To Dr. Noel Bowling and Dr. Caroline Neal: your inspirational teaching set me on new paths many years ago.
- To Dr. Mickey Blackwell: thanks for your help, your encouragement and your commiseration.
- To Rick Justice: your support means more than you know. You can call me Doctor now.
- To the memory of Loren Sheets, whose encouragement helped me take the first step.
- To the memory of my parents, who never got to see the fruition of the seeds they sowed.

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CHAPTER ONE: OVERVIEW OF THE STUDY

Background

From its inception, American education has been constantly shaped by a variety of reform efforts in response to changing educational and curricular theories, cultural and demographic shifts, and political and social events and influences. Landmark world events, such as World War II and the Soviet launch of Sputnik I in 1957, have been the initiators of major reform efforts (Rutherford, 1998), and large-scale cultural changes, such as the Civil Rights Movement of the 1960s, have resulted in nationwide changes to educational policies, curricula, textbooks, and teaching methods (Pinar, Reynolds, Slattery & Taubman, 2004). Since the 1980s, reform efforts have frequently had political origins. The 1983 release of *A Nation at Risk*, written by President Reagan's National Commission on Excellence in Education, resulted in a reexamination and restructuring of almost every aspect of American education, while the passage of President Clinton's *Goals 2000: Educate America Act* in 1994 spurred the beginnings of a movement toward more accountability and increased emphasis on standards (Pastore, 2005). The *No Child Left Behind Act* of 2001, proposed by President George W. Bush and passed with bipartisan Congressional support, continues to influence America's current emphasis on standards-based education, school accountability, research-based instruction, and student achievement (Jorgensen & Hoffman, 2003).

Teacher quality has been a persistent theme throughout these various reform efforts, though attempts to address it have been varied and inconsistent. Teacher certification standards, teacher retention, teacher evaluation, alternative certification methods, as well as merit pay, have all been examined, appraised, and promoted by local, state, and national organizations seeking to improve teacher quality (Pinar, Reynolds, Slattery & Taubman, 2004).

The National Board for Professional Teaching Standards (NBPTS), however, has been a consistent voice calling for improved teacher quality and higher certification standards since 1986. First proposed by American Federation of Teachers president Albert Shanker in 1985, the National Board for Professional Teaching Standards (NBPTS) was created in 1986 when the Carnegie Corporation of New York funded its establishment following the recommendations of the Carnegie Forum on Education and the Economy's Task Force on Teaching as a Profession. The task force's final report, *A Nation Prepared: Teachers for the 21st Century*, called for the creation of a group to "define what teachers should know and be able to do" and "support the creation of rigorous, valid assessments to see that certified teachers do meet those standards" (NBPTS, 2008b, ¶ 3). This initial planning group became the NBPTS Board of Directors, and, led by former North Carolina Governor James B. Hunt, Jr., made the crucial stipulation that the majority of its board members would be teachers currently active in the classroom. In 1989 NBPTS issued its first policy statement, *What Teachers Should Know and Be Able to Do*, which has served as

the basis for its development of standards and included its Five Core Propositions that form the basis for the NBPTS ideal of teaching excellence (NBPTS, 2008p):

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 learn from experience.
5. Teachers are members of learning communities (NBPTS, 2008g).

Since 1994, NBPTS has been certifying teachers in an evolving, though consistently rigorous, process in which candidates provide evidence that they have met NBPTS standards for their grade and content area. Teachers must first meet minimum qualifications: three years of teaching experience, state licensure, and a bachelor's degree (NBPTS, 2008k). Then over the course of a school year, teachers construct four portfolio entries, three of which are content/grade level specific and are classroom based, containing video recordings and/or examples of student work. The fourth portfolio entry is common to all certificate areas and focuses on accomplishments outside of the classroom – with families, community, and colleagues – and how they impact student learning. Teachers must also complete six written assessment exercises designed to test their knowledge in their chosen certificate area. Portfolio entries and written

assessments are scored by a minimum of 12 trained assessors (NBPTS, 2008c). Scores are released the following November, and teachers who do not certify on their first attempt may “bank” their highest scores and retake one or more portfolio entries and/or written assessments (NBPTS, 2008q). Teachers must currently pay a fee of \$2,565 for the first attempt, though payment plans, fee assistance, and scholarships are available (NBPTS, 2008l). Retake candidates must pay a fee of \$350 per portfolio entry or written assessment (NBPTS, 2008q).

NBPTS offers certification in 25 categories covering 15 subjects and seven student age categories. These certificate areas are applicable to more than 95% of America’s teachers (NBPTS, 2008d). Historically, about 40% of candidates certify on their first attempt, and for those who resubmit (this can be done twice, if necessary) the achievement rate increases to 65% (Minichello, J., personal communication, February 4, 2008).

Each NBPTS certificate is valid for a period of ten years, though teachers can recertify if they meet the following conditions: the original 10 year certificate must still be valid, teachers must be in the 8th or 9th year of certification to begin the renewal process, and a teacher’s state teaching license must be current and unencumbered. The current fee for recertification is \$1,150 (NBPTS, 2010v). The recertification process, slightly more streamlined than the initial process, primarily asks teachers to reflect on how their teaching practices continue to support student learning.

From a modest initial certification group of only 144 teachers in 1994, the number of National Board certified teachers (NBCTs) has grown tremendously, with more than 9,600 certified in 2008 and almost 8,900 certified in 2009. More than 82,000 teachers nationwide have achieved National Board certification since its inception with the number more than doubling since 2004. NBCTs make up more than 5% of the total teaching force in seven states (NBPTS, 2008f), and more than half of all NBCTs teach in Title I eligible schools (NBPTS, 2009u). Two-thirds of states offer financial incentives of some type to NBCTs, usually in the form of direct salary supplements. In addition, candidates from all states and the District of Columbia have access to federal fee subsidies, which most states utilize to reimburse candidates' fees. Furthermore, virtually every state accepts National Board certification for license reciprocity and certificate renewal, oftentimes as an equivalent of that state's highest certification ranking (NBPTS, 2008i). Furthermore, National Board certification meets most states' definitions of "highly qualified status" on *No Child Left Behind* legislation (NBPTS, 2008e).

A huge amount of research has been devoted to National Board certified teachers during NBPTS' 25-year history, much of it concerned with student achievement, but the characteristics of exceptional teaching, indicators of teaching quality, teachers' perceptions of the process, and even the validity of the process itself have also been examined. A majority of the research indicates that NBCTs are more effective than their non-certified peers. For example, Vandevort, Amrein-Beardsley, and Berliner (2004) studied third, fourth, fifth, and sixth grade

students in Arizona and concluded that students of NBCTs made achievement gains as much as one month greater over the course of a school year when compared to the students of non-NBCTs. In Alabama, Griffin (2006) surveyed principals regarding the effectiveness of the teachers they supervised, and NBCTs were consistently identified as being the most effective teachers. Other researchers, however, have found NBCTs to have less dramatic effect. Sanders, Ashton, and Wright (2005), for example, assessed student performance on end-of-grade reading and math exams for fourth through eighth grade students in North Carolina and found no significant connection between student achievement and National Board certification. Other researchers have questioned the validity of the process itself, wondering why it is so expensive and time consuming, while many researchers question whether the process is helping teachers improve their practices or merely identifying teachers who were already highly skilled.

In West Virginia, National Board certified teachers have a relatively significant presence. As of December, 2009, West Virginia's 493 NBCTs made up more than 2% of the state's teacher workforce, a number larger than more populous states such as Tennessee (405) and Minnesota (337). From 2006-2009, West Virginia's growth in National Board certified teachers outpaced national growth 71% to 49% (NBPTS, 2008n).

Problem Statement

Lustick and Sykes (2006) conducted an in-depth study of National Board certification as staff development, and one of their major conclusions was that

teachers who pursue National Board certification show significant improvement in their teaching practices, whether they achieve certification or not. Similarly, Taylor (2000) investigated changes in teacher practices associated with National Board certification and noted that teachers in her study who did not certify registered greater change in their practices than did teachers who certified. Kirstene Jones, a West Virginia teacher who attempted National Board certification in 2008 and did not certify, claims that undergoing the rigorous process improved her practices: "This process made me a better teacher, even though I didn't certify" (Jones, K., personal communication, December 12, 2009). Regardless of these statements, no one has specifically examined the experiences and perceptions of teachers who attempted National Board certification but did not succeed.

Purpose of the Study

This study's purpose was to investigate the perceptions of West Virginia teachers who have attempted National Board certification and compare the perceptions of teachers who have achieved National Board certification with those who attempted National Board certification but did not (or have not yet) achieved certification.

Significance

This study has significance to those who are interested and/or invested in National Board certification. This includes districts and states who are using or considering National Board certification as staff development, as well as those

interested in or concerned about the impact of National Board certification on teacher effectiveness. Possible benefits of this study include gaining greater understanding of the process based on participants' perceptions, providing greater support to future candidates, and informing county/state officials and support providers of specific ways to improve rates of certification. Existing research on this topic is sparse and unclear, and this study sheds significant light on the perceptions of teachers involved in the National Board certification process.

Research Questions

This mixed-methods study addresses the following research questions:

1. What perceptions do National Board certified teachers (NBCT) in West Virginia have about the National Board process and its effects on their teaching?
2. What perceptions do National Board candidates (NB candidates) in West Virginia have about the National Board process and its effects on their teaching?
3. What differences, if any, exist between the perceptions of National Board certified teachers and National Board candidates in West Virginia in regard to the National Board certification process and its effects on their teaching?

Definitions

Operational Definitions

1. Perceptions – based on Likert scale responses to questions related to the NBPTS 5 Core Propositions (on a scale where 1 = Not at all and 6 = Greatly) and qualitative responses to open-ended questions.
2. National Board certified teacher (NBCT) – a teacher in West Virginia who has achieved National Board of Professional Teaching Standards certification via completion of the National Board certification process from 2004 – 2009 and who participated in this study by responding to the *National Board Certification Process Survey*.
3. National Board candidate (NB candidate) – a teacher in West Virginia who has attempted but not achieved National Board Certification who participated in this study by responding to the *National Board Certification Process Survey*. NB Candidates may be retake candidates, may not be retake candidates, or may have begun the certification process and quit before completion.

Additional Definitions

1. Non-National Board certified teacher (Non-NBCT) – a teacher who has not attempted the National Board certification process and is not certified by the National Board of Professional Teaching Standards.

Limitations

This study required teachers to self-report their perceptions of their experiences with the National Board certification process and its effects on their teaching and on their students. The validity of the study is thus dependent upon teachers' reflective responses to truly report their perceptions. These perceptions, by their nature, were subjective and prone to influence from a variety of sources, not the least of which might have been some teachers' negative feelings about the National Board process if they were not successful.

Organization of the Study

The study is presented in five chapters. Chapter 1 includes an introduction to the study, the background, a statement of the problem, the purpose of the study, the significance of the study, the research questions, the operational definitions, the limitations of the study, and a summary of the study. Chapter 2 provides a review of the literature and research related to the study. Chapter 3 outlines the methods and the research procedures for the study. Chapter 4 presents the findings and analyses of the data from the research questions. Chapter 5 presents the summary, conclusions, discussion, implications, and recommendations for future research.

CHAPTER TWO: LITERATURE REVIEW

Background

The National Board for Professional Teaching Standards (NBPTS) is an independent, nonpartisan, nonprofit and nongovernmental organization dedicated to advancing the quality of teaching and learning by developing professional standards for accomplished teaching, creating a voluntary system to certify teachers who meet those standards, and integrating certified teachers into educational reform efforts (NBPTS, 2008a). Established in 1987 on recommendation of the Carnegie Forum on Education and the Economy's Task Force on Teaching as a Profession, NBPTS seeks to "define what teachers should know and be able to do" and "support the creation of rigorous, valid assessments to see that certified teachers do meet those standards" (NBPTS, 2008b, ¶3).

Five Core Propositions form the basis for the NBPTS vision of accomplished teaching:

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 learn from experience.
5. Teachers are members of learning communities (NBPTS, 2008g).

From this foundation, a committee primarily made up of teachers develops standards for each certification area. These standards reflect the Five Core Propositions, identify specific knowledge, skills, and attitudes that support accomplished practice while emphasizing the holistic nature of teaching, illustrate how a teacher's professional judgment is reflected in action, and describe how the standards come to life in different settings (NBPTS, 2008h).

To be eligible to begin the process, teachers must meet three requirements: 1) hold a bachelor's degree, 2) have completed three full years of experience, and 3) possess a valid state teaching/counseling license for that period of time, or if teaching where a license is not required, have taught in schools recognized and approved to operate by the state (NBPTS, 2008k). Fees for the process are currently \$2,500 plus a nonrefundable \$65 processing charge. Fee assistance is often available to candidates through federal, state or school district funding, and there are also opportunities for candidates to apply for organizational or corporate-sponsored scholarships and grants (NBPTS, 2008l).

During the certification process, candidates compile four portfolio entries over the course of a school year. Three classroom-based entries focus on analysis of videotaped lessons and/or examples of student work, while the fourth entry focuses on interactions with families, communities and colleagues and how those interactions affect student learning. Portfolio entries require direct evidence of teaching or counseling and include a commentary describing, analyzing and reflecting on that evidence (NBPTS, 2008j). In addition to portfolio entries,

candidates must also demonstrate their content knowledge in response to six written assessment exercises specific to each content area (NBPTS, 2008c).

There are currently 25 certificates offered covering 15 subject areas and seven student age categories (see Table 1); these certificate areas are applicable to more than 95% of America’s teachers (NBPTS, 2008d).

Table 1: NBPTS Certification Areas / Levels

Subject Area	Developmental Level
Art	<ul style="list-style-type: none"> • Early Adolescence – Young Adult • Early and Middle Childhood
Career & Technical Education	<ul style="list-style-type: none"> • Early Adolescence – Young Adult
English as a New Language	<ul style="list-style-type: none"> • Early Adolescence – Young Adult • Early and Middle Childhood
English Language Arts	<ul style="list-style-type: none"> • Early Adolescence • Adolescence – Young Adult
Exceptional Needs	<ul style="list-style-type: none"> • Early Childhood – Young Adult
Generalist	<ul style="list-style-type: none"> • Early Childhood • Middle Childhood • Early Adolescence
Health Education	<ul style="list-style-type: none"> • Early Adolescence – Young Adult
Library Media	<ul style="list-style-type: none"> • Early Adolescence – Young Adult
Literacy: Reading – Language Arts	<ul style="list-style-type: none"> • Early and Middle Childhood
Mathematics	<ul style="list-style-type: none"> • Early Adolescence • Adolescence and Young Adult
Music	<ul style="list-style-type: none"> • Early and Middle Childhood • Early Adolescence – Young Adult
Physical Education	<ul style="list-style-type: none"> • Early and Middle Childhood • Early Adolescence – Young Adult
School Counseling	<ul style="list-style-type: none"> • Early Childhood – Young Adult
Science	<ul style="list-style-type: none"> • Early Adolescence • Adolescence – Young Adult
Social Studies – History	<ul style="list-style-type: none"> • Early Adolescence • Adolescence – Young Adult
World Languages Other than English	<ul style="list-style-type: none"> • Early and Middle Childhood • Early Adolescence – Young Adult

Trained assessors carefully examine completed portfolios, typically due back to NBPTS in late March. Each assessor scores only a portion of a candidate’s submission. Portfolios are scrutinized for evidence of National Board’s written standards. No one approach to teaching or counseling is

mandated or rewarded by the scoring process. Two different assessors, to ensure consistency and eliminate bias, score a certain percentage of entries independently. Once a National Board portfolio has been fully evaluated, it has been seen by at least 12 classroom teachers who must meet the same eligibility requirements as a candidate. Scores are released to candidates sometime in mid-November (NBPTS, 2008m).

According to participants, the National Board process is extremely rigorous. National Board certified teacher Jim Benz describes the process as “simply the most intense and influential personal development activity available for a teacher” (Unrath, 2002, ¶1), and that intensity means that not all candidates are successful. The process allows teachers up to three attempts at certification, with the option to “bank” scores and retake written assessments or resubmit portfolio entries if necessary. In the 2007-2008 certification cycle, 45% of candidates achieved certification on their first attempt. Historically, only about 40% of candidates certify on their first attempt, and for those who resubmit within the three-year period the achievement rate increases to 65% (Minichello, J., personal communication, February 4, 2009).

Despite the rigor of the process, numbers of National Board certified teachers have grown in recent years. Since 1987, more than 82,000 teachers have achieved National Board certification, with more than 9,600 of those occurring in 2008 and nearly 8,900 occurring in 2009. The number of National Board certified teachers has more than doubled in the past five years (from more

than 40,000 in 2004 to more than 82,000 in 2009). As of 2008, National Board certified teachers made up at least 5% of the total teaching force in seven states: North Carolina (15%), South Carolina (13.7%), Mississippi (9.4%), Florida (7.8%), Oklahoma (5.7%), Delaware (5.5%), and Washington (5.3%) (NBPTS, 2008f).

Why have these numbers increased so rapidly? Two-thirds of states tie National Board certification to financial incentives of some type. Candidates from all states and the District of Columbia have access to federal fee subsidies, and, depending on how these funds are distributed by the states, candidates may have all or part of their fees (currently more than \$2,500) reimbursed or even paid in advance. In addition, 32 states offer a direct salary supplement to teachers who certify, ranging from an additional \$1,000 per year (Connecticut, Kansas, and Vermont) to a 12% salary increase in North Carolina and Delaware (NBPTS, 2008i). Local districts often add to or match state supplements, so, for example, a National Board teacher working in Cabell County, West Virginia would receive a \$3,500 annual supplement from the state and a \$3,500 annual supplement from the county, both good for the ten year life of the certificate (West Virginia Department of Education, 2009). Furthermore, virtually every state accepts National Board certification for license reciprocity and certificate renewal, oftentimes as an equivalent of that state's highest certification ranking (NBPTS, 2009i).

Supporting Research

National Board purports to improve the quality of teaching and learning, but does it? With more than 20 years of data to sift through, researchers of every type have examined statistics, scrutinized standardized test scores, and interviewed participants. Studies have focused on student achievement (Bond, Smith, Baker, & Hattie, 2000; Cavalluzzo, 2004; Clowes, 2006; Goldhaber & Anthony, 2004; Hakel, Koenig, & Elliott, 2008; Phillips, 2008; Sanders, Ashton, & Wright, 2005; Smith, Gordon, Colby, & Wang, 2005; Vandevort, Amrein-Beardsley, & Berliner, 2004), the characteristics of exceptional teaching and indicators of teaching quality (Griffin, 2006; Hollandsworth, 2006; Lustick & Sykes, 2006; Vandevort, Amrein-Beardsley, & Berliner, 2004), teachers' perceptions of the process (Coskie & Place, 2007; Graham, Oliver, Opong, Bruce, Jakubiak, Johnson, Kennedy, Mansberger, Narayan, Park, Peker, Reed, & Wynne, 2005; Lustick & Sykes, 2006; Taylor, 2000; Tracz, Daughtry, Henderson-Sparks, Newman, & Sienty, 2005; NBPTS, 2010w), and even the validity of the process itself (Boyd & Reese, 2006; Clowes, 2006; Hess, 2004; Podgursky, 2001; Richards, 2004). States with high numbers of National Board teachers, such as North Carolina and Florida, have provided large pools of data, and researchers have been able to focus on both elementary and secondary schools as well as on various content areas, subject matter, and grade levels. As a result, a preponderance of research, both quantitative and qualitative, indicates

that the National Board process is identifying highly skilled teachers and that these teachers are having a positive effect on student achievement.

Impact on Student Achievement

A comprehensive study by Bond, Smith, Baker, and Hattie (2000) addressed two important questions: 1) To what extent does National Board's vision of accomplished teaching match the characteristics of teaching expertise identified by research and in scholarly literature? 2) Can National Board teachers and their non-certified counterparts be distinguished when comparing the quality of work produced by their students? After identifying 15 dimensions of teaching excellence (which can be roughly divided into quality of classroom teaching, outcomes achieved in terms of student work, achievement, and growth, and professional activities in a variety of educational settings), they then completed an intense comparative examination of a sample of 65 teachers from two National Board certificate areas: Early Adolescence / English Language Arts and Middle Childhood / Generalist. All teachers in the sample had attempted National Board certification with approximately 48% having achieved certification. "Blind" observers / assessors, who did not know whether the teacher they were assessing was National Board certified or not, considered a variety of evidence: teachers' objectives and plans, observational visits to classrooms, scripted interviews of teachers and students, student products or artifacts created in response to classroom assignments, and student writing samples in response to prompts created by the research team. In every comparison, National Board

Certified Teachers (NBCTs) outperformed non-NBCTs with a large majority of the comparisons being highly statistically significant.

Bond, et al. (2000) concluded that the NBCTs in their sample possessed, to a considerably greater degree, the identified attributes of teacher expertise. Furthermore, examination of students' writing samples and classroom work indicated that the students of NBCTs exhibited more integrated and more coherent understanding of targeted concepts with a higher level of abstraction than did work and writing samples from students of non-NBCTs.

Cavalluzzo (2004) examined data from a large urban school district, focusing on the association between student gains in ninth and tenth grade math and indicators of teacher quality, including National Board certification. Using individual student data linked to specific teachers, the study examined a variety of observable teacher characteristics indicative of teacher quality, such as having state certification, teaching in subject, or having a graduate degree. National Board certification, in particular, was identified as an effective signal of teacher quality. Cavaluzzo suggested that school systems who wish to target pay increases to highest quality teachers can use National Board certification as a valid discriminator among applicants and that such a strategy will benefit students in the long run as it attracts better candidates into teaching and raises the professionalism and prestige associated with the profession. Cavaluzzo strongly believes that student outcomes can be improved by implementing

professional development programs to change teaching practices so that more teachers adopt methods used by NBCTs.

Goldhaber and Anthony (2004) conducted the first large-scale study of the relationship between National Board certification and elementary-level student achievement with the goal of determining whether the National Board certification process identifies the most effective teachers. Using a unique data set from North Carolina (which currently has the largest number of National Board certified teachers in the nation), they were able to link teacher- and student-level administrative records from North Carolina's Department of Public Instruction, allowing for direct comparisons between the achievement of students of NBCTs and the achievement of teachers who attempted certification but did not succeed. Using two years of data for more than 600,000 third, fourth, and fifth grade students in the state, Goldhaber and Anthony concluded that NBPTS is successfully identifying the more effective teachers among applicants, and that, interestingly, National Board teachers were more effective than their non-certified counterparts at increasing student achievement in math and reading *even in the years before they were certified*. While cautioning that this "NBPTS effect" can vary significantly by grade level and student type, Goldhaber and Anthony found evidence that going through the NBPTS process "adds to teachers' human capital" (p. 27) and provides support for investment in the expensive process.

The Committee on Evaluation of Teacher Certification, commissioned by the National Board for Professional Teaching Standards (Hakel, Koenig, & Elliott,

2008), formed by the National Academies in response to legislation passed by Congress, developed a framework for evaluating advanced-level teacher certification programs. Over the course of 30 months, the committee reviewed 10 studies that measured student outcomes in terms of achievement test performance. These studies focused primarily on North Carolina and Florida, states that have substantial numbers of NBCTs and have maintained longitudinal databases of students and teachers. Findings from these studies showed that, in both states, students taught by NBCTs had higher achievement test gains than did those taught by non-NBCTs. Differences were small, however, and varied by state. North Carolina, with its long history of encouraging teachers to pursue National Board certification, showed slightly larger differences between the two groups of students, whereas differences in Florida were smaller. The committee noted a relationship between National Board certification and student achievement though the relationship is not strong or consistent across contexts (i.e., different grade levels, content areas, school structures). While calling for further research, the committee recognized that National Board certification is an effective way to identify highly skilled teachers.

An Arizona study conducted by Vandevort, Amrein-Beardsley, and Berliner (2004) compared the academic performance of students in the elementary classrooms of 35 NBCTs and their non-certified peers. Using information about third, fourth, fifth, and sixth grade students' Stanford Achievement Test results in reading, math and language arts, researchers were

able to make 48 comparisons (four grades, four years of data, three measures of academic performance). After adjusting gain scores for students' entering ability, students of NBCTs surpassed students of non-National Board certified teachers in almost three-fourths of the comparisons with about one-third of the comparisons being statistically significant. Effect size, translated into grade equivalents, indicated that students of National Board certified teachers effectively made average gains one month greater than students taught by non-board certified teachers. Vandevort, et al. concluded that teachers certified by NBPTS are, on average, more effective teachers in terms of academic achievement.

Smith, Gordon, Colby, and Wang (2005) examined the impact of NBCTs on the depth of student learning compared to teachers who attempted, but did not achieve, National Board certification. Utilizing 64 teachers from 17 states in four different certification areas, researchers collected and analyzed student work samples, including the responses of six randomly selected students for each teacher on all work produced during the course of the study. Analysis indicated that students of NBCTs were almost twice as likely to achieve deeper learning outcomes. Additionally, a standardized writing assessment was administered to 377 students of teachers in the Middle Childhood / Generalist and Early Adolescent / English Language Arts certificate areas. Scored both holistically and analytically (with an emphasis on five writing features), results were statistically significant in favor of NBCTs, indicating that students of NBCTs outperformed

students of non-NBCTs in all areas of writing assessed. Furthermore, researchers conducted an examination of teachers' instructional aims in an effort to determine if NBCTs developed instruction and structured class assignments designed to produce deeper responses than non-NBCTs. Results indicated that while a majority of all teachers aimed instruction and assignments toward surface learning outcomes, NBCTs were more than twice as likely to aim instruction at deeper learning outcomes, indicating that National Board certified teachers more often intended to foster deeper student understanding.

Phillips (2008) compared the competencies of high school physical education students of NBCTs and non-NBCTs. Using data from the South Carolina Physical Education Assessment Program (SCPEAP), measures of motor skill performance, cognitive fitness knowledge, outside-of-class participation, and health-related fitness levels were compared. Phillips found that students of NBCTs had higher levels of student competency on all four performance indicators, as well as on the overall measure when compared with students of non-NBCTs.

Practices and Perceptions

Researchers have also scrutinized the practices and perceptions of National Board Certified Teachers in comparison with their non-National Board Certified counterparts. Hollandsworth (2006) examined the classroom practices of NBCTs and non-NBCTs in grades one and two for differences in their use of 13 best practices as identified by the research of Zemelman, Daniels, and Hyde

(1998). Eleven of these practices, including components such as student-centeredness, experiential learning, holistic instruction, authentic learning, expressive instruction, student reflection, social interaction, collaborative instruction, cognitive instruction, and developmental instruction, were found to be more consistently demonstrated in the classrooms of National Board certified teachers. Negligible differences in the democratic and constructivist practices of the teachers were observed. Hollandsworth asserted that NBCTs are more effective because they know how to put theory into practice.

Griffin (2006) surveyed 277 Alabama principals regarding the effectiveness of NBCTs versus non-NBCTs in relation to National Board's Five Core Propositions: commitment to student learning, knowledge of subject matter and how to teach it, management and assessment of student learning, systematic thought about practice, and membership in learning communities. According to the principals, National Board certified teachers significantly excelled on every measure.

In addition to their focus on student achievement, Vandevort, Amrein-Beardsley, and Berliner (2004) also surveyed Arizona principals about their perceptions of National Board certified teachers, the effects of the certification process on participating teachers, and the impact of NBCTs on their school. About 85% of the principals perceived their NBCT to be one of the best teachers ever supervised, citing such qualities as professionalism, collaboration, dedication, and leadership. Thirty-five percent of principals reported having

supervised their NBCT before, during, and after the National Board process, and about three-quarters of these principals reported observing changes in the teaching of the NBCTs, changes they attributed to participation in the National Board process. NBCTs were perceived as assuming more of a leadership role and being more willing to try new techniques or take risks. The most frequent response mentioned by principals involved an increase in the NBCTs reflective practice. More than 90% of the principals believed NBPTS to be contributing to improvements in teacher quality, and 70% believed NBPTS to be contributing to improvements in student achievement.

Teachers who undergo the process view it as having a positive impact on their instruction. Coskie and Place (2007) conducted a two-year qualitative study that followed five elementary teachers through the National Board process. Teachers involved were Early Childhood / Generalist or Middle Childhood / Generalist candidates working in either early or upper elementary classrooms. Year one of the study focused on teachers' journey through the process from beginning to end, and year two focused on how the National Board process continued to impact teachers' thinking about their practice. Throughout the study, researchers emphasized teachers' appropriation of National Board's standards and portfolios as conceptual tools related to literacy instruction. Coskie and Place concluded that the National Board process did impact teachers' ideas about literacy instruction and that the influence was sustained into the second year. Teachers were provided "with powerful conceptual tools, in the form of portfolio

questions and standards . . . which served to systematize and focus their thinking about their students and instruction, while the standards served to audit the ‘goodness’ of this work” (p. 1903). Classroom practices were also affected greatly by the process. Teachers reported more awareness of their students as individuals, more awareness of individual students’ strengths and weaknesses, an increase in the amount of choice provided to students, increased recognition of the importance of fostering engagement and ownership, and an increase in the use of collaborative learning strategies. Coskie and Place suggested that the National Board process is a significant learning opportunity that can positively impact teachers’ practice over time.

Lustick and Sykes (2006) examined learning outcomes of more than 120 Adolescent / Young Adult Science candidates over two years, collecting both cross-sectional and longitudinal data. Candidates participated in pre- and post-candidacy structured interviews based on the NBPTS framework of accomplished science teaching in order to check candidates’ understanding of science teaching related knowledge. They concluded that candidates’ learning significantly increased, supporting the hypothesis that National Board certification is an effective standards-based professional learning opportunity. Lustick and Sykes also interviewed participants in their study, all of whom were Early Adolescent Science candidates. Approximately half of the participating teachers indicated an immediate positive effect on their ability to teach their students as a result of their involvement with the National Board certification process. Lustick

and Sykes went on to report that teachers who pursue National Board certification show significant improvement in their teaching practices whether they achieve certification or not.

Tracz, Daughtry, Henderson-Sparks, Newman, and Sienty (2005) interviewed 25 teachers who had completed the NBPTS certification process, 88% of whom received certification. Using a semi-structured, open-ended interview format, teachers were asked six questions relating to how the National Board experience affected their instructional practices. Emergent themes included reflection, assessment and professionalism. Teachers reported a pronounced increase in reflection focused on students, standards and teaching practice and on the interaction between those components. Teachers indicated that they were much more aware of student needs and student differences and reported a renewed commitment to modifying their practices to meet those needs. Assessment was increasingly viewed as a guide for modification of instruction and the varying of instructional strategies, and teachers' discussions indicated movement "from a consumer of teaching techniques and materials to a self-reflective, decision-making individual and assertive advocate for students and their families" (p. 48). Tracz, et al. asserted that teachers who have undergone the National Board process viewed it as enhancing their participation in the learning community and improving their teaching practice.

A longitudinal study in Georgia (Graham, Oliver, Oppong, Bruce, Jakubiak, Johnson, Kennedy, Mansberger, Narayan, Park, Peker, Reed, & Wynne, 2005)

indicated that National Board candidates view the process as “an important tool that causes them to change their teaching practices and is worthwhile for that reason alone” (p. 194). The authors of the study suggested that the videotaped lessons required for the portfolios, along with the accompanying reflective narratives, are “powerful activators of insight into teaching” (p. 194) and that the critical reflection stemming from the process can serve to help teachers identify issues within their practices that are contrary to their professional beliefs. Furthermore, Graham, et al asserted that the National Board process can positively impact teachers’ practices in regard to equity, depth of learning, increased success, power and status for women teachers, collaboration, and professional development.

Taylor (2000) examined a group of 11 Colorado teachers undergoing National Board certification in order to investigate the effects of the certification process on professional development. While changes in practice varied considerably from individual to individual, Taylor observed a consistent pattern of “shifting from activity-driven to standards-driven planning and instruction” (p. iii), as well as changes in how teachers presented information to help students make connections across subject areas and build on prior knowledge. All 11 teachers reported changes in their methods of assessment, ranging from making greater efforts to creating diverse assignment for students to using assessment to change instruction. In addition, many teachers reported that the formal reflection required by the NBPTS process broadened their overall view of assessment.

Interestingly, the two teachers in the study who reported the most change did not receive certification.

A survey commissioned in 2001 by NBPTS examined the perceptions of more than 5,000 teachers who had recently completed the certification process (NBPTS, 2010w). Respondents to the survey were overwhelmingly positive about the process, with 96% rating the process as “excellent,” “very good,” or “good.” More than 90% of the candidates surveyed said they believed their involvement in the process had made them better teachers. Large majorities of teachers specifically reported that the process enhanced their interactions with students (82%) and with parents and guardians (80%), while 80% reported improved collaboration with colleagues. Participants also expressed that the process equips teachers to create stronger curricula (89%), improves skills for evaluating student learning (89%), and helps to develop frameworks for the use of state content standards to improve teaching (80%).

Dissenting Research

Not all researchers, however, view National Board certification in a positive light. Dissenting research and commentary raise questions of whether students of NBCTs really do make greater academic progress (Clowes, 2006; Goldhaber & Anthony, 2004; Sanders, Ashton, & Wright, 2005; Stone, 2002), whether the process is identifying the most highly skilled teachers (Hakel, Koenig, & Elliot, 2008), and whether the process is worth the time, effort, and

money devoted to it (Boyd & Reese, 2006; Hakel, Koenig, & Elliot, 2008; Hess, 2004; Podgursky, 2001; Richards, 2004).

Impact on Student Achievement

Sanders, Ashton, and Wright (2005), in a study requested by NBPTS, compared the academic achievement of students taught by NBCTs versus students whose teachers had failed in their attempt at certification, students whose teachers planned to attain certification in the future, and students whose teachers had never been involved in the certification process. After assessing student performance in two school districts on the North Carolina end-of-grade exam for fourth through eighth-grade students in reading and math, Sanders, et al. determined that students of NBCTs did not have significantly better rates of academic progress than students of other teachers. Notably, “variation among teachers within the same certification status was sufficiently large that whatever small average differences there were between teachers in different certification status categories were rather meaningless in comparison” (p. 3-4). Sanders, Ashton, and Wright concluded that a student randomly assigned to an NBCT is no more likely to get an “effective” or “ineffective” teacher than a student assigned to a non-NBCT.

Similarly, Clowes (2006), in an article for School Reform News, reviewed four value-added research studies conducted since 2002, including three sponsored by NBPTS, which showed “NBPTS-certified teachers produce only small gains in student achievement (¶1) . . . [which] raises questions about

whether bonuses for National Board certification are being misdirected to average teachers instead of going to teachers who produce substantial gains in student achievement” (¶2). Clowes also questioned why National Board’s certification standards contain no explicit link to student achievement and fail to address the role high quality teachers play in raising student achievement or closing the achievement gap between students from low- and high-income families.

Goldhaber and Anthony (2004), who found that NBCTs had a greater effect on student achievement than teachers who failed to achieve certification, also raised questions about the overall effectiveness of the process, noting that the North Carolina teachers did not become more effective as a result of the process (contrary to what NBPTS suggests) and that NBCTs were actually less effective in the year that they applied, possibly due to the difficulties of the portfolio process. Furthermore, they noted that reported differences in student achievement between NBCTs and their non-certified peers were relatively small especially given the program’s cost.

Using a unique data set from the Tennessee Value Added Assessment System (TVAAS), Stone (2002) analyzed “teacher effect” scores from 16 National Board certified teachers in grades three through eight. These scores represented the estimated mean achievement gains of each teacher’s students in each subject taught by that teacher in an attempt to determine if Tennessee’s NBCTs were exceptionally successful in improving the achievement of their students.

Results indicated that Tennessee's 16 National Board certified teachers were not exceptional in their ability to increase student achievement. Achievement gains of their students were no greater than those made by students of non-National Board certified teachers. Only 15% of the scores fell into the exemplary level, while 11% were designated as deficient. Critics of this study cite its unusually low number of participants, but Stone has continued to stand by his results, asserting that a "good value-added assessment is more likely to accurately identify teachers who really pack a punch than the less accurate, more expensive process used to identify and certify National Board teachers" (Boyd & Reese, 2006, ¶20).

Researchers who do concede that National Board teachers might be more effective are still unsure as to the source of that effectiveness. Hakel, Koenig, and Elliott (2008) examined a large body of current research on National Board and, while acknowledging that students taught by National Board certified teachers make greater gains on achievement tests than students taught by non-board certified teachers, stressed that while National Board certification is a signal that a teacher is effective, it is not known whether the process itself makes teachers more effective or if high quality teachers are attracted to the certification process.

Questions about the Process

While National Board has striven to build a national model of accomplished teaching, many researchers question the motives behind the

process and the validity of the process itself. Podgursky (2001), a professor of economics at the University of Missouri-Columbia and a frequent critic of National Board, has outlined several criticisms of National Board certification. To begin with, while NBPTS views its mission as improving teaching and learning, Podgursky sees National Board primarily as a means of addressing rigid teacher salary schedules. National teachers' unions offer strong opposition to merit pay in K-12 education, but pay bonuses for national certification allow a compromise that, in his view, "differentiates pay to permit 'accomplished' teachers to earn more, but potentially allows all teachers to be accomplished and avoids subjective assessments by supervisors that are typically part of merit- or performance-pay systems" (¶4). Writing in 2001, Podgursky questioned the lack of evidence at that time supporting positive effects on student achievement, claiming the National Board process was no better at identifying superior teachers than assessments from supervisors, principals, or parents. Podgursky also doubted the content knowledge assessed by the process, questioned the assessment process (which he states relies heavily on minimally trained "moonlighting" teachers), questioned the lack of input by principals and parents, and wondered why errors in grammar and syntax within written portfolios are not penalized. Furthermore, Podgursky was suspicious of candidate support programs provided by university and teachers' union programs, citing ethical and security issues and the potential for cheating. Finally, Podgursky wondered why the nation's elite schools - independent private schools such as Sidwell Friends

School in Washington, whose alumni include the children of presidents - seemingly have little interest in employing NBCTs. Podgursky noted that while almost 12% of America's teachers work in private schools, as of 2001 less than 1% of NBCTs were employed in nonpublic or charter schools.

Hakel, Koenig, and Elliott (2008), who are generally supportive of NBPTS, also had concerns about some aspects of the certification process. In addition to recommending a greater emphasis by NBPTS on internal documentation, Hakel, et al. expressed concern about the translation of standards statements into assessment exercises. Characterizing National Board's content standards as readable yet imprecise, Hakel, et al. further recommended the development of more precise explanations of the standards in order to "ensure that the assessment exercises measure the intended skills" (p. 4).

Boyd and Reese (2006) contended that while NBPTS has had favorable influence on institutional change, developing high, national standards for teachers, influencing the design of many teacher preparation programs, and helping to gain increased acceptance within the profession and the national teachers' associations for performance assessment and differential certification pay, there are still serious questions about the effects of NBCTs on student achievement and about the cost-effectiveness of the process. In addition to the high cost of the process (currently \$2,500), some state lawmakers have recently begun to doubt their state's ability to continue to pay the financial incentives created to encourage teachers to undergo the process. Boyd and Reese also

suggested there is a continuing need for more proof that NBCTs have positive effects on student achievement and wondered if the process makes teachers better or is simply a “gold star” (¶ 13) identifying accomplished teachers.

Richards (2004) also cited concerns with the National Board process, claiming that the process is “highly subjective and lacking in academic substance” (¶7). Chief among her criticisms was that teachers’ portfolios are not required to show the effect of their teaching on students’ academic achievement. She also questioned the cost-effectiveness of the program, claiming that it is “poorly designed” but “expertly marketed” (¶7), resulting in the state of Washington paying annual bonuses of more than \$2 million to 581 National Board certified teachers (as of 2004), a cost that will only rise as more teachers become certified. Like many critical of National Board, Richards suggested bonuses and rewards should be given to teachers who demonstrate measurable, increased student achievement based on value-added assessment.

Hess (2004) has been another recent critic of NBPTS, describing the process as interesting, but not well executed. Specifically, he questioned how reading teachers’ essays and examining student work samples can evaluate teacher excellence without ever actually examining student achievement. Similarly, he wondered how NBPTS standards could be considered exemplary if none of them are based on students actually learning something. Hess and others also have pointed out that African American and male applicants are systematically rejected at higher rates than their peers. Hess concluded that

NBPTS is capricious in the use of its standards and argued that there is no evidence that NBCTs are more effective than other teachers.

Candidate Support Programs

The rigor of the National Board process has spurred the creation of a wide variety of candidate support systems across the country, both formal and informal. No support program is endorsed by NBPTS, though most interested parties recognize the value such programs can bring to the process. It is certainly possible to achieve National Board certification without the assistance of a support program, but many teachers report that support programs help keep them motivated and focused during the process, while many support programs claim a certification rate for their participants that is higher than the national average. Financial support is vital, and every state has a State Subsidy Administrator who is responsible for allocating the federal subsidy (and state subsidy, if applicable). Twenty-two states have NBPTS-affiliated NBCT Networks, which oversee candidate support programs in those states (NBPTS, 2008r). Programs such as that offered at the Great Plains Center for National Teacher Certification at Emporia State University in Emporia, Kansas are typical, offering workshops, mentoring, and resource materials, as well as structure and collegial support (Jones Institute for Educational Excellence, 2009).

Both major national teachers' unions – the American Federation of Teachers and the National Education Association – offer online support, as well as a joint publication, *A Guide to Understanding National Board Certification*, that

offers candidates guidance and advice gleaned from NBPTS and from past candidates and trainers, along with exercises to help candidates hone the skills needed to complete National Board certification (American Federation of Teachers and National Education Association, 2009). Local union affiliates frequently offer more specific support. The West Virginia Education Association, for example, sponsors National Board certification candidate support sessions throughout the candidacy cycle. Open to members and nonmembers alike, the sessions provide candidates with resource materials and mentoring opportunities (West Virginia Education Association, 2009).

Universities large and small also offer support to National Board candidates. Schools as diverse as Stanford University and City University of Seattle have designed programs to provide candidates with support through the process, usually for a fee and often for college credit (City University of Seattle, 2009; National Board Resource Center at Stanford University, 2009).

For their part, NBPTS provides candidate support provider training to NBCTs and others who are interested in support efforts. Participants receive information and insight into the assessment and scoring process, common misconceptions about NBPTS, and the policies and guidelines that safeguard the process, and emphasis is placed on the characteristics of effective candidate support (NBPTS, 2008s). NBPTS has also created ethical guidelines for candidate support providers, which stress high ideals of professional conduct. Furthermore, a policy for certification denial or revocation is in place if NBPTS

deems that candidates, NBCTs, or support providers have violated these ethical guidelines (NBPTS, 2008t).

A great deal of informal, online support also exists for candidates.

Members of Yahoo User Groups, for example, have created bulletin boards / chat rooms for each certificate area as well as for general discussions and quite a few special interest groups, such as retake candidates, renewal candidates, groups dedicated to particular states or counties, and groups dedicated to particular portfolio entries (Yahoo, 2009).

Hundley (2005) examined several aspects of support received by National Board certified teachers, specifically focusing on types of support, the importance of support, and the relationship between receipt of support and achievement of certification. Phase one of Hundley's study utilized interviews to identify various types of support received by teachers; this purposeful sample included two teachers from California, two from Kentucky, one from Virginia, and one from West Virginia (Waugh, E., personal communication, August 18, 2009). Support mechanisms identified in this phase included receipt of mentoring, collegial support, financial support, proofreading, reading for content, time release, family support, use of technology, time line, logistical information, and workshops. Phase two of the study surveyed a random national sample of teachers who had attempted certification and asked them to rank the importance of each support mechanism, whether they had received the given type of support, and whether they achieved certification. Results indicated that each type of support

mechanism was perceived to be important, though a significant relationship was found only between achievement of certification and reading for content and collegial support (Hundley, 2005).

NBPTS in West Virginia

National Board certified teachers have a relatively strong presence in West Virginia. As of December 2009, West Virginia had 493 National Board certified teachers, a number higher than more populous states such as Tennessee (405), Minnesota (337), Kansas (325), Michigan (319), Oregon (234) and Indiana (144) (NBPTS, 2008o). NBCTs currently make up around 2% of the state's teacher workforce with more than half of those NBCTs working in Title I schools. From 2007-2009, West Virginia's growth in National Board certified teachers outpaced national growth 71% to 49% (NBPTS, 2008n).

A breakdown of data obtained from the West Virginia Department of Education (2004-2009) and NBPTS provides a snapshot of the average West Virginia National Board certified teacher and allows for some comparisons with national data. As of 2008, 91% of West Virginia's NBCTs were female, a number much higher than the currently estimated 75% female teacher workforce nationwide (Johnson, 2008). The years 2003, 2007, 2008, and 2009 provided the largest influxes of newly certified teachers in the state with each year seeing more than 60 teachers certified. Table 2 outlines the numbers of NBCTs in West Virginia by year.

Table 2: WV NBCTs by Year (2008)

Year	Number	Percentage
1995	1	0.2
1996	0	0
1997	1	0.2
1998	1	0.2
1999	1	0.2
2000	23	4.0
2001	30	6.0
2002	32	6.4
2003	66	13.3
2004	48	9.7
2005	41	8.3
2006	44	8.9
2007	69	13.9
2008	63	12.7
2009	74	15.0

As of 2008, Early Childhood Generalist (21.4%) and Middle Childhood Generalist (11.7%) were the most common certificate areas in West Virginia, accounting for 33% of the state's 420 (at that time) NBCTs, a percentage almost identical to national numbers. Other common certificate areas in the state are Early / Middle Childhood Literacy: Reading-Language Arts (8.6%), Exceptional Needs: Early Childhood / Young Adult (7.9%), Early Adolescent English Language Arts (6.7%), Early Adolescent Math (6.7%), Adolescent Young Adult English Language Arts (6%), Adolescent Young Adult Math (5%), and Adolescent Young Adult Science (5%). Table 3 provides a complete breakdown of West Virginia NBCTs by certification area.

Table 3: WV NBCTs by Certification Area (2008)

Certificate Area	Number	Percentage
Art: Early/Mid Childhood	4	1.0
Art: Early Adolescence-Young Adult	5	1.2
Career/Tech: Early Adolescence-Young Adult	15	3.3
English Language Arts: Early Adolescence	28	6.7
English Language Arts: Adolescence-Young Adult	25	6.0
Exceptional Needs: Early Childhood-Young Adult	33	7.9
Generalist: Early Childhood	90	21.4
Generalist: Middle Childhood	49	11.7
Library: Early Childhood-Young Adult	5	1.2
Literacy-Reading Language Arts: Early/Middle Childhood	36	8.6
Math: Early Adolescence	28	6.7
Math: Adolescence-Young Adult	21	5.0
Music: Early/Middle Childhood	3	0.7
Music: Adolescence-Young Adult	3	0.7
Physical Education: Early/Middle Childhood	5	1.2
Physical Education: Early Adolescence-Young Adult	2	0.5
School Counseling: Early Childhood-Young Adult	3	0.7
Science: Early Adolescence	15	3.6
Science: Adolescence-Young Adult	11	2.6
Social Studies: Early Adolescence	8	1.9
Social Studies: Adolescence-Young Adult	11	2.6
World Language: Early Adolescence-Young Adult	11	2.6

As of 2008, Wood County had more NBCTs than any other West Virginia county, a total of 61 or 14.5% of the state's total. Other counties with high numbers of NBCTs include Cabell (36 total, 8.6%), Monongalia (22 total, 5.2%), Putnam (22 total, 5.2%), Kanawha (18 total, 4.3%) and Harrison (17 total, 4%). Grant, Mason, McDowell, Pleasants, and Wyoming Counties currently have no NBCTs, and 29 of the total 420 are not identified with any particular county at all, indicating they are employed directly by the WV Department of Education or by private schools. No data on the number of West Virginia NBCTs still actively teaching are available. Table 4 provides a breakdown of West Virginia NBCTs by county.

Table 4: WV NBCTs by County (2008)

County	Number	Percentage	County	Number	Percentage
Barbour	2	0.5	Mineral	15	3.6
Berkeley	16	3.8	Mingo	5	1.2
Boone	5	1.2	Monongalia	22	5.2
Braxton	2	0.5	Monroe	2	0.5
Brooke	2	0.5	Morgan	1	0.2
Cabell	36	8.6	Nicholas	3	0.7
Calhoun	2	0.5	Ohio	12	2.9
Clay	1	0.2	Pendleton	1	0.2
Doddridge	1	0.2	Pleasants	0	0
Fayette	6	1.4	Pocahontas	1	0.2
Gilmer	2	0.5	Preston	2	0.5
Grant	0	0	Putnam	22	5.2
Greenbrier	15	3.6	Raleigh	7	1.7
Hampshire	1	0.2	Randolph	4	1.0
Hancock	14	3.3	Ritchie	5	1.2
Hardy	2	0.5	Roane	1	0.2
Harrison	17	4.0	Summers	2	0.5
Jackson	5	1.2	Taylor	1	0.2
Jefferson	3	0.7	Tucker	2	0.5
Kanawha	18	4.3	Tyler	1	0.2
Lewis	2	0.5	Upshur	11	2.6
Lincoln	2	0.5	Wayne	16	3.8
Logan	3	0.7	Webster	1	0.2
Marion	14	3.3	Wetzel	1	0.2
Marshall	5	1.2	Wirt	2	0.5
Mason	0	0	Wood	61	14.5
McDowell	0	0	Wyoming	0	0
Mercer	14	3.3	Unknown	29	6.9

To date, one research study has included West Virginia NBCTs.

Hollandsworth's (2006) comparison of classroom practices of NBCTs and non-NBCTs focused exclusively on 10 West Virginia teachers in grades one and two and examined differences in their use of 13 best practices identified by Zemelman, Daniels, and Hyde (1998). Utilizing a multi-site, qualitative descriptive and evaluative case study format, Hollandsworth (2006) incorporated observations, interviews, and a checklist to generate qualitative and quantitative data collected in 10 classrooms. Analysis indicated that National Board certified teachers more consistently demonstrated 11 of the 13 best practices: student-

centeredness, experiential learning, holistic instruction, authentic learning, expressive instruction, student reflection, social interaction, collaborative instruction, cognitive instruction, and developmental instruction. Hollandsworth asserted that NBCTs used research-based practices indicative of highly qualified teachers.

CHAPTER THREE: METHODS

Research Design

Researchers in the social sciences have often adopted one of two traditional, yet opposing, research paradigms: quantitative or qualitative. Mixed-methods research, however, can be viewed as a valid alternative that draws from the strengths and minimizes the weaknesses of both (Johnson & Onwuegbuzie, 2004). Patton (1990) notes the value of methodological triangulation achieved in a mixed-methods study whereas Andrew and Halcomb (2006) espouse the growing pragmatic view that mixed-method studies often provide the most apt means to answer research questions. This study of teachers who have attempted National Board certification utilized a mixed-methods design, gathering both quantitative and qualitative data through survey methods and open-ended questions.

Population and Sample

The population for this study was West Virginia teachers who attempted National Board certification between 2004 and 2009 and applied for fee reimbursement from the West Virginia Department of Education (WVDE), including both those who certified and those who did not. In addition, the population was further defined as those for whom an accurate email address could be located. The names of participants were obtained through a Freedom of Information Act request and were taken from a WVDE database containing the

names of all teachers who had applied for National Board fee reimbursement from the state of West Virginia from 2004 to 2009. From a list of more than 700 names, duplicate names and the names of those for whom email addresses could not be obtained due to changes in employment or name changes were eliminated, leaving 524 participants. Email addresses were located through a WVDE webmail tool. To eliminate sampling error, a decision was made to survey the entire population. From this group of 524, one participant provided notification that she had never attempted National Board certification and eight emails were returned due to inaccurate or nonfunctioning email addresses, leaving a population of 515 (60% National Board certified, 40% non-National Board certified). Over the course of a three-week survey period in March and April of 2010, a total of 306 responses were submitted, yielding a general return rate of 59.42%. Of this group, 11 participants opted out, leaving 295 usable survey responses, a usable return rate of 57.28%. According to a random-sample calculator from the CustomInsight website, this return rate yielded a 99% confidence interval with an error rate of 4.9% (CustomInsight, 2008).

Instrumentation

This mixed-method study gathered both quantitative and qualitative data through the use of a survey developed by the researcher. The *National Board Certification Process Survey* (Appendix A) was based on the NBPTS Five Core Propositions and other pertinent literature. Survey questions built on the work of Taylor (2000) and Tracz, Daugherty, Henderson-Sparks, Newman, and Sienty

(2005). To help improve content validity, the survey was reviewed by a panel of experts (Appendix B) who examined the instrument using general criteria for content validity suggested by Dillman (2007) (Appendix C). Quantitative data from the survey were gathered via Likert scale items intended to probe the motives and perceptions of participants regarding their perceptions of the impact of the National Board process on their instructional practices. Qualitative data were simultaneously gathered through the use of open-ended questions and opportunities for participants to provide explanations and examples of their perceptions. Pertinent demographic information, including gender, county of employment, certification area and grade level attempted, year of first attempt, current job status, current employment status, and years of teaching experience, was also collected.

Data Collection Procedures

Data collection took place through the online electronic survey site, SurveyMonkey. Shannon, Johnson, Searcy, and Lott (2002) advocate the use of electronic surveys based on the World Wide Web when gathering data from targeted populations with published email addresses as long as confidentiality, privacy, and sample credibility are maintained and sound principles of survey construction are utilized. Advantages to this method include the ability to send pre-notification and/or follow-up emails to participants, the compatibility of data with existing software programs, and the reduction of costs.

An electronic mail message containing the link to the *National Board Certification Process Survey* was sent to teachers in the population on March 22, 2010, alerting them to the opportunity to participate in the study (Appendix D). This message explained the study and provided readers with the purpose of the survey. Data collection proceeded during a two-week window.

Capabilities within the SurveyMonkey website allowed non-respondents to be tracked using participant electronic mail addresses. Therefore, one week after receiving the initial electronic message containing a link to the survey, non-respondents received a second email reminder on March 29, 2010 (Appendix E) including a link to the survey on SurveyMonkey.com. Finally, just before the survey closed, participants who had not yet responded were sent one final electronic mail message reminder on April 5, 2010 requesting their participation (Appendix F). If survey return rates had been lower than anticipated, copies of the survey would have been mailed to non-respondents' schools in a final effort to elicit their participation (Appendix G).

Approval to collect data using the survey was obtained from the Marshall University Institutional Review Board (IRB) for the protection of human subjects. Documentation from Marshall University's Institutional Review Board Office of Research Integrity is located in Appendix H.

Data Analysis Procedures

Quantitative data were analyzed using the Statistical Package for Social Sciences (SPSS) software. Descriptive statistics, including frequencies and

modes, as well as Pearson Chi-Square and Mann Whitney U results, were calculated in response to each research question. Data were analyzed to determine how participants perceived the impact of participation in the National Board process on their teaching and to compare the perceptions of teachers who certified with those of teachers who attempted but did not certify. Ancillary findings based on demographic information were reported where significant.

Patton (1990) describes the qualitative research process as one in which the researcher inductively analyzes data in order to identify critical themes. Qualitative data obtained in this study were sorted, coded, organized, and analyzed for emergent themes, including similarities and differences between NBCTs and NB Candidates.

Summary

This study of the perceptions of West Virginia teachers involved in the National Board of Professional Teaching Standards certification process adds to our nationwide understanding of the process itself and its effects on participants by building on the work of others in the field (Taylor, 2000; Tracz, Daughtery, Henderson-Sparks, Newman, & Sienty, 2005). With little previous work undertaken in the state (Hollandsworth, 2006) this mixed-methods study also provides greater understanding of the National Board process as it affects West Virginia teachers. Survey questions and data collection procedures were carefully designed in an attempt to obtain an accurate picture of how the National Board process affects participants and to provide a basis for comparing the perceptions

of those who certify and those who do not. Gaining greater understanding of the process and its effects may allow county/state officials and support providers to improve support to future candidates and improve rates of certification.

CHAPTER 4: FINDINGS

This study examined the perceptions of West Virginia teachers who participated in the National Board certification process from 2004 – 2009, including those who certified and those who did not. Additionally, the perceptions of National Board Certified Teachers (NBCTs) and National Board candidates (NB candidates) were compared using both qualitative and quantitative data obtained through the *National Board Certification Process Survey*.

The following research questions were addressed to identify participants' perceptions and to determine similarities and differences in the perceptions of NBCTs and NB candidates:

1. What perceptions do National Board certified teachers in West Virginia have about the National Board process and its effects on their teaching?
2. What perceptions do National Board candidates in West Virginia have about the National Board process and its effects on their teaching?
3. What differences, if any, exist between the perceptions of National Board certified teachers and National Board candidates in West Virginia in regard to the National Board certification process and its effects on their teaching?

Respondent Demographics

A Freedom of Information Act request to the West Virginia Department of Education provided a database of names of all teachers who had applied for National Board fee reimbursement from the state of West Virginia from 2004 to

2009. From this list of more than 700 names, duplicate names and the names of those for whom email addresses could not be obtained due to changes in employment or name changes were eliminated, leaving 524 potential participants. From this group of 524, one participant provided notification that she had never attempted National Board certification and eight emails were returned due to inaccurate or nonfunctioning email addresses, leaving a population of 515. Of this group, approximately 60% were National Board certified and 40% were National Board Candidates who did not certify.

A total of 295 usable survey responses were received, providing an overall return rate of 57.3%. Of these, 202 (68.5%) were identified as National Board certified teachers (NBCTs) and 93 (31.5%) were identified as National Board candidates (NB Candidates). Of the National Board candidates, no distinction was made between those who were retake candidates, those who were not, and those who began the process but stopped before completion. Table 5 provides a description of participants' certification status.

Table 5: Frequencies: Certification Status

Certification Status	<i>f</i>	<i>P</i>
Certified	202	68.5
Not Certified	93	31.5
Total	295	100.0

Respondents in the population were spread across a six-year span of certification attempts from 2004-2009. Ten respondents omitted or declined to answer the corresponding survey question, indicating that they might have first attempted certification prior to 2004 and were retake candidates. Table 6

provides a descriptive breakdown of candidates' first year of attempted certification.

Table 6: Frequencies: Year of First Certification Attempt

Year of First Certification Attempt	f	P
2004	42	14.2
2005	26	8.8
2006	43	14.6
2007	70	23.7
2008	49	16.6
2009	55	18.6
Missing	10	3.4
Total	295	100.0

Twenty-five different certificate areas are currently offered by NBPTS, and all 25 areas were represented in the sample. The distribution of certification areas and levels was much in line with national trends, as 51 respondents (17.3%) indicated they had attempted certification in the Early Childhood Generalist category. Early/Middle Childhood Literacy (12.9%), Early Childhood through Young Adult Exceptional Needs (8.1%) and Middle Childhood Generalist (7.5%) were also well represented in the sample. Table 7 provides a complete descriptive breakdown of participants' certification areas and developmental levels.

Table 7: Frequencies: Certification Areas and Developmental Levels

Certification Area / Developmental Level	f	P
Art – Early Middle Childhood	5	1.7
Art – Early Adolescent / Young Adult	6	2.0
Career and Tech. – Early Adolescent / Young Adult	12	4.1
English as New Lang. – Early Middle Childhood	2	0.7
English as New Lang. – Early Adolescent / Young Adult	1	0.3
English Lang. Arts – Early Adolescent	17	5.8
English Lang. Arts – Adolescent. / Young Adult	18	6.1
Exceptional Needs – Early Childhood / Young Adult	24	8.1
Generalist – Early Childhood	51	17.3
Generalist – Middle Childhood	22	7.5
Health – Early Adolescent / Young Adult	1	0.3
Library – Early Childhood / Young Adult	5	1.7
Literacy – Early / Middle Childhood	38	12.9
Math – Early Adolescent	19	6.4
Math – Adolescent / Young Adult	14	4.7
Music – Early / Middle Childhood	6	2.0
Music – Adolescent / Young Adult	4	1.4
Physical Education – Early / Middle Childhood	4	1.4
Physical Education – Adolescent / Young Adult	1	0.3
School Counseling – Early Childhood / Young Adult	4	1.4
Science – Early Adolescent	10	3.4
Science – Adolescent / Young Adult	10	3.4
Social Studies – Early Adolescent	4	1.4
Social Studies – Adolescent / Young Adult	8	2.7
World Languages – Early Adolescent / Young Adult	6	2.0
Missing	3	1.0
Total	295	100.0

Participants were geographically widespread throughout the state of West Virginia with responses received from 47 of the state’s 55 counties. Cabell County, with 27 responses (9.2%), had the highest return rate; Wood County (6.8%) and Berkeley County (6.8%) were represented by 20 responses each. Table 8 provides a complete description of the geographic distribution of returns.

Table 8: Frequencies: Return Rate by WV County

County	f	P	County	f	P
Barbour	1	0.3	Mineral	11	3.7
Berkeley	20	6.8	Mingo	8	2.7
Boone	5	1.7	Monongalia	9	3.1
Braxton	2	0.7	Monroe	18	6.1
Brooke	3	1.0	Morgan	3	1.0
Cabell	27	9.2	Nicholas	4	1.4
Calhoun	1	0.3	Ohio	10	3.4
Clay	0	0.0	Pendleton	1	0.3
Doddridge	1	0.3	Pleasants	0	0.0
Fayette	5	1.7	Pocahontas	1	0.3
Gilmer	1	0.3	Preston	1	0.3
Grant	1	0.3	Putnam	12	4.1
Greenbrier	11	3.7	Raleigh	10	3.4
Hampshire	5	1.7	Randolph	1	0.3
Hancock	11	3.7	Ritchie	5	1.7
Hardy	1	0.3	Roane	0	0.0
Harrison	12	4.1	Summers	0	0.0
Jackson	9	3.1	Taylor	2	0.7
Jefferson	2	0.7	Tucker	3	1.0
Kanawha	11	3.7	Tyler	0	0.0
Lewis	3	1.0	Upshur	12	4.1
Lincoln	2	0.7	Wayne	1	0.3
Logan	2	0.7	Webster	2	0.7
Marion	7	2.4	Wetzel	3	1.0
Marshall	5	1.7	Wirt	0	0.0
Mason	2	0.7	Wood	20	6.8
McDowell	0	0.0	Wyoming	1	0.3
Mercer	0	0.0	Missing	7	2.4
			Total	295	100.0

Participants' years of teaching experience were evenly distributed over six categories with 98% of the population indicating more than six years of experience and 45% of the population indicating more than 20 years of experience. Only 2% of the population identified themselves as having 3-5 years of experience. Table 9 displays the complete distribution of participants' years of teaching experience.

Table 9: Frequencies: Years of Teaching Experience

Years of Teaching Experience	f	P
3-5 Years	6	2.0
6-10 Years	52	17.6
11-15 Years	55	18.6
16-20 Years	43	14.6
21-25 Years	55	18.6
26-30 Years	41	13.9
31+ Years	39	13.2
Missing	4	1.4
Total	295	100.0

Since first achieving or attempting National Board certification, a large majority of teachers in the population have remained in the classroom. Eighty-four percent of participants identified themselves as classroom teachers. Small numbers of teachers indicated they had moved on to administrative positions at the school or county level or at the WVDE. Other teachers indicated they had become lead teachers, academic coaches, learning specialists, or curriculum supervisors. Table 10 provides a descriptive analysis of participants' current employment status.

Table 10: Frequencies: Current Employment Status

Current Employment Status	f	P
Classroom Teacher	248	84.1
School Level Administrator	9	3.1
County Level Administrator	2	0.7
WVDE	5	1.7
Higher Education Faculty	1	0.3
Other	27	9.2
Missing	3	1.0
Total	295	100.0

Participants' gender distribution was almost identical to that of the NBPTS applicant pool (Goldhaber, 2003): 91.5% female and 7.1% male. A descriptive breakdown is contained in Table 11.

Table 11: Frequencies: Gender

Gender	f	P
Male	21	7.1
Female	270	91.5
Missing	4	1.4
Total	295	100.0

Major Findings

All research questions were answered using the *National Board Certification Process Survey*, which consisted of 20 questions. Question 1 served to identify participants' National Board certification status. Questions 2 through 7 were developed from the NBPTS Five Core Propositions and focused on the effects of the process on a variety of teacher skills and attributes. Questions 8 and 9 elicited qualitative comments about participants' likes and dislikes of the process. Questions 10 through 12 focused on motivations and involvement in support groups. Questions 13 through 19 gathered demographic information including: the year certification was attempted, certificate area and grade level, teaching experience, current employment status, gender, and willingness to be contacted for interviews if necessary. Question 20 provided participants with a final opportunity to make comments about anything important that might have been overlooked.

Data were analyzed using SPSS 18.0. Frequencies, modes, Chi-Square values and/or Mann-Whitney U values were calculated for all Likert scale items. Qualitative data were analyzed for emergent themes. Following are sections devoted to the major findings pertinent to each research question.

Research Question One - NBCTs

To answer Research Question 1, “*What perceptions do National Board certified teachers in West Virginia have about the National Board process and its effects on their teaching?*”, National Board certified teachers who participated responded to six Likert scale items and three open-ended questions. Questions 2, 3, 4, 5, 6, and 7 utilized a six-point Likert scale in which 1 = “Not at all” and 6 = “Greatly.”

Quantitative Data – NBCTs. Modes were determined to ascertain respondents’ most frequently occurring responses (i.e., responses that were given by the majority of NBCTs in the study). The majority of NBCT respondents indicated 6 (“Greatly”) when asked how much the National Board certification process affected their ability to create a positive learning environment (SQ2), plan effective instruction (SQ3), deliver effective instruction (SQ4), and provide a sense of belonging to a learning community (SQ7). The majority of NBCT respondents were approaching “Greatly” with a mode of 5 as related to assessing student learning (SQ6). However, when asked about subject matter knowledge (SQ5), the majority of NBCT respondents provided a rating of 3, indicating moderate influence of the process in this area. Table 12 summarizes modes for Survey Questions 2 through 7 as answered by NBCTs.

Table 12: Survey Results: Modes (NBCTs)

Survey Questions	n	f						Mode
		1	2	3	4	5	6	
To what extent did your participation in the National Board process have an effect on . . .		(Not at all)			(Greatly)			
2. how you create a positive learning environment for students in your classroom?	200	10	6	17	41	47	79	6
3. how you plan effective instruction for your students?	201	5	6	17	35	55	83	6
4. how you deliver effective instruction to all students?	195	8	7	15	37	55	73	6
5. your knowledge of your subject-matter?	201	29	27	39	38	31	37	3
6. how you assess student learning?	198	7	12	29	39	59	52	5
7. your sense of belonging to a larger learning community	194	15	21	37	29	42	50	6

Chi-Square Goodness of Fit was used to examine the expected distribution of responses from Survey Questions 2 through 7. Attained p values resulted in significance at the $p < .05$ level in five of the six questions. NBCT respondents consistently chose higher Likert scale values for these survey questions: (SQ2) creating a positive learning environment for students in the classroom; (SQ3) planning effective instruction for students; (SQ4) delivering effective instruction to all students; (SQ6) assessing student learning, and (SQ7) belonging to a larger learning community. Chi-Square results of no significance for SQ5 indicated the distribution of responses did not differ significantly from chance when participants were asked if the process had an effect on their knowledge of subject matter. Chi-Square results for survey questions 2 through 7 as answered by NBCTs are summarized in Table 13.

Table 13: Survey Results: Chi-Square (NBCTs)

Survey Questions	n	f						Chi-Square p value*
		1	2	3	4	5	6	
To what extent did your participation in the National Board process have an effect on . . .		(Not at all)				(Greatly)		* < .05
2. how you create a positive learning environment for students in your classroom?	200	10	6	17	41	47	79	.000*
3. how you plan effective instruction for your students?	201	5	6	17	35	55	83	.000*
4. how you deliver effective instruction to all students?	195	8	7	15	37	55	73	.000*
5. your knowledge of your subject-matter?	201	29	27	39	38	31	37	.560
6. how you assess student learning?	198	7	12	29	39	59	52	.000*
7. your sense of belonging to a larger learning community	194	15	21	37	29	42	50	.000*

** SPSS defaults to .000 for p values < .0005

Qualitative Data – NBCTs. The National Board Certification Process

Survey gathered qualitative data in two primary ways. Comment boxes linked to specific Likert scale questions asked respondents to provide examples or explanation of their responses whereas open-ended questions provided participants opportunities to provide their thoughts and opinions about broader topics. Data were analyzed and emergent themes were identified.

NBCT respondents were quite forthcoming with their comments, and naturally they expressed a diverse range of thoughts and opinions. Several emergent themes were common throughout the survey. Comments referring to reflection were by far the most frequent, and NBCTs communicated its importance at almost every opportunity. A veteran teacher expressed it this way:

The National Board process made me even more aware of the impact I have on my students' enthusiasm for learning. I have been

teaching for a long time (21 years), so I think I did certain things without really considering why I incorporated them into my classroom practice. Because of the process, I really examined my practice. I think it really honed my skills, and it also made me rethink why I do what I do for my students. That has really made a great deal of difference for their growth as well as my own.

Affirmation of existing practices or beliefs was another strong theme with NBCTs viewing the process as helping them to understand the real value of many strategies and practices that were already in place. This theme never provided large numbers of comments, but it was consistently present throughout.

An Art teacher voiced a typical expression of this idea:

After many years of teaching, I found the experience interesting in validating many of the techniques I already employ. I have always used reflection, analysis, and redesigning as a method to improve my teaching and curriculum. Each year is not like the previous one.

Increased awareness of, or focus on, particular practices was also a prevalent theme with NBCTs expressing their belief that the process required them to become more aware of their planning, teaching, and assessment practices. A middle school English teacher summarized it as, "My delivery methods changed in subtle ways after reviewing good practices for small group and whole group instruction."

The addition of new or improved teaching strategies to teachers' repertoires was also a strong theme. Differentiated instruction and assessment-driven instruction, in particular, were often cited as strategies strengthened by participation in the National Board certification process. A veteran teacher certified as an Early Childhood Generalist expressed it this way:

After the National Board process I now place more emphasis on differentiated instruction in my classroom. I also incorporate many more assessment techniques and use the results of that assessment to drive my instruction for each child.

A positive effect on students was another frequently cited theme. A Middle Childhood Generalist expressed how her improved skill translated to more effective instruction for her students: "I REALLY focus on what is developmentally appropriate now. I am conscious in providing concrete scaffolding to move students into the abstract."

A recurring theme consistently present in the thoughts and feelings of small numbers of NBCTs was that the process had little or no effect on their practices. This theme varied in its strength from question to question, but it was almost always present, perhaps indicating that many of these teachers felt they were already highly skilled prior to undertaking the National Board certification process. An Early Childhood Generalist from Mercer County expressed: "While becoming a National Board Certified Teacher was a terrific learning experience, it did not radically change the way I teach." Table 14 highlights emergent themes identified from NBCTs for Survey Questions 2 – 7.

Table 14: Qualitative Themes NBCTs (SQ 2-7)

Survey Questions	n	Emergent Themes (most to least)
To what extent did your participation in the National Board process have an effect on . . .		
2. how you create a positive learning environment for students in your classroom?	157	<ul style="list-style-type: none"> • importance of reflection • awareness of students' needs • none or N/A • awareness or focus on positive learning environment • new strategies • affirmation of existing practices
3. how you plan effective instruction for your students?	141	<ul style="list-style-type: none"> • reflective practices • new strategies • focus on students • awareness of standards • none or N/A • affirmation of existing practices • integration of technology
4. how you deliver effective instruction to all students?	118	<ul style="list-style-type: none"> • improvement or increased awareness of practices • reflection • focus on students • new strategies or methods • none or N/A • integration of technology • affirmation of existing practices
5. your knowledge of your subject-matter?	124	<ul style="list-style-type: none"> • none or N/A • increase of subject matter knowledge • enhancement or review of subject matter knowledge • making connections • reflection • affirmation of existing knowledge
6. how you assess student learning?	126	<ul style="list-style-type: none"> • new or varied methods • improvement of assessment practices • none or N/A • assessment driven instruction • focus or awareness of assessment practices • reflection • affirmation of existing practices
7. your sense of belonging to a larger learning community	120	<ul style="list-style-type: none"> • moderate or little • none or negative • greatly • affirmation

When asked what they liked most or found most beneficial about the process (SQ8), NBCTs in the study reiterated their beliefs in the importance of reflection, positive benefit to students, and affirmation of existing practices. In addition, they mentioned the benefit of making connections and collaborating with others as well as the sense of accomplishment and personal growth they felt as a

result of becoming National Board certified. The pay increase associated with National Board certification was often cited as a benefit as was the challenge of the process and its role in lifelong learning. Finally, new opportunities for advancement and leadership roles were cited.

When asked what they liked least or found least beneficial about the process (SQ9), NBCTs in the study felt strongly that the scoring process should provide more feedback. Respondents also complained about technical issues and confusing directions associated with compiling and submitting portfolios. The time consumption requirements of the process were also cited as were the pressures of working within time constraints. Issues with the assessment center exercises, the intensity and amount of the writing required, a sense of isolation during the process, problems with stress, difficulties with videos, issues with money or cost, the long wait time for portfolios to be scored, the difficulty of the process as a whole, and scoring issues rounded out the list of dislikes. Interestingly, many NBCTs felt that there was nothing they did not like or find beneficial about the process.

When asked for any additional thoughts or comments about their experiences with National Board certification (SQ20), NBCTs in the study expressed belief in the worth of the process, offered tips for improvement, and described their efforts to help others engage in the process. Furthermore, they cited their satisfaction with their involvement in the process and described new opportunities related to their certification. They reiterated their disappointment in

the lack of feedback associated with scoring, described the stress inherent in the process, and expressed their pleasure with the pay raise provided to NBCTs. Finally, many of them offered thanks for state and county level support as well as for the opportunity to express their thoughts and feelings in the survey. Table 15 outlines emergent themes from Survey Questions 8, 9, and 20 for NBCTs.

Table 15: Qualitative Themes NBCTs (SQ 8, 9, & 20)

Survey Questions	n	Emergent Themes (most to least)
8. In general, what did you like most or find most beneficial about your participation in the NB certification process?	184	<ul style="list-style-type: none"> • importance of reflection • improved skill or benefit to students • affirmation • connections or collaboration with others • sense of accomplishment or personal growth • pay increase • challenge or lifelong learning • new opportunities • miscellaneous
9. In general, what did you like the least or find least beneficial about your participation in the NB certification process?	176	<ul style="list-style-type: none"> • lack of feedback • technical issues or confusion with directions • nothing or N/A • miscellaneous • time consuming / time constraints • assessment center • writing • isolation • stress • problems with videos • issues with money or cost • long wait time • difficulty • scoring issues
20. Is there anything else you would like us to know about your experiences with the National Board certification process? Please add any additional thoughts or comments.	86	<ul style="list-style-type: none"> • worthwhile • tips for improvement • helping others • miscellaneous • satisfaction • new opportunities • lack of feedback • stressful • pay raise • thanks

Research Question Two – NB Candidates

To answer Research Question 2, “*What perceptions do National Board candidates West Virginia have about the National Board process and its effects on their teaching?*”, National Board candidates (including those who had attempted certification but not achieved, those who attempted certification but were still retake candidates, and those who began the process but quit before completion) responded to six Likert scale items and three open-ended questions. Questions 2, 3, 4, 5, 6, and 7 utilized a six-point Likert scale in which 1 = “Not at all” and 6 = “Greatly.”

Quantitative Data – NB Candidates. Modes were calculated to determine respondents’ most frequently occurring response (i.e., responses that were given by the majority of NB Candidates in the study). The majority of NB Candidates indicated 5, nearing “Greatly” on the Likert scale, when asked how much the National Board certification process affected their ability to plan effective instruction (SQ3). Modes of 4 were noted when respondents were asked how much the National Board certification process affected their delivery of effective instruction (SQ4) and assessment of student learning (SQ6), indicating a moderate influence in these areas. A bi-modal finding of 1 and 4 was determined when participants were asked how much the National Board certification process affected their ability to create a positive learning environment (SQ2), indicating a group of NB Candidates found the process had no effect in that area, whereas another group perceived moderate effect. When asked how

much the process affected their subject matter knowledge (SQ5) and their sense of belonging to a larger learning community (SQ7), the majority of respondents chose 1, indicating no influence in those areas. Table 16 summarizes modes for Survey Questions 2 through 7 as answered by NB candidates.

Table 16: Survey Results: Modes (NB Candidates)

Survey Questions	n	Frequencies						Mode
		1	2	3	4	5	6	
To what extent did your participation in the National Board process have an effect on . . .								
		(Not at all)			(Greatly)			
2. how you create a positive learning environment for students in your classroom?	91	21	5	14	21	19	11	1, 4
3. how you plan effective instruction for your students?	89	15	9	12	20	22	11	5
4. how you deliver effective instruction to all students?	90	19	5	13	26	19	8	4
5. your knowledge of your subject-matter?	90	27	12	15	14	16	6	1
6. how you assess student learning?	90	20	9	12	23	19	7	4
7. your sense of belonging to a larger learning community	89	26	13	15	15	14	6	1

Chi-Square Goodness of Fit was used to examine the expected distribution of responses from Survey Questions 2 through 7. Attained p values resulted in significance at the $p < .05$ level in five of the six questions. For three of the five significant findings, analysis of frequencies shows that National Board candidates chose low Likert scale values indicating no influence in the following areas: (SQ2) creating a positive learning environment for students in the classroom; (SQ5) knowledge of subject matter; and (SQ7) belonging to a larger learning community. For (SQ4) delivering effective instruction and (SQ6) assessing student learning, frequencies for the greatest number of respondents

were nearing the upper range of the Likert scale, indicating moderate effects in those areas. Chi-Square results of no significance were obtained for (SQ3) planning effective instruction, indicating that responses did not differ significantly from chance. Chi-Square results for survey questions 2 through 7 as answered by NB candidates are summarized in Table 17.

Table 17: Survey Results: Chi-Square (NB Candidates)

Survey Questions	n	Frequencies						Chi-Square p value
		1	2	3	4	5	6	
To what extent did your participation in the National Board process have an effect on . . .								* < .05
		(Not at all)			(Greatly)			
2. how you create a positive learning environment for students in your classroom?	91	21	5	14	21	19	11	.019*
3. how you plan effective instruction for your students?	89	15	9	12	20	22	11	.106
4. how you deliver effective instruction to all students?	90	19	5	13	26	19	8	.001*
5. your knowledge of your subject-matter?	90	27	12	15	14	16	6	.008*
6. how you assess student learning?	90	20	9	12	23	19	7	.014*
7. your sense of belonging to a larger learning community	89	26	13	15	15	14	6	.016*

** SPSS defaults to .000 for p values < .0005

Qualitative Data – NB Candidates. *The National Board Certification*

Process Survey gathered qualitative data in two primary ways. Comment boxes linked to specific Likert scale questions asked respondents to provide examples or explanation of their responses, whereas open-ended questions provided participants opportunities to provide their thoughts and opinions about broader topics. Data were analyzed and emergent themes were identified.

Though smaller in number than the NBCTs, National Board candidates were equally forthcoming when providing comments and examples. Several

themes were prevalent throughout the survey, particularly the idea that the National Board certification process had little or no effect on NB candidates' practices. Respondents pointedly expressed this idea in seven of nine opportunities, making it by far the strongest theme to emerge. A high school history teacher who quit the process before completion explained:

I don't believe that participating in the NBCT process gave me any insight in providing a positive learning environment at all. I have always tried to create a positive learning climate in my classroom at all times.

Additionally, several respondents qualified this idea by adding that the process itself had a negative effect on their abilities while they were undertaking it. A Raleigh County teacher who is currently a retake candidate in Early Adolescent English / Language Arts asserted, "The only effect that NBPTS had on my students was to take time away from them while I worked and fretted over getting all the entries completed."

The importance of reflection was also a strong theme among NB candidates who often cited its beneficial effect on their practices. A Middle Childhood Generalist retake candidate described how reflection improved her instruction: "I look more closely at my assessments to decide the direction of my lessons. It is no longer about what I enjoy teaching."

Improved awareness of, or focus on, particular practices was also a prevalent theme among NB candidates, who often expressed their feelings that the process required them to become more aware of planning, teaching, and

assessment. A Jackson County high school teacher who is currently a retake candidate in English / Language Arts described how the process affected her work with English as a Second Language learners:

In order to complete the process, I had to learn new strategies that could be used to fulfill the portfolio requirements and that I could reference as I completed the exam component. As I studied ESL for the first time in my career, I became aware of strategies that I have since used with struggling English speakers.

Affirmation of existing practices was also a consistent theme among NB candidates. A Kanawha County high school English teacher who did not certify after two attempts asserted: “The process confirmed that I was approaching teaching using the best possible methods.”

Positive effect on students was another frequent theme. A Marion County retake candidate in middle school English / Language Arts explained: “I spend more time thinking about the needs of my students rather than the actual text.”

Another strong theme was that of new and improved methods of teaching and assessment. A Kanawha County middle school math teacher who did not certify explained how her assessment practices improved: “I've learned that there are more ways to assess a student's knowledge and I try to incorporate many different opportunities so all students can succeed.” Table 18 outlines emergent themes for NB Candidates from Survey Questions 2 – 7.

Table 18: Qualitative Themes NB Candidates (SQ 2-7)

Survey Questions	n	Emergent Themes (most to least)
To what extent did your participation in the National Board process have an effect on . . .		
2. how you create a positive learning environment for students in your classroom?	76	<ul style="list-style-type: none"> • none / negative • reflection • awareness or focus on positive learning environment • positive effects on students • new or improved teaching strategies • parent involvement • affirmation of existing practices
3. how you plan effective instruction for your students?	51	<ul style="list-style-type: none"> • none / negative • impact on students • new or refined instructional strategies • reflection • awareness or focus on effective instruction • integration of technology • awareness of standards • affirmation of existing practices
4. how you deliver effective instruction to all students?	45	<ul style="list-style-type: none"> • none / negative • impact on students • new strategies or methods • improvement or awareness of effective instruction • integration of technology
5. your knowledge of your subject-matter?	51	<ul style="list-style-type: none"> • none / negative • improvement, • review or enhancement
6. how you assess student learning?	47	<ul style="list-style-type: none"> • new or varied methods of assessment • none / negative • improved assessment • assessment driven instruction • focus on or awareness of assessment practices • reflection • affirmation of existing practices
7. your sense of belonging to a larger learning community	47	<ul style="list-style-type: none"> • none / negative • little to moderate

When asked what they liked most or found most beneficial about the process (SQ8), National Board candidates reiterated their thoughts about reflection and benefits for students. In addition, they cited connections and

collaborations, affirmation of existing practices, the challenge of the process and its benefits for lifelong learning. They also spoke of the sense of accomplishment and personal growth they felt after taking part, as well as the pay raise associated with National Board certification.

When asked what they liked least or found least beneficial about the process (SQ9), comments were widespread with miscellaneous being the prevailing category. These miscellaneous comments included the artificiality of the assessment center exercises, the difficulties of teaching Social Studies and Science in primary classrooms, complaints about NBPTS' handling of questions and requests, and the intensity and stressful nature of the process. Other strong themes here were the lack of feedback associated with the scoring process (NBPTS has recently added a new feedback component to the scoring process [NBPTS, 2010w]), confusion and/or difficulty with the portfolio directions and requirements, time demands, assessment center issues, scoring issues, and dissatisfaction with the required amount of writing. "Jumping through hoops" was another oft-cited complaint as well as the long wait for scores and video issues. A small number of NB Candidates indicated that everything about the process was beneficial.

When asked for any additional thoughts or comments about their experiences with National Board certification (SQ20), NB candidates took the opportunity to make several negative comments. A Braxton County teacher who attempted certification in Early Childhood Generalist and is not a retake candidate summarized several complaints:

NB wants people to fail, so they can get more money for retakes. It is a business! The NB process does not indicate outstanding teachers. It is an indicator of who can write well about themselves.

Participants' frustrations with the lack of feedback were also reiterated here as were indications of the inherent worth of the process, tips for improvement, complaints about the high cost, and descriptions of the stress associated with the process. Suggested tips for improving the process included clearer and more concise portfolio directions, the inclusion of examples with portfolio directions, coordination of a mentor program by NBPTS to better include teachers who are geographically isolated, and suggestions that the WV Department of Education or county boards of education provide mentors, offer additional professional leave to candidates, and include National Board certification as a weighted category in applications for employment. Table 19 highlights emergent themes for Survey Questions 8, 9, and 20 as answered by NB candidates.

Table 19: Qualitative Themes NB Candidates (SQ 8, 9, & 20)

Survey Questions	n	Emergent Themes (most to least)
8. In general, what did you like most or find most beneficial about your participation in the NB certification process?	79	<ul style="list-style-type: none"> • reflection • improved skill / benefit to students • connections and collaboration • affirmation of existing practices • challenging / lifelong learning • accomplishment or personal growth • pay increase • miscellaneous

Survey Questions	n	Emergent Themes (most to least)
9. In general, what did you like the least or find least beneficial about your participation in the NB certification process?	76	<ul style="list-style-type: none"> • miscellaneous • lack of feedback • confusion / difficulty • time demands • assessment center issues • scoring issues • writing • “jumping through hoops” • long wait for scores • nothing or N/A • video issues
20. Is there anything else you would like us to know about your experiences with the National Board certification process? Please add any additional thoughts or comments.	50	<ul style="list-style-type: none"> • negative • lack of feedback • miscellaneous • worthwhile • tips for improvement • high cost • stress

Research Question Three - Comparison

To answer Research Question 3, “*What differences, if any, exist between the perceptions of National Board certified teachers and National Board candidates in West Virginia in regard to the National Board certification process and its effects on their teaching?*”, data collected from National Board certified teachers and National Board candidates were closely examined and compared. Quantitative data were analyzed using SPSS 18.0, and emergent themes identified in qualitative data were compared.

Quantitative Data. Both groups responded to six Likert scale items on the *National Board Certification Process Survey*. Survey Questions 2, 3, 4, 5, 6, and 7 utilized a six-point Likert scale where 1 = “Not at all” and 6 = “Greatly.” A Mann-Whitney U test was used to calculate mean ranks in order to determine if there were differences in the rankings chosen by NBCTs and NB Candidates.

Significant differences were found for all six items at a level of $p < .05$. In each instance, NBCTs' mean ranks were significantly higher than those of NB Candidates, indicating that NBCTs felt more strongly than NB Candidates that their participation in the process had an effect on their teaching in the following areas: creating a positive learning environment (SQ2), planning effective instruction (SQ3), delivering effective instruction (SQ4), knowledge of subject matter (SQ5), assessing student learning (SQ6), and belonging to a learning community (SQ7). Table 20 summarizes the Mann-Whitney U results.

Table 20: Mann-Whitney U: NBCTs and NB Candidates

Survey Questions / Certification Status	f	Mean Rank	p value
			* < .05
Positive Learning Environment			
NBCTs	200	165.23	
NB Candidates	91	103.74	.000*
Planning Effective Instruction			
NBCTs	201	165.13	
NB Candidates	89	101.17	.000*
Deliver Effective Instruction			
NBCTs	195	163.64	
NB Candidates	90	98.28	.000*
Subject Matter Knowledge			
NBCTs	201	155.67	
NB Candidates	90	124.60	.000*
Assess Student Learning			
NBCTs	198	161.42	
NB Candidates	90	107.27	.000*
Belong to Learning Community			
NBCTs	194	158.70	
NB Candidates	89	105.59	.000*

** SPSS defaults to .000 for p values < .0005

Qualitative Data. Both groups of respondents provided thoughts, opinions, and examples in comment boxes linked to Survey Questions 2, 3, 4, 5, 6, and 7. In addition, respondents had opportunities for open-ended responses to Survey Questions 8, 9, and 20. A comparison of emergent themes follows.

Many similarities were noted in the emergent themes identified in the qualitative data provided by each group of respondents. In fact, most identified themes were present in both groups. The importance of reflection or reflective practice was the theme most frequently cited by NBCTs and NB Candidates as having an effect on their classroom practices. This theme was present in comments linked to specific questions and also in open-ended responses. Many teachers declared that the intense reflection required by the process caused them to evaluate and reevaluate their classroom practices to a new extent, resulting in improved instruction. An NBCT from Tucker County explained:

I feel I am a much more reflective teacher. I get to know my students' strengths and weaknesses on a much deeper level by evaluating my teaching and lessons as well as their progress.

A retake candidate in Science from Ohio County agreed:

The intense focus on my teaching practices and especially studying how my teaching translates into learning for each individual student while watching the videos that were required truly took my teaching to another level.

Affirmation of existing practices was a theme cited consistently, though less frequently by both groups. Many teachers, both certified and non-certified, felt that their experiences with the National Board certification process confirmed the efficacy of the instructional practices they already had in place. An NBCT with more than 20 years of experience teaching Art described her sense of validation:

“After many years of teaching, I found the experience interesting in validating many of the techniques I already employ.” An English teacher from Kanawha County who did not certify and is no longer a retake candidate shared a similar thought:

It validated my teaching methods, and made me feel that I was on top of my game as far as how I approach students, my classroom, and assessments.

An increased awareness or focus on positive learning environment, effective planning, effective delivery, and assessment of students was another frequently cited benefit of the process. Many teachers described an added intensity within their daily practices that had not existed before their certification attempt. Speaking of the positive learning environment in her classroom, an NBCT from Wood County described her special efforts:

I have always tried to create a positive learning environment in my classroom. Going through the National Board process is a reminder that I need to make a special effort to make everyone feel successful.

A retake candidate in English from Marion County spoke of her heightened awareness during the certification process: “It made me more aware of the relevance or lack thereof of the curriculum choices I make.”

In addition to increased awareness or focus, the addition of new strategies for instruction and assessment was also a strong theme for both groups. In their

efforts to meet the standards of NBPTS, teachers sought out new strategies and practices and incorporated them into their instructional repertoire. An Early Childhood Generalist from Wood County described changes to her instructional practices:

After the National Board process I now place more emphasis on differentiated instruction in my classroom, I also incorporate many more assessment techniques and use the results of that assessment to drive my instruction for each child.

A retake candidate in elementary Music from Jackson County described improvements in her assessment practices:

I have established four basic rubrics that I grade with for each class. This process prompted me to be consistent with this process and students now are completely aware of how each class time is being graded, which helps them to perform better since they know the grading criteria.

A persistent theme running through the comments of both groups was the idea that participation in the National Board certification process had little or no effect on participants' classroom practices. This idea was most often expressed with a note of confidence that the participant was already excellent at the topic expressed in the survey question, and was particularly true as it pertained to subject knowledge where this theme was by far the strongest theme to emerge.

A Raleigh County NBCT summed up the thoughts of many:

I have always done my very best to be an expert in my subject-matter by attending state and national conferences, continuing my degrees, and surrounding myself with other professional art teachers. What this process did for me was improve the way I convey my knowledge of my subject matter to my students.

Differences in the comments offered by survey participants were less apparent and perhaps a matter of degree. For example, reflection was a common theme in both groups, but NBCTs were more frequent, more enthusiastic, and more profuse in their descriptions of its importance. A typical NBCT comment concerning reflection stated:

NB was the best professional development I have ever participated in. Through the process, I honed my ability to be reflective about my teaching practice and all the decisions I made on a daily basis. It changes the way you think about education and why you make the choices you do. It helps you to refine the process of eliminating the unnecessary and focusing on those things that will truly have a high student impact.

Yet a typical comment concerning reflection by an NB Candidate merely stated:

“This process of National Board Certification has made me reflect more on my teaching techniques and lesson planning.”

This characteristic was true for many emergent themes. With some individual exceptions, NBCTs tended to have more to say and were more

passionate in their comments, whereas NB Candidates tended to express themselves more succinctly. The one theme where this was reversed, however, was the expression of negative thoughts and feelings. NBCTs shared negative feelings about several aspects of the process, particularly the lack of feedback for scores, the long wait-time before scores are reported, and the overall difficulty and stress level of the process itself. One NBCT described the process: “It is time consuming and stressful to get everything prepared and sent in the format and time frame required.” NB Candidates, however, more frequently and more profusely expressed negative feelings about the process itself, perhaps because many of them had not been successful. NB Candidates were critical of many different aspects of the certification process: the lack of feedback in the scoring process, confusing portfolio directions, technical requirements of writing and videotaping, the long wait for scores, assessment center difficulties, the overwhelming nature of the writing requirements, and the sense of isolation created by the process. Their comments on these topics were vehement at times. An elementary teacher from Hampshire County expressed her frustrations with the process:

I felt the guidelines were too vague and the feedback was not constructive at all. I did not choose to become a retake candidate because I did not know where to start. A few of the areas I thought were my strongest reflected some of my lowest scores. Without constructive feedback, how was I supposed to know how to

improve those areas? If I taught my class with those same precepts, there would be very little true learning occurring. This frustrated me.

Similarly, a Mercer County math teacher shared her feelings about the difficulties of the process:

I felt disheartened to find that the process was more about jumping through hoops, not good teaching. I was disappointed that while we would never consider asking our students to improve without explaining to them where they made their mistakes, yet that's what this process does. I knew that going in but it was still hard to get through. I also heard tales of people with scripted videos etc that to me defeated the purpose of the process. I chose not to continue based on these findings

This difference between the two groups was again apparent in the responses to SQ20, which asked for any additional thoughts or comments about the National Board certification process. NBCTs who responded took opportunity to express their belief in the worthiness of the process itself, to share tips for how the process might be improved, and to relate how they work to help others through the process. An NBCT from Monongalia County described the effects of her certification on her colleagues:

It is a wonderful experience however it is not to be entered into lightly. It takes a great deal of commitment not only of you, but your family as well. One of the greatest benefits that I've experienced

was seeing colleagues deciding to work on National Boards themselves. I was the first one in our school to certify and this past year we had 5 teachers successfully certify, bringing our total to 7. Outstanding! My principal at the time kept encouraging me and saying that as soon as I was successful others would be ready to try. He was right and it has been wonderful to be the cheerleader to my colleagues.

A Mercer County teacher, however, offered a response typical of NB Candidates when she took the opportunity to describe her feelings of frustration as a result of her failure to certify:

I am sad I have such negative feelings about the National Board certification process. I know I need to get over it but I really feel I am better than this process thinks I am. Send me a group of educational professionals to observe and determine if I have the qualities of a National teacher and I am sure they would say yes.

Ancillary Findings

Ancillary findings in this study were primarily concerned with participants' motivations, their involvement with support systems, and the relationship between gender, years of experience, and certification status. Descriptive statistics were used to examine the expected distribution of data gathered from Survey Questions 10, 11, 12, 16, and 18 and to compare NBCTs' and NB Candidates' responses to determine if significant differences were present. Ancillary results are reported below.

Motivations

Survey Question 10 asked participants to identify their reasons for attempting National Board certification. Five response options were available, including the choice “Other.” Survey respondents could choose more than one response for this question. Analysis revealed that both groups of participants ranked the categories in the same order; from greatest to least, participants’ reasons for attempting National Board certification were:

- salary increase
- professional growth
- encouragement of friends and colleagues
- encouragement of school or county administrators
- other

Even though each group ranked these reasons in the same order, percentages of NBCTs who selected each choice were invariably higher (Table 21).

When choosing “Other,” NBCTs frequently mentioned the following additional motivations for attempting National Board certification: validation of their teaching expertise, the enjoyment of a personal or professional challenge, the added prestige or recognition resulting from National Board certification, and an increased retirement benefit resulting from the salary increase associated with National Board certification. NB Candidates who chose “Other” also mentioned the retirement benefit, the challenging nature of the process, and the validation of their teaching expertise. In addition, several NB Candidates also mentioned that the cachet of National Board certification would aid in future job transfers or

relocations. Table 21 displays a comparison of reasons chosen by NBCTs and NB Candidates.

Table 21: Pearson 2x2 Chi-Square: Motivations (NBCTs and NB Candidates)

Reasons for Attempting National Board Certification	Yes (P)	No (P)	p value * < .05
Salary Increase			
NBCTs	179 (89)	22 (11)	
NB Candidates	79 (86)	13 (14)	.435
Professional Growth			
NBCTs	167 (83)	34 (17)	
NB Candidates	67 (73)	25 (27)	.042*
Encouragement of Friends and Colleagues			
NBCTs	101(50)	100 (50)	
NB Candidates	29 (32)	63 (68)	.003*
Encouragement of School or County Administrators			
NBCTs	50 (25)	151 (75)	
NB Candidates	20 (22)	71 (78)	.591
Other			
NBCTs	34 (17)	167 (83)	
NB Candidates	12 (13)	80 (87)	.398

Pearson 2x2 Chi-Square tests were conducted to determine if there were significant differences between certification groups based on their expressed reasons for attempting certification. Significance at the $p < .05$ level was found in two of five areas: professional growth and encouragement of friends and colleagues. Further analysis of percentages indicates that respondents who identified one or both of these reasons for attempting National Board certification were more likely to be certified. Table 21 also summarizes the Pearson 2x2 Chi-Square results.

Support Programs

Survey Questions 11 and 12 asked participants to identify support programs they were involved in and to indicate the importance of that support to them. Six categories of support were available as choices for SQ11, including the choice “Other.” Because National Board candidates may elect to be part of more than one support program, respondents could choose more than one category for this question. NBCTs most frequently chose college / university provided support class (38.6%) and attempted with friends / colleagues (34.2%). NB Candidates most frequently chose RESA (Regional Educational Service Agency) provided support class / group (33.3%), county provided support class / group (32.3%), and college / university provided support class (30.1%). The percentage of NBCTs who reported no participation in a support group or class was 12.9%, while 8.6% of NB Candidates reported the same. NBCTs who chose “Other” frequently cited the following types of support programs or groups: Benedum Foundation cohort, West Virginia Education Association (WVEA) classes, Yahoo news groups, other online support, and spousal support. NB Candidates who chose “Other” frequently cited the following types of support programs or groups: WVEA, Yahoo news groups, other online support, and Project Merit. Table 22 summarizes respondents’ reported participation in support programs.

Table 22: Support Programs: Participation and Pearson 2x2 Chi-Square

Types of Support Programs	Yes (P)	No (P)	p value * < .05
Attempted with friends / colleagues			
NBCTs	69 (34)	132 (66)	
NB Candidates	18 (20)	74 (80)	.010*
County-provided support class / group			
NBCTs	51 (25)	150 (75)	
NB Candidates	30 (32)	62 (68)	.199
RESA-provided support class / group			
NBCTs	31 (15)	170 (85)	
NB Candidates	31 (34)	61 (66)	.000*
College / university-provided support class / group			
NBCTs	78 (39)	123 (61)	
NB Candidates	28 (30)	64 (70)	.166
Other			
NBCTs	32 (16)	169 (84)	
NB Candidates	10 (11)	82 (89)	.252
No support class / group			
NBCTs	26 (13)	175 (87)	
NB Candidates	8 (9)	84 (91)	.293

** SPSS defaults to .000 for p values < .0005

Pearson 2x2 Chi-Square tests were conducted to look for differences between support programs and participants' certification status. Significance at the $p < .05$ level was found for two categories of support programs: attempted with friends and colleagues, and participation in a RESA-provided support class or group. Attempting certification with friends or colleagues appears to be beneficial as significantly higher numbers of NBCTs did so. RESA-provided support classes appear to be of little help in certification, as significant numbers of NB Candidates participated in them yet did not certify. Table 22 also summarizes Pearson Chi-Square data.

Survey Question 12 asked respondents who had participated in a support group of any type to rate the importance of that support. A 5-point Likert scale was used with 1 = Not at all and 5 = Greatly. A Mann-Whitney U test was used to

calculate mean ranks in order to determine if there were differences in the rankings chosen by NBCTs and NB Candidates on Survey Question 12. Significance at the $p < .05$ level was found, indicating that NBCTs were significantly more likely to rank their support class or group as being important. Table 23 summarizes the Mann Whitney U results.

Table 23: Mann-Whitney U: Support Programs

Importance of Support / Certification Status	n	Frequencies					Mean Rank	p value
		1 (Not at all)	2	3	4	5 (Greatly)		
How important was the support you received?								* < .05
NBCTs	170	8	13	17	32	100	134.77	
NB Candidates	82	3	11	16	20	32	109.35	.005*

When asked to provide examples of how their support class or group was important or helpful, NBCTs frequently cited the following as being particularly helpful: timelines or deadlines, feedback from readers or mentors, feedback from classmates, encouragement, collaboration, collegiality, help with directions, moral support, and help with writing. Additionally, several NBCTs cited a negative influence of their support class or group, singling out the overwhelming nature of the class or the inadequacy of their mentor or support provider. NB Candidates provided the following examples of ways that their support class or group was helpful: collaboration, collegiality, information and tips, pacing, feedback from readers or mentors, help with directions, timelines or deadlines, and moral support. Negative aspects of support mentioned by NB Candidates included

overwhelming criticism, confusing or vague feedback, too much positive feedback, and poor leadership.

Gender and Years of Experience

Pearson 2x2 Chi-Square tests were conducted to determine if there were significant differences in certification status based on gender. Significance at the $p < .05$ level was found, indicating a distribution significantly different from chance. Females in the study certified at much higher rates than males; 68% of females in the study achieved National Board certification, whereas only 48% of males in the study achieved certification. For males, a 48% certification rate is higher than the national first-attempt percentage but lower than the overall certification rate of 65%. Table 24 summarizes data representing gender and certification status.

Table 24: Pearson 2x2 Chi-Square: Gender and Certification

Certification Status	Male (P)	Female (P)	p value * < .05
NBCTs	10 (48)	190 (68)	
NB Candidates	11 (52)	91 (32)	.030*

Pearson 2x2 Chi-Square tests were also conducted to determine if there were significant differences in certification status based on teachers' years of experience. Significance at the $p < .05$ level was found, again indicating a distribution significantly different from chance. Teachers with 3-5 years of experience certified at significantly lower rates than did teachers of all other years of experience. Teachers with 31+ years of experience certified at significantly

higher rates. Table 25 provides a summary of data related to years of experience and certification status.

Table 25: Pearson 2x2 Chi-Square: Years of Experience and Certification

Certification Status	Years of Experience							p value * < .05
	3-5 (P)	6-10 (P)	11-15 (P)	16-20 (P)	21-25 (P)	26-30 (P)	31+ (P)	
NBCTs	1 (17)	34 (65)	34 (62)	30 (70)	40 (73)	27 (66)	34 (87)	
NB Candidates	5 (83)	18 (35)	21 (38)	13 (30)	15 (27)	14 (34)	5 (13)	.015*

CHAPTER 5: SUMMARY AND DISCUSSION

Introduction

Teacher certification by the National Board for Professional Teaching Standards (NBPTS) has long been a sign of excellence in the teaching profession. Teachers undergoing the process submit portfolios, often including videos and samples of student work, and complete written assessments in order to show they have met the rigorous standards created by NBPTS. These standards apply to more than 95% of American teachers, and National Board certified teachers make up significant portions of the teacher workforce in several states. The certification process is difficult, time consuming and expensive, and not without its critics. Over the years, National Board certification has been the subject of much research, a majority of it concerned with its effects on student achievement. Other researchers have examined the practices and perceptions of NBCTs. A great deal of the research on National Board certification is positive, particularly regarding its positive effect on student achievement, but other researchers have questioned the validity of the process itself, its effects on student achievement, its cost-effectiveness, and its scoring process. Some researchers have asserted that participation in the process improves teachers' practices, an opinion echoed by NBCTs across the nation. This study's purpose was to investigate the perceptions of West Virginia teachers who have attempted National Board certification and compare the perceptions of teachers who have

achieved with those who attempted but did not (or have yet to) achieve National Board certification.

Research Questions

Qualitative and quantitative methods were used to answer the following research questions:

1. What perceptions do National Board certified teachers (NBCT) in West Virginia have about the National Board process and its effects on their teaching?
2. What perceptions do National Board candidates (NB candidates) in West Virginia have about the National Board process and its effects on their teaching?
3. What differences, if any, exist between the perceptions of National Board certified teachers and National Board candidates in West Virginia in regard to the National Board certification process and its effects on their teaching?

Methods

This mixed-methods study used quantitative and qualitative methods to gather data from West Virginia teachers who attempted National Board certification from 2004-2009, including both those who certified and those who did not. A researcher-created survey, the *National Board Certification Process Survey*, asked respondents to identify themselves as a National Board certified teacher (NBCT) or a National Board candidate (NB Candidate). Demographic information collected included the year of certification attempt, certificate area

and level, West Virginia county of employment, years of teaching experience, current employment status, gender, and willingness to be contacted for an interview if necessary. Quantitative data were primarily gathered through six Likert scale items based on the National Board of Professional Teaching Standards' (NBPTS) Five Core Propositions. In this section, participants were asked to rate the effect of the National Board certification process on:

- Creating a positive learning environment
- Planning effective instruction for students
- Delivering effective instruction to all students
- Knowledge of subject matter
- Assessing student learning
- Sense of belonging to a larger learning community

Responses to these questions were on a six-point Likert scale in which 1 = "Not at all" and 6 = "Greatly." Additional quantitative data were gathered about participants' reasons for attempting National Board certification and their involvement in various support programs. A five-point Likert scale item (where 1 = "Not at all" and 5 = "Greatly") asked participants to rank the importance of their support program(s).

Qualitative data in the survey were gathered in two ways. Comment boxes linked to specific questions asked participants for examples, explanation or thoughts and opinions. Open-ended questions asked participants broader questions about what they liked least or found least beneficial and what they liked

most or found most beneficial. A final open-ended question allowed participants to add any further thoughts or comments they might have had.

Data were analyzed using SPSS 18.0. Descriptive statistics were used to exhibit frequencies and modes. Chi-Square and/or Mann-Whitney U values were calculated for Likert scale items. Qualitative data were analyzed for emergent themes.

Population

The population for this study consisted of West Virginia teachers who applied for National Board fee reimbursement from the West Virginia Department of Education from 2004-2009 and for whom accurate email addresses could be obtained. More than 700 names were initially obtained. Duplications, name changes, retirements, and non-functioning email addresses reduced the population to 515. Of the total population, approximately 60% were National Board certified teachers (NBCTs) and 40% were National Board candidates (NB Candidates). The online survey distribution site, SurveyMonkey, was used to collect data. A total of 295 usable surveys were returned, producing a return rate of 57.28%. This established a 99% confidence interval with a 4.9% margin of error (CustomInsight, 2008). Of the 295 usable responses, 68.5% were NBCTs and 31.5% were NB Candidates.

Summary of Findings

The Five Core Propositions developed by NBPTS “form the foundation and frame the rich amalgam of knowledge, skills, dispositions and beliefs that

characterize NBCTs” (NBPTS, 2008g, ¶2). The *National Board Certification Process Survey* used the Five Core Propositions as a basis for asking NBCTs and NB Candidates about their perceptions of the process and its effects on their teaching. Analysis of the results reveals significant differences in the perceptions of the two groups as well as some interesting similarities. Summaries of findings related to each research question follow.

Research Question One – NBCTs

Taken together, the emergent themes present in the qualitative data and the quantitative findings for Research Question One indicate that the majority of NBCTs in the study believed their participation in the National Board certification process had strong effects on their teaching practices. Within the six aspects of teaching identified in the survey (which were based on NBPTS’ Five Core Propositions), NBCTs perceived strong effect on “positive learning environment,” “planning effective instruction,” “delivering effective instruction,” “assessing student learning,” and “belonging to a learning community”. As measured on a Likert scale in which 1 = “Not at all” and 6 = “Greatly,” each of the above aspects was given a mode of 6 by NBCTs and produced Chi-Square values significant at $p < .05$ levels. “Knowledge of subject matter” was the only aspect perceived by NBCTs as being unaffected by their participation in the process. Qualitative data indicated participants believed improvements to their practices primarily resulted from increased reflection, heightened awareness or focus, and the addition of new and improved teaching strategies. Small numbers of NBCTs felt that they

were already accomplished teachers and that their participation in the process had little or no effect on their teaching expertise.

Research Question Two – NB Candidates

Taken together, the quantitative findings and emergent themes present in the qualitative data related to Research Question Two offer mixed results. Quantitative data indicate that many NB Candidates felt their participation in the National Board certification process had moderate effects on their teaching practices as indicated by a mode of 5 for “planning effective instruction” and modes of 4 for “delivering effective instruction” and “assessing student learning.” Other NB Candidates felt the process had no effect on their teaching practices, as indicated by modes of 1 for “knowledge of subject matter” and “belonging to a larger learning community.” The aspect “creating a positive learning environment” had a bi-modal finding of 1 and 4. Each of these aspects except “planning effective instruction” produced Chi-Square values significant at $p < .05$ levels. These perceptions were largely substantiated through qualitative comments. The strongest theme to emerge from qualitative data was that of “none” or “N/A” as applied to the above aspects. Smaller numbers of NB Candidates, however, felt that reflection, heightened awareness of their practices, and new and improved methods were typical of the moderate effects on their teaching. Many National Board candidates, particularly those who did not certify and are not retake candidates, harbored negative feelings about their participation in the process.

Research Question Three – Comparison

Quantitative data related to Research Question Three indicate strong differences between NBCTs and NB Candidates. A majority of NBCTs believe their participation in the National Board certification process had strong effects on their practices, whereas a minority of NB Candidates perceived the same. Mann-Whitney U values were calculated to examine mean rankings, producing significance at $p < .05$ levels for all six aspects measured. Comments from NBCTs and NB Candidates substantiate this difference as the most common theme among NB Candidates was that the process had little or no effect on their teaching practices – an idea that was consistently prevalent throughout their comments, whereas only a small minority of NBCTs felt the same. NB Candidates voiced this theme in five of the nine survey questions that elicited comments. As a group, NBCTs tended to be more positive, more passionate, more profuse, and more likely to attribute improvements in their practices to their participation in the process. NB Candidates tended to be less positive, less profuse, and less likely to attribute improvements in their practices to their participation in the process. NB Candidates were, however, more extreme in their negative views of the process.

Ancillary Findings

“Pay increase” was the primary motivation for NBCTs and NB Candidates, with all other motivation categories ranked in the same order. NBCTs ranked all categories notably higher than did NB Candidates. Teachers who identified

“professional growth” and “encouragement of friends and colleagues” were significantly more likely to be certified.

Both groups indicated involvement in a wide variety of support groups. NBCTs were most likely to attempt certification with friends and colleagues, whereas NB Candidates were most likely to participate in support classes sponsored by a Regional Educational Service Agency (RESA). Surprisingly, slightly more NBCTs indicated no involvement in a support class than did NB Candidates. Examined for significance, results indicated that attempting certification with friends and colleagues was beneficial to successful certification and that involvement in RESA-provided support classes was not beneficial to success. NBCTs ranked the importance of their support program significantly higher than did NB Candidates. Valuable aspects of support identified included deadlines, feedback, mentors, encouragement, collaboration, collegiality, information and tips.

Female participants in the study certified at significantly higher rates than males, a finding that echoes national certification rates (Goldhaber, 2003). Females' certification rate of 68% was considerably higher than national averages as about 40% of candidates nationwide certify on their first attempt, with the certification rate rising to 65% for those who resubmit (Minichello, J., personal communication, February 4, 2008). For males, a 48% certification rate for WV teachers is higher than the national first-attempt percentage but lower than the overall certification rate of 65%.

Participants with 3-5 years of experience certified at very low rates (17%), whereas participants with 31+ years of experience certified at the highest rate (87%). Certification rates for all categories of experience other than 3-5 years ranged from 62-87%, which were higher than national certification rates (40% for first attempt, 65% overall (Minichello, J., personal communication, February 4, 2008).

Findings Related to Literature

Research related to National Board certification is largely positive but not undisputed. A discussion of findings in relation to pertinent supporting and dissenting literature follows.

Supporting Research

A great deal of existing research related to National Board certification concerns the practices and perceptions of NBCTs. Results of this study indicated that significant numbers of NBCTs perceived their participation in the National Board certification process as having great influence on their classroom practices. These results confirmed previous research by Coskie and Place (2007), Lustick and Sykes (2006), Tracz, Daughtry, Henderson-Sparks, Newman, and Sienty (2005), Graham, Oliver, Oppong, Bruce, Jakubiak, Johnson, Kennedy, Mansberger, Naravan, Park, Peker, Reed, and Wynne (2005), Taylor (2000), and NBPTS (2010w). Each of these studies concluded that participants in the National Board certification process perceived their experiences as greatly affecting their classroom practices. Tracz, et al. (2005) declared that teachers

who participated in the National Board certification process viewed it as enhancing their participation in learning communities and improving their teaching practices, results that are verified by this study.

To a lesser degree, National Board candidates in the study held similar views. Statistically significant numbers of NB Candidates perceived moderate impact on their practices in four of six categories. While no extant research is devoted solely to teachers who attempted National Board certification but did not succeed, results of this study supported the conclusion of Lustick and Sykes (2006) who asserted that participation in the certification process produced improvements to candidates' practices whether they certified or not.

The majority of research devoted to National Board certification has focused on student achievement. Qualitative data from this study help to confirm statistical evidence provided by a number of studies that concluded NBCTs had positive effects on their students' achievement. Bond, Smith, Baker and Hattie (2000), Cavaluzzo (2004), Goldhaber and Anthony (2004), Vandevort, Amrein-Beardsley and Berliner (2004), Smith, Gordon, Colby and Wang (2005), Phillips (2008) and Hakel, Koenig and Elliott (2008) each cited positive impact on student achievement as a major conclusion of their research. Although this study did not specifically examine the impact of National Board certification on student achievement, participants frequently alluded to student success, which provides anecdotal evidence based on NBCTs' and NB Candidates' perceptions that participation in the process provides positive effects for students. For example,

an NBCT certified in Early Adolescent / Young Adult Career and Technical Education described how her participation affected her instruction, which in turn helped her students to be more successful:

Through the process I have developed a greater understanding of the needs of my students, which in turn allows me to adapt my instruction and develop an environment most successful to those particular needs.

Dissenting Research

Dissenting research concerning the National Board certification process is diverse and covers a variety of questions and concerns, many of which are at least partially supported by data gathered in this study.

Richards (2004) expressed concern about the scoring process used by NBPTS, describing it as subjective and lacking academic substance. Scoring issues, particularly the lack of feedback associated with scores, was a common emergent theme for both NBCTs and NB Candidates. While NBPTS has recently begun to provide basic feedback with candidates' scores (NBPTS, 2010w), this was not true for the majority of participants in the study, a fact that caused many NB Candidates frustration. A teacher who did not certify described her feelings:

When I assess my students, I tell them what mistakes were made and provide instruction for improvement. This process just made me feel like a failure. I wasn't sure how to improve. I just was told I did not pass and to try again later.

Boyd and Reese (2006) described their concerns about the high cost of the certification process and questioned its cost-effectiveness as well. NBCTs and NB Candidates also expressed similar concerns in comments. A Pocahontas County retake candidate in Early Adolescent Science voiced her concerns about the high cost in relation to the lack of feedback she received:

This process has the potential to be an excellent source of growth for teachers. However, as expensive as it is, there should be some form of feedback for potential retake candidates. It really is a guessing game.

Podgursky (2001) portrayed National Board certification as merit pay in disguise, and 32 states offer financial incentives to NBCTs, and candidates nationwide have access to fee subsidies (NBPTS, 2008i). Qualitative and quantitative data from this study confirm that the pay raise associated with certification is the primary motivation of all teachers in the population. Both groups ranked “pay raise” as their principal motivation for attempting certification, and “pay raise” was an emergent theme present in the comments of both groups when asked what they liked most or found most beneficial about the process. An NBCT summed up the motivations of many: “I became a better teacher, and my students benefited. I wouldn't have attempted it without the lure of a salary increase, however.”

Goldhaber and Anthony (2004) noted beneficial effects of NBCTs on student achievement but also described great variability among NBCTs' abilities, going so far as to assert that some NBCTs were actually less effective during

their certification attempt due to the rigors of the process. Similar thoughts were voiced by small numbers of teachers in this study. An NB Candidate described the difficulty of completing her portfolios while attempting to meet the needs of her students:

I found it very difficult to complete all of the portfolios and teach 100% effectively. Why not gather all information and data about the students during the school year and then put the portfolios together in the summer?

Hakel, Koenig and Elliott (2008), who acknowledged the effectiveness of NBCTs, wondered about the source of that effectiveness. Does the process improve teachers' skills or does it merely attract highly skilled applicants? This study offers conflicting answers to that question. On one hand, statistical measurements of teachers' perceptions regarding effects of the process on their teaching practices provided significant results indicating the majority of teachers in the study felt their practices were positively impacted by participation in the National Board certification process. On the other hand, small but consistent numbers of NBCTs and NB Candidates expressed the belief that participation in the process had little or no effect on their teaching. These conflicting notions do little to answer questions raised by Hakel, et al.

Hess (2004) raised concerns about lower certification rates for African-American and male teachers. While the *National Board Certification Process Survey* did not ask participants to identify their race or ethnicity, it is notable that within the largely female population, female teachers (68%) certified at

significantly higher rates than males (48%).

Implications for Action

Since its beginnings in 1987, National Board certification has earned a reputation for recognizing exceptional teachers in all content areas and grade levels. School systems throughout the country have acknowledged the expertise of National Board certified teachers, attracting them to the process with financial incentives and rewarding them for their dedication, skill and leadership. NBPTS has also recently begun to expand certification to include principals and other educational leaders (NBPTS, 2010x). Lately, however, in the country's current economic climate and as districts have devoted more resources to state and federal mandates, states such as Illinois have reduced or put National Board funding on hold (Illinois State Board of Education, 2010), and other researchers and commentators have questioned the process itself. These facts make it imperative that interested parties, such as local and state boards of education, state legislators, teachers' unions, and support providers consider the following implications of this study:

1. Participants in the National Board certification process strongly believe the process improves their practices and makes them better teachers. Much research has been devoted to measuring the effectiveness of NBCTs, and the thoughts and feelings of NBCTs in the study speak volumes as to the inherent worth of the process and its effects on teachers' practices. An NBCT from Ritchie County summarized the

feelings of virtually every NBCT and many NB Candidates in the population when she stated: “I thought I was a good teacher before I started. As a result of the process I became so much better!”

2. Nearly every participant in the study availed himself or herself of some type of support program. In addition, participants perceived these various support programs as being crucial to their success. An NBCT from Kanawha County described the importance of her support class:

My support class kept me on the right track with what I was writing. It helped me to figure out what was important. Most helpful were the deadlines set by the class that broke the process into pieces that were due at a certain time. I would have been embarrassed to go to class with assigned work unfinished - so I got it done.

Obviously, if state and local districts want to encourage participation in the National Board certification process, then we owe it to candidates to continue to provide support systems of all kinds in order to give teachers their best chances for success. Continued legislative support for fee reimbursement and supplemental pay is vital as is continued support provided by districts, counties, colleges / universities, teachers' unions, RESA, and various cohorts and classes.

3. Based on comments gathered in qualitative data, the following aspects of support seem to be the most valuable for candidates attempting National Board certification: fee reimbursement, mentoring from

NBCTs, structured programs that provide deadlines for completion of major portfolio pieces, collegiality and interactions with other teachers going through the process, and help interpreting portfolio directions and guidelines.

4. Minority teachers were not identified in the study's population, and male teachers were underrepresented and certified at much lower rates than females, a fact that is also true nationwide (Goldhaber, 2003]. Particular effort should be made throughout the state to encourage more male and minority teachers to attempt National Board certification. Candidate support providers should pay particular attention to the needs of male and minority candidates, providing support of greater depth and substance if possible. Cohorts of male and/or minority candidates might possibly improve certification rates among those groups.
5. Findings in this study clearly show that more experienced teachers certify at significantly higher rates than less experienced teachers. NBPTS should closely examine certification rates of teachers with 3-5 years of experience and consider adjusting the experience eligibility requirement from a minimum of three years to a minimum of five years. NBCTs and support providers should keep this lower certification rate in mind when recruiting potential candidates, and candidates should be made aware of the role experience plays in certification.

Recommendations for Future Research

This study provided insight into the perceptions of National Board certified teachers and National Board candidates regarding the impact of participation in the process on their teaching practices. Recommendations for further research include:

1. Replication of this study in other states or nationwide would be beneficial for comparison purposes and would increase generalizability of data.
2. Combining administration of the *National Board Certification Process Survey* with pre/post visits by outside observers would provide greater understanding of the effects of the process on teachers' classroom practices.
3. Structured interviews with NBCTs and NB Candidates would allow future researchers to collect more in-depth information and gain greater insight into participants' thoughts about the process and its effects on their teaching practices.
4. Future research should focus on populations of male and/or minority teachers to investigate why those groups are underrepresented in the NBPTS applicant pool and why they certify at lower rates.

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APPENDICES

Appendix A: National Board Certification Process Survey

1. National Board Certification Process Survey

Your help is requested to gather important information about West Virginia teachers' experiences with the National Board of Professional Teaching Standards certification process. This survey asks for your thoughts and reflections about the process and should take approximately 15 minutes to complete. You may exit the survey at any time, but we encourage you to respond to all the items so we can get the full benefit of your thinking. Most survey items simply require you to click on a button, but many also provide space where you can explain your thinking or provide examples. For these answers, you may use whatever space you require. Please answer as completely and honestly as possible; more complete responses will help evaluators understand your experiences better. Results from this survey are completely confidential. Information gathered will be seen only by the researchers and will not be shared or used for any other purpose.

Thank you for taking part in this research. Please start the survey now by clicking "Next."

2.

1. Which of the following best describes your current status related to National Board certification process?

- I have received National Board certification.
- I attempted but did not receive National Board certification and I am currently an advanced (retake) candidate.
- I attempted but did not receive National Board certification and I am currently not an advanced (retake) candidate.
- I began the National Board certification process but stopped before completing all the steps.
- I have never participated in the National Board certification process.

2. To what extent did your participation in the National Board process have an effect on how you ...

	1 (Not at All)	2	3	4	5	6 (Greatly)
create a positive learning environment for students in your classroom?	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

Please explain your response or provide an example. Use as much space as you need.

3. To what extent did your participation in the National Board process have an effect on how you...

	1 (Not at All)	2	3	4	5	6 (Greatly)
plan effective instruction for your students?	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

Please explain your response or provide an example. Use as much space as you need.

4. To what extent did your participation in the National Board process have an effect on how you ...

	1 (Not at All)	2	3	4	5	6 (Greatly)
deliver effective instruction to all students?	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

Please explain your response or provide an example. Use as much space as you need.

5. To what extent did your participation in the National Board process have an effect on ...

	1 (Not at All)	2	3	4	5	6 (Greatly)
your knowledge of your subject-matter?	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

Please explain your response or provide an example. Use as much space as you need.

6. To what extent did your participation in the National Board process have an effect on how you ...

	1 (Not at All)	2	3	4	5	6 (Greatly)
assess student learning?	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

Please explain your response or provide an example. Use as much space as you need.

7. To what extent did your participation in the National Board process have an effect on ...

	1 (Not at All)	2	3	4	5	6 (Greatly)
your sense of belonging to a larger learning community?	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

Please explain your response or provide an example. Use as much space as you need.

8. In general, what did you like the most or find most beneficial about your participation in the National Board process?

9. In general, what did you like the least or find least beneficial about your participation in the National Board process?

**10. What were your reasons for attempting National Board certification?
(Mark all that apply)**

- Salary Increase
- Professional Growth
- Encouraged by Colleagues/Friends
- Encouraged by School/County Administrators
- Other

If "Other," please specify.

11. Did you participate in any type of informal or formal support program during your attempt at National Board certification? (Mark all that apply)

- Attempted with friends/colleagues
- County-provided support class or group
- RESA-provided support class or group
- College/university-provided support class
- Other
- Did not participate in a support class or group

If "Other," please specify.

12. If you participated in a support group of any type ...

	1 (Not at All)	2	3	4	5 (Greatly)
how important was the support you received?	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

Please explain or provide an example of how your support class or group was important or helpful.

13. In what year did you first attempt National Board certification?

Please choose year of your first certification attempt.

Year	<input type="text"/>
------	----------------------

14. What certificate area and grade level did you attempt?

Field of Certification

Please choose a field of certification.

15. What WV county were you employed in when you attempted or received National Board certification?

WV Counties

Please choose your employer.

16. How many years of teaching experience do you have?

- 3 - 5 years
- 6 - 10 years
- 11 - 15 years
- 16 - 20 years
- 21 - 25 years
- 26 - 30 years
- 31+

17. Which of these best describes your current employment status? Choose all that apply.

- Classroom teacher
- School level administrator
- County level administrator
- WV Dept of Education
- Higher Ed teacher/administrator
- No longer employed in education
- Retired
- Other

If "Other," please specify.

18. What is your gender?

- Male
- Female

19. Are you willing to be contacted for follow-up questions or clarification?

Yes

No

If Yes, please provide your preferred contact information (email or phone)

20. Is there anything else you would like us to know about your experience with the National Board certification process? Please add any additional thoughts or comments. Use as much space as you need.

3. Thank You

Thank you for your time. If you have questions or concerns regarding the survey, you may contact me at rsingleton335@suddenlink.net.

Appendix B: Panel of Experts

Panel of Experts

Mickey Blackwell, Ed.D.: principal, Horace Mann Middle School, Charleston, WV

Deborah Clark, Ed.D.: STEM Consultant, Hinton, WV

Diane Hayes, NBCT: teacher, Horace Mann Middle School, Charleston, WV

Sue Hollandsworth, Ed.D.: Marshall University Graduate College, South
Charleston, WV

Mike Howard, Ed.D.: educational consultant, president of Michael Howard and
Associates, Greensboro, NC

Leah Lewis, NBCT: teacher, Horace Mann Middle School, Charleston, WV

Cari Pauley, NBCT: teacher, Lincoln County High School, Hamlin, WV

Christine Schimmel, Ed.D.: Assistant Professor, Coordinator of School
Counseling Programs, West Virginia University, Morgantown, WV

Emily Waugh, Ed.D.: West Virginia State University, Institute, WV

The survey was also reviewed for errors, content, and validity by Dr. Ron
Childress's CI-676 Program Evaluation class, Marshall University Graduate
College, in February 2010.

Appendix C: Content Validity Questions

Content Validity Questions

To improve content validity, a panel of experts examined the *National Board Certification Process Survey* using the following criteria suggested by Dillman (2007):

1. Are instructions, questions, and answer choices easily understood and free from abbreviation or unconventional phrases?
2. Are questions vague or precise?
3. Are questions biased, objectionable, or too demanding?
4. Do questions contain double questions or double negatives?
5. Are answer choices mutually exclusive?
6. Has the researcher made reasonable assumptions regarding respondents' knowledge and behavior?
7. Are questions technically accurate?

Appendix D: Cover Letter (Email) with Survey

Dear West Virginia Teacher:

You have been selected to participate in a doctoral research study of teachers who have attempted National Board of Professional Teaching Standards certification. The purpose of this study is to compare the perceptions of teachers who have achieved National Board certification with those of teachers who attempted National Board certification but have not yet certified. Possible benefits of this study include: identifying aspects of the process that are most and least beneficial to candidates, gaining greater understanding of the process based on participants' perceptions, providing greater support to future candidates, and informing county/state officials and support providers of specific ways to improve rates of certification.

Your time is valuable and limited; therefore I appreciate your willingness to respond. The survey should take only 15-20 minutes to complete. Participation is voluntary and your responses are confidential. You may choose to withdraw from participation at any time by simply closing the link to the survey. Submission of your survey implies your consent to participate. Data will be securely stored and will be reported in aggregate form only with no identification of individual teachers or schools. However, should I need to contact non-respondents, the surveys are coded allowing me to contact you and remind you of the opportunity to participate.

Your responses are valuable and a critical component of my research. Your timely participation would be greatly appreciated. I ask only that you respond to the questions honestly and accurately so that a valid representation of your perceptions is presented. Please note that there is no penalty for declining to participate in this study. I am requesting that you complete the online survey by March 30, 2010. You can access the survey by clicking the following URL:

<http://www.surveymonkey.com/s/MMQV6N2>

If you find that the above link does not work, you may copy and paste it into your browser.

Please keep this letter for your records. If you have any questions regarding this study, I can be contacted at 304-346-9801 or rsingleton335@suddenlink.net. If you have any questions concerning your rights as a research subject, you may contact Dr. Stephen Cooper, IRB#2 – Behavioral and Social Sciences chair, at the Office of Research Integrity at Marshall University at 304-696-7320. Please accept my sincere appreciation in advance for your willingness and timely participation in this research study.

Appreciatively,

Ray Singleton, NBCT
Marshall University Graduate College
100 Angus E. Peyton Drive
South Charleston, WV 25303
Phone: 304-346-9801

Marshall University IRB
Approved on: 3/17/10
Expires on: 3/17/11
Study number: 161137

Appendix E: Email Reminder to Participants (Survey Due in One Week)

Date: March 22, 2010

Dear West Virginia Teacher,

Approximately one week ago, I wrote asking for your support and participation in a survey of teachers who have attempted National Board certification. This survey may help advance our understanding of the National Board certification process and its effects on teachers and their students. Unfortunately, as of today, I have not received your electronic survey.

Again, I appreciate that your time is limited and ask if you could take approximately 15-20 minutes or so to respond. Please click on the following URL to be taken to the survey:

<http://www.surveymonkey.com/s/MMQV6N2>

If you find that the above link does not work, you may copy and paste it into your browser.

Please respond by March 30, 2010.

Sincerely,

Ray Singleton, NBCT
Marshall University Graduate College
100 Angus E. Peyton Drive
South Charleston, WV 25303
Phone:

Appendix F: Email Reminder to Participants (Survey Due Today)

Date: March 29, 2010

Dear West Virginia Teacher:

Two weeks ago, I sent you an email regarding an opportunity for you to participate in a research study of teachers who have attempted National Board certification.

That survey is now due. Unfortunately, I have not received your electronic survey. I am very anxious to include your responses in my research so that a true understanding of the National Board certification process and its effects on participants can be gained.

Again, this survey should only take approximately 20 minutes.

Please click on the following URL to be taken to the survey:

<http://www.surveymonkey.com/s/MMQV6N2>

If you find that the above link does not work, you may copy and paste it into your browser.

Please respond by the end of today, March 30, 2010.

Sincerely,

Ray Singleton, NBCT
Marshall University Graduate College
100 Angus E. Peyton Drive
South Charleston, WV 25303
Phone:

Appendix G: Cover Letter (Hard Copy with Survey) to Participants

Date: April 1, 2010

Dear West Virginia Teacher:

A few weeks ago I emailed a request to participate in a doctoral research study of teachers who have attempted National Board certification. My records indicate that your survey has not been returned. If you have already completed the survey, please disregard this letter. If you have not completed the survey, please do so by completing the enclosed paper copy and returned it to me by April 8, 2010 in the enclosed postage paid envelope. Or, if you prefer, you may complete the survey by clicking on the following URL:

<http://www.surveymonkey.com/s/MMQV6N2>

If you find that the above link does not work, you may copy and paste it into your browser.

Your time is valuable and limited; therefore I appreciate your willingness to respond. The survey should take only 15-20 minutes to complete. Participation is voluntary and your responses are confidential. You may choose to withdraw from participation at any time by simply closing the link to the survey. Submission of your survey implies your consent to participate. Data will be securely stored and will be reported in aggregate form only with no identification of individual teachers or schools. However, should I need to contact non-respondents, the surveys are coded allowing me to contact you and remind you of the opportunity to participate.

Your responses are valuable and a critical component of my research. Your timely participation would be greatly appreciated. I ask only that you respond to the questions honestly and accurately so that a valid representation of your perceptions is presented. Please note that there is no penalty for declining to participate in this study

Please keep this letter for your records. If you have any questions regarding this study, I can be contacted at 304-346-9801. If you have any questions concerning your rights as a research subject, you may contact Dr. Stephen Cooper, IRB#2 – Behavioral and Social Sciences chair, at the Office of Research Integrity at Marshall University at 304-696-7320. Please accept my sincere appreciation in advance for your willingness and timely participation in this research study.

Appreciatively,

Ray Singleton, NBCT
Marshall University Graduate College
100 Angus E. Peyton Drive
South Charleston, WV 25303
Phone:

Appendix H: Marshall University Institutional Review Board Approval



www.marshall.edu

Office of Research Integrity
Institutional Review Board
401 11th St., Suite 1300
Huntington, WV 25701
FWA 00002704

IRB1 #00002205
IRB2 #00003206
March 17, 2010

Lisa Heaton, Ph.D.
Graduate School of Education and Professional Development, MUGC
RE: IRBNet ID# 161137-1
At: Marshall University Institutional Review Board #2 (Social/Behavioral)
Dear Dr. Heaton:

Protocol Title: [161137-1] The National Board Certification Process: A Comparison of the Perceptions of National Board Certified Teachers and National Board Candidates in West Virginia

Expiration Date: March 17, 2011
Site Location: MUGC
Type of Change: New Project APPROVED
Review Type: Exempt Review

In accordance with 45CFR46.101(b)(2), the above study and informed consent were granted Exempted approval today by the Marshall University Institutional Review Board #2 (Social/Behavioral) Vice Chair for the period of 12 months. The approval will expire March 17, 2011. A continuing review request for this study must be submitted no later than 30 days prior to the expiration date.

This study is for student Ray Singleton.

If you have any questions, please contact the Marshall University Institutional Review Board #2 (Social/ Behavioral) Coordinator Bruce Day, CIP at (304) 696-4303 or <mailto:day50@marshall.edu>. Please include your study title and reference number in all correspondence with this office.

CURRICULUM VITAE

Ray Singleton

• Charleston, WV 25302
Phone: 304.346.9801 • E-Mail: rsingleton335@suddenlink.net

EDUCATION

- B.A. University of Charleston, Charleston, WV, 1979
M.A. West Virginia College of Graduate Studies, South Charleston, WV, 1997
Ed.D Marshall University Graduate College, South Charleston, WV, 2010

EXPERIENCE

- Teacher: Kanawha County Schools, 200 Elizabeth Street, Charleston, WV 25302 1987 - Present
- Adjunct Instructor: Marshall University Graduate College, 100 Angus E. Peyton Drive, South Charleston, WV 25303 1997 - Present
- Adjunct Instructor: University of Charleston, 2300 MacCorkle Avenue, SE, Charleston, WV 25304 2002 - 2006
- Teacher: Boone County Schools, 69 Avenue B, Madison, WV 25130 1984 - 1987

PUBLICATIONS/PRESENTATIONS

- *Bloggng With Students*: Central West Virginia Writing Project, Marshall University Graduate College, South Charleston, WV 2008, 2007, 2006
- *Technology Use and Professional Growth through the Residency Portfolio*: 18th Annual SITE Conference, San Antonio, TX 2007
- *Class Chatter: Bloggng in the Classroom*: West Virginia State Technology Conference, Charleston, West Virginia 2007
- *Students Using Technology: Stories From the Classroom*: ETL Conference, Roanoke, VA (co-presented with Dr. Lisa Heaton and Dr. Teresa Eagle) 2007
- *Web 2.0: 21st Century Technology in Education*: Marshall University Graduate College Doctoral Seminar, South 2007

- Charleston, WV (co-presented with Missy Spivy, Debra Young, and Dr. Lisa Heaton)
- *Technology Integration in English Language Arts: 18th Annual SITE Conference*, San Antonio, TX (co-presented/authored with Dr. Lisa Heaton) 2007
 - *Blogging in the Classroom*: Spencer Middle School, Spencer, WV 2007
 - *Doctoral Resource CD*: Marshall University Graduate College Doctoral Seminar, South Charleston, West Virginia (co-presented with Ernie Adkins) 2006
 - *Blogging in the Classroom*: Roane County Technology Academy, Spencer, WV 2006

COURSE DESIGN

- *CIEC 563: Teaching in the 21st Century with Web 2.0 Tools*: (co-designed with Missy Spivy, Debra Young, and Dr. Lisa Heaton) 2008

TEACHING CERTIFICATIONS

- National Board of Professional Teaching Standards: Early Adolescent / English Language Arts 2003
- WV - Instrumental Music K-12 Permanent
- WV - Elementary Education 1-6 Permanent
- WV - Social Studies 7-9 Permanent
- WV - Reading K-12 Permanent
- WV - Middle School Endorsement Permanent

AWARDS AND RECOGNITIONS

- *Arch Coal Teacher Achievement Award*, Arch Coal Foundation 2009
- *Arch Coal Golden Apple Award*, Arch Coal Foundation 2008
- Classroom visit by Senator Jay Rockefeller, Horace Mann Middle School, Charleston, WV 2007

COURSES TAUGHT

- *CIRG 644 Literacy in the Content Area* Marshall University
- *CIRG 643 Practicum: Diagnosis and Correction of Reading Difficulties* Graduate College
1997 - Present

- *CIRG 642 Special Needs in Reading*
- *CIRG 637 Diagnosis and Correction of Reading Difficulties*
- *CIRG 622 Literacy Technology*
- *CIRG 621 Current Issues and Problems in Reading*
- *CI 591 National Board Portfolio I*
- *CI 592 National Board Portfolio II*
- *Remedial Reading Workshop*

University of Charleston
2002 - 2006