ABSTRACT

Title of Dissertation: A STUDY OF THE PERCEIVED TEACHING SELF-EFFICACY AND LEADERSHIP OF NATIONAL BOARD CERTIFIED TEACHERS

April A Zentmeyer, Doctor of Education, 2014

Dissertation directed by Professor Dennis Kivlighan

The purpose of this study was to examine the perceived levels of teacher self-efficacy and leadership of National Board Certified Teachers (NBCTs). One of the goals of *Race to the Top* is to provide highly qualified, efficacious teachers in every classroom, prepared to lead in the 21st century. Given that National Board Certification is one avenue to highly qualified status, this study sought to discover whether NBCTs perceived high levels of teacher self-efficacy and assumed leadership roles at a higher rate than a matched sample of non-NBCTs. This quantitative, non-experimental approach compared the perceived levels of teacher self-efficacy in the domains of instruction, engagement, management, and leadership of NBCTs to a matched sample of non-NBCTs in one district in the state of Maryland. The *Teacher Sense of Efficacy Scale – SF* (*TSES*), a 12-item Likert-like scale, used with permission by Dr. Anita Woolfolk-Hoy measured teacher efficacy in the three domains. A question regarding compensated leadership roles was added to the *TSES*. Results derived using SPPS generated a T-test to examine the subset correlations and tabulate compensated leadership roles. The T-test failed to reveal a statistically reliable difference between the mean scores of the NBCTs and a matched sample of non-NBCTs. Both groups scored high on the *TSES* and assumed leadership roles in the district. The non-significant results do not discount National Board Certification as a vehicle to identify highly qualified, self-efficacious teachers prepared to lead in the 21st century.

A STUDY OF THE PERCEIVED TEACHING SELF-EFFICACY AND LEADERSHIP OF NATIONAL BOARD CERTIFIED TEACHERS

by

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DEDICATION

This study is dedicated to the passionate and tirelessly dedicated teachers who selflessly preserve our greatest natural resource – our students! Each day as they arrive prepared to promote lifelong learning and strive to provide a world-class education to even the most reluctant of learners, they enrich us all with their investment in the lives of our future generation. They are appreciated for always going the extra mile to devoting themselves to the most challenging profession on the planet and inspiring me to lead.

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CHAPTER I

Introduction

Since President Reagan's 1983 National Commission on Excellence in Education report, *A Nation at Risk: The Imperative for Educational Reform,* the quality of public education continues to be closely scrutinized. Two years after the publication of the report, the establishment of a national teacher standards and evaluation board evolved when Albert Shanker, President of the American Federation of Teachers, outlined his vision for this group. "would spend a period of time studying exactly what a teacher should know before becoming certified and the best way to measure that knowledge" Shanker hoped "the board would eventually be controlled by the profession itself (Herrelko, 2010)." Shanker's vision provided fertile ground for the creation of the National Board of Professional Teaching Standards (NBPTS), a group that eventually defined what *good teachers should know and be able to do* and created a national accountability for public school teachers within the profession, regardless of state affiliation (DeLeon, 2003).

In 1986, the Carnegie Forum report, *A Nation Prepared: Teachers for the 21st Century*, formally recommended the establishment of a National Board for Professional Teaching Standards (NBPTS) which was created the following year with the goal to "define what teachers should know and be able to do." Their goal was to improve the quality of classroom instruction by providing a national forum to assess teachers and student learning (Phillips, 2009). Funded by the Carnegie Corporation of New York and chaired by former North Carolina Governor James Hunt, Jr., the NBPTS provided a voluntary advanced certification for highly qualified teachers, who could create positive learning environments with established classroom rules and procedures to maximize time on task and minimize time for routine procedures. This allowed teachers more time to instruct, monitor, coach, and provide quality feedback to provide quality

feedback to students (Phillips, 2009). They could then also promote continuous instructional improvement and student learning through collaboration and a shared vision with peers and all other stakeholders (Phillips, 2009).

The NBPTS established certification in 25 disciplines, providing a means for teachers to demonstrate excellence in instruction delineated in the Five Core Propositions, including: commitment to students and their learning, content and strategies to convey subjects, responsibility for managing and monitoring learning, systematic reflection on practice to foster improvement, and membership in professional learning communities (NBPTS, 2002).

The mission of the NBPTS has remained to professionalize teaching in the United States by recognizing accomplished teaching practices through an advanced certificate entitled *National Board Certified Teacher* and to promote student achievement by establishing the definitive standards and systems for certifying accomplished educators, providing programs, and advocating policies that support excellence in teaching and leading (Carnegie Task Force on Teaching as a Profession, 1986; National Board of Professional Teaching Standards, 2012). National Board Certification (NBC) was developed by teachers for teachers with teachers' involvement in each step of the process including writing standards, designing assessments, and evaluating candidates.

The 1-3 year certification process documents through intensive study, self-reflection, evaluation, and peer review a consistent vision of what teacher quality looks like. According to the National Board of Professional Teaching Standards website, all 50 states and the District of Columbia offer assistance to teachers who pursue certification and most offer stipends and salary bonuses (Advancing the profession, 2012).

The NBPTS establishes high standards for what teachers need to know and be able to do, certifies teachers who meet that standard, and restructures schools to provide professional teaching environments that are both accountable for student progress and meets state standards. This process now includes employing *Lead Teachers* responsible for leading and mentoring colleagues to uphold high standards for teaching and learning. Additional goals of the NBPTS are to require a Bachelor's degree for all teachers and to develop a professional curriculum with internships for graduate schools of education offering a Masters in Teaching degree based on systematic knowledge of teaching. Further, the NBPTS' goals include: mobilizing the nation's resources to prepare minority students for teaching careers, relating teacher incentives to school-wide student performance, assuring salaries and career opportunities for teachers that are competitive with those in other professions, and providing schools with the technology, services, and staff essential to teacher productivity (2012 Guide to National Board Certification, 2012).

In connection with the NBPTS's mission, *No Child Left Behind* (NCLB) mandated an era educational reform calling for continuous school improvement with highly qualified teachers, accountable for improving student test scores, at the center of this initiative (Education, 2011). In his case for professional learning communities (PLCs), Schmoker (2009) defers to Judith Little who claims that "School improvement is most surely and thoroughly achieved when teachers engage in frequent, continuous and increasingly concrete and precise talk about teaching practice... adequate to the complexities of teaching, capable of distinguishing one's practice and its virtues from another." According to Schmoker, improvement evolves when teachers rigorously *plan, design, research, evaluate, and prepare materials together*. The resulting professional communities formed are able to brainstorm problems to generate high-quality solutions, increase self-efficacy and collective-efficacy, increase ability to support one another's

strengths and accommodate for weaknesses, provide assistance to novice teachers, and cogently examine the pool of ideas, methods, and materials (Schmoker, 2009). National Board Certification is one means to certify quality educators who understand the demands of teaching and learning, continually reflect and assess their practice to employ strategies to improve and enhance student achievement, and support professional learning communities (Marzanno, 2003; Parsons & Brown, 2002; Wiggins, 2005).

While teacher effectiveness remains difficult to measure and evaluate, current trends attempt to address the challenge to make it quantifiable with domains and rubrics that score teachers, including National Board Certification (Gordon, Kane, & Staiger, 2006; Danielson, 2007). Still, educational trends and initiatives have had little success in creating clear and measurable goals to support an accurate analysis of student achievement data, fostering concerns regarding content and methods (Bebell, O'Dwyer, Russell, & Hoffman, 2010). The National Board of Professional Teaching Standards Certification's Five Core Propositions claims to accomplish the goal of NCLB, establishing standards-based educational goals through measurable outcomes (Guskey T. R., 2002). National Board Certification automatically provides Maryland teachers with the required 100 points needed for meeting highly qualified status (MSDE, 2005).

One of President Obama's Race to the Top goals is to provide *highly qualified, efficacious teachers in every classroom, prepared to lead in the 21st century*. School systems, answering President Obama's challenge to all stakeholders, entered *The Race* to set, meet, and enforce rigorous and challenging standards, provide quality instruction delivered by outstanding teachers to turn around failing schools, prepare students to *outcompete* in the global marketplace

while *fulfilling their God-given potential,* and demonstrate learning through thoughtful assessments (Obama, 2009).

In response to this rally, US Secretary of Education, Arne Duncan, launched *Race to the Top* (RTTT) pitting states in an initial competition for $4.35 billion dollars of federal grant monies (Holland, 2010). In order to compete, school systems needed to be completely overhauled to comply with performance benchmarks required to apply for the grant, including local system's project goals, timetables, and budgets (Holland, 2010). While the intent was to advance the underserved student through Title I School Improvement Grants and State Education Technology Grants designed to reform and advance struggling schools, the United States educational system transformed itself in the frenzy to compete for *Race To The Top* grant monies (Hamilton, 2009). The state in this study was initially awarded $250 million and was one of the 13 jurisdictions to win grant monies (Holland, 2010).

The revision of ESEA, *The Blueprint for Reform,* released by the US Department of Education in 2010, focused on goals that were modeled on business turnaround strategies. ESEA called for improvement of teacher and principal effectiveness, informed stakeholders instrumental in school improvement and evaluation, an emphasis on career and college readiness, and an implementation of effective strategies to maximize student learning, especially in lower-performing schools (Duncan, 2010). It caused both public and charter schools to increase competition for funding (National Coalition on School Diverstiy, 2010). Each wave of reform encourages improvement of teacher quality which according to Marzanno (2009) is the single most important factor in a child's education. Yet, despite the body of research regarding teacher effectiveness, its link to student achievement, and the need to advance highly qualified teachers for every student, effective teaching remained an elusive construct to define and measure

(Campbell, West, & Peterson, 2005; Cochran-Smith, 2005; Cruickshand, Jenkins, & Metcalf, 2003; Darling-Hammond & Young, 2002; Ding & Sherman, 2006; Goe, Bell, & Little, 2008; Goldhaber & Anthony, 2005; Marzanno R. J., 2009; Palady & Rumberger, 2008; Poole, Shiavone, & Carey-Lewis, 2001; Rothstein, 2010).

Teacher effectiveness relies on instructional practices and teacher characteristics including cognitive ability, content knowledge, pedagogy, and personality traits (Goe, Bell, & Little, 2008; Kane, Rockoff, & Staiger, 2008). Research reports a positive impact on student achievement when students are instructed by highly qualified and efficacious teachers (Kane, Rockoff, & Staiger, 2008; Rothstein, 2010). The question remains how to validate this effectiveness. In response, national standards have been identified and set with the creation of the Common Core for State Standards and their accompanying national student examinations for testing students and informing quality classroom instruction through the efforts of Smarter Balanced Assessment Consortia (SBAC) and the Partnership for Assessment of Readiness for College and Careers (PARCC). It is an ideal time to also examine a national certification for teachers. Since President Obama's goal of Race to the Top is to provide *highly qualified, efficacious teachers in every classroom, prepared to lead in the 21st century* raises the question of whether or not National Board Certification is an effective vehicle for this challenge.

Five Core Propositions of NBPTS

According to the *2012 Guidebook for the National Board of Professional Teaching Standards*, Five Core Propositions form the framework of knowledge, skills, dispositions, and beliefs that characterize National Board Certified Teachers (NBCTs*):*

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.

By definition, National Board Teachers are charged to be committed to students and learning. They must make knowledge accessible to all students and believe that all students can and will learn. They are expected to develop a knowledge of students that allows for differentiation of instruction to assure equity. National Board teachers should understand how students develop and learn. They have a duty to respect students' cultural differences and promote students' self-concept, motivation, and the development of character and civic responsibility (National Board of Professional Teaching Standards, 2002).

National Board Teachers are to know their content and how to use diverse strategies to convey the subjects to students through real world applications. They must be responsible managers and monitors of student learning, moving fluently through a range of instructional techniques to deliver effective instruction. Their students ought to be engaged, motivated, focused, and thriving in a disciplined, goal-oriented learning environment. Progress must be appropriately measured through multiple methods that can be conveyed to both students and parents (National Board of Professional Teaching Standards, 2002).

Finally, the Core Propositions of the National Board of Professional Teaching Standards (NBPTS) require National Board Certified Teachers (NBCTs) to systematically reflect on their practice to learn from experience. They are obligated to be models of life-long learning based and promote innovative instructional strategies fostering deep knowledge and best practices. As active members of learning communities, serving as community partners and collaborative

professionals, NBCTs must pursue opportunities to advance curriculum revisions and promote staff development. National Board teachers should engage all stake holders productively in the work of the school (NBPTS, 2012).

The effectiveness of National Board Certification (NBC) in raising the quality of teaching, teacher retention, improved professional development, school improvement, and student learning has been the subject of much research. While several studies argue that students, especially minority students, of National Board Certified Teachers (NBCTs) perform better on standardized tests than their peers (National Research Council, 2008; Glotfelter, 2007; Goldhaber, 2004; Cavalluzzo, 2004; Vandevoort, 2004), other studies counter that no significant difference exists between NBCTs and their non-certified counterparts in the classroom (Sanders, 2005). Two additional studies provide evidence that NBCTs raise the quality of teaching through *deep learning* (Bond, 2000; Smith, 2005). Additional studies also show that NBCTs consistently demonstrate an in-depth knowledge of teaching skills and knowledge in content areas and seek to use strategies that develop higher order thinking skills in their students, applying what they learn from the certification process to design creative lessons for their students (Bond, 2000; Dagenhart, 2002; Lustick, 2006; Ralph, 2003).

According to the United States Census Bureau's 2000 census, the United States employs 6.2 million teachers. Only 2% or about 91,000 are NBCTs. Do these NBCTs continue to incorporate the Five Core Proponents into their practices? Do they assume leadership roles, including the *lead teacher* positions prescribed by the NBPTS's goals, in a complex, data-driven, results-oriented, educational landscape of the 21st century to promote continuous improvement?

Katzenmeyer and Moller (1996), Sergiovanni (2002), and Marzanno (2009) linked teacher leadership to teaching efficacy. These studies concludes that professional learning

communities not only promote teacher efficacy, but impacts student achievement. Katzenmeyer and Moller also found that NBCTs' contributions included promoting educational reform that led peers to routinely reflect on practice, creating a culture of greater accountability. They isolated measurable characteristics in schools that foster teacher leadership, include collaboration, and rely on open and honest communication to refine what makes a positive school environment for learning (Katzenmeyer & Moller, 1996). NBCTs participation and leadership in professional learning communities was found as a means to refine a shared vision, essential to a positive school culture (Sergiovanni, 2002). The question then becomes whether or not NBCTs demonstrate a stronger sense of perceived teacher self-efficacy than non-NBCTs

Teaching Efficacy

The concept of self-efficacy and subsequently teacher-efficacy was pioneered by Albert Bandura. Bandura characterized self-efficacy as the *extent to which individuals believe they can organize and execute actions necessary to bring about a desired outcome* (Bandura, 1993). In 1984, Patricia Ashton expanded the concept of self-efficacy to include *the extent to which teachers feel confident that they are capable of bringing about learning outcomes* (Silverman & Davis, 2012). She identified two dimensions of teaching efficacy. These included the extent to which a teacher believes one's students can learn and the extent to which a teacher believes learning is the result of one's instruction (Ashton & Webb, 1986). Sodak and Podell consequently built on this work to further refine dimensions of teacher efficacy consistent with Bandura's original work to explore both academic and behavioral situations (Sodak, 1996). Gibson and Dembo (1998) further refined the scale to measure teacher efficacy supporting the work of Tschannen-Moren and Woolfolk-Hoy's development of the *Teacher's Sense of Efficacy Scale* (*TSES*).

Researchers have consistently found a positive relationship between high teacher efficacy, teacher performance, and job satisfaction, rooted in a teacher's belief that he or she can make the difference in classrooms and promote student achievement (Hoy & Woolfolk, 1993; Viel-Ruma, Houchins, Jollivet, & Benson, 2010; Ware & Kitsantasa, 2011). *When a peer or an expert, who is faced with an obstacle, setback, or failure, is confident in his or her efforts and capabilities, that person tends to redouble efforts to master the challenge rather than abort the effort* (Hoy & Woolfolk, 1993). Tschannen-Moren and Woolfolk Hoy's subsequent instruments, including the *Teacher's Sense of Efficacy Scale* (*TSES*), allow for a measure of a teacher's sense of teaching efficacy (Tschannen-Moren & Woolfolk Hoy, 2001). Research suggests that teachers with high teacher self-efficacy tend to set higher goals for themselves and for their students (Ross, 1995). The need for such a measure is obvious in light of President Obama's goal to provide *efficacious teachers* in every classroom. The one way of perhaps knowing which teachers will be able to meet the challenges of becoming a 21st century teacher leaders

Teacher self-efficacy is defined as a teacher's belief that he or she can make a positive impact on student learning and has been linked to student achievement and affective growth (Smith, 1996). An examination of the underlying conditions which promote student achievement includes teacher efficacy, one of the myriad factors being investigated, but the one that most consistently relates to teaching and learning (Woolfolk, 1990). Teacher efficacy has also consistently been found to predict the success of program implementation (Berman, McLaughlin, Bass, Pauly, & Zellman, 1977) and to affect instructional decisions including use of time, questioning techniques, and classroom management strategies (Woolfolk, 1990). The question then becomes, do NBCTs demonstrate a stronger sense of perceived teacher efficacy.

Teacher Leadership

Teacher leadership, formerly representative in nature relying on principals to make all educational decisions for schools, has been redefined to include teachers as school-wide change agents in the best position to make critical decisions regarding curriculum, instruction, and professional development (Livingston, 1992). Classroom teachers who assume leadership positions have the greatest influence on peers to promote change at the classroom level which directly supports student learning (Coyle, 1997). Empowering teachers to create change at this level increases student achievement (Furtell, 2000). NBCTs must demonstrate effective membership in learning communities to achieve certification, especially as *lead teachers*, a goal of the NBPTS (2012 Guide to National Board Certification, 2012). Teacher leadership and teacher self-efficacy is promoted through professional learning communities (Katzenmeyer & Moller, 1996). Teacher leaders report a significant decrease in isolation when opportunities to collaborate are available, an empowerment that increases teaching efficacy and student achievement (Cavalluzzo, 2004; Furtell, 2000; Wasley, 1989).

Statement of the Problem

Secretary of Education, Arne Duncan, introduced the *Recognizing Educational Success, Professional Excellence and Collaborative Teaching* (RESPECT) initiative in his December 2012 webinar. He called for the need "to change society's views of teaching from the factory model of yesterday to the professional model of tomorrow, where teachers are revered as thinkers, leaders and nation-builders." He concluded, "No other profession carries a greater burden for securing our economic future." The program echoes the intent of the National Research Council of the National Academies' comprehensive report examining advanced-level

certification programs that deem teachers *highly qualified* to teach. It further sets the criteria for districts to meet the *Race to the Top* goals (Duncan 2012). The National Board of Professional Teaching Standards is one identified avenue to reach *highly qualified* status. Candidates involved in the intensive preparation of portfolio and assessment invest $2,400 in the application alone.

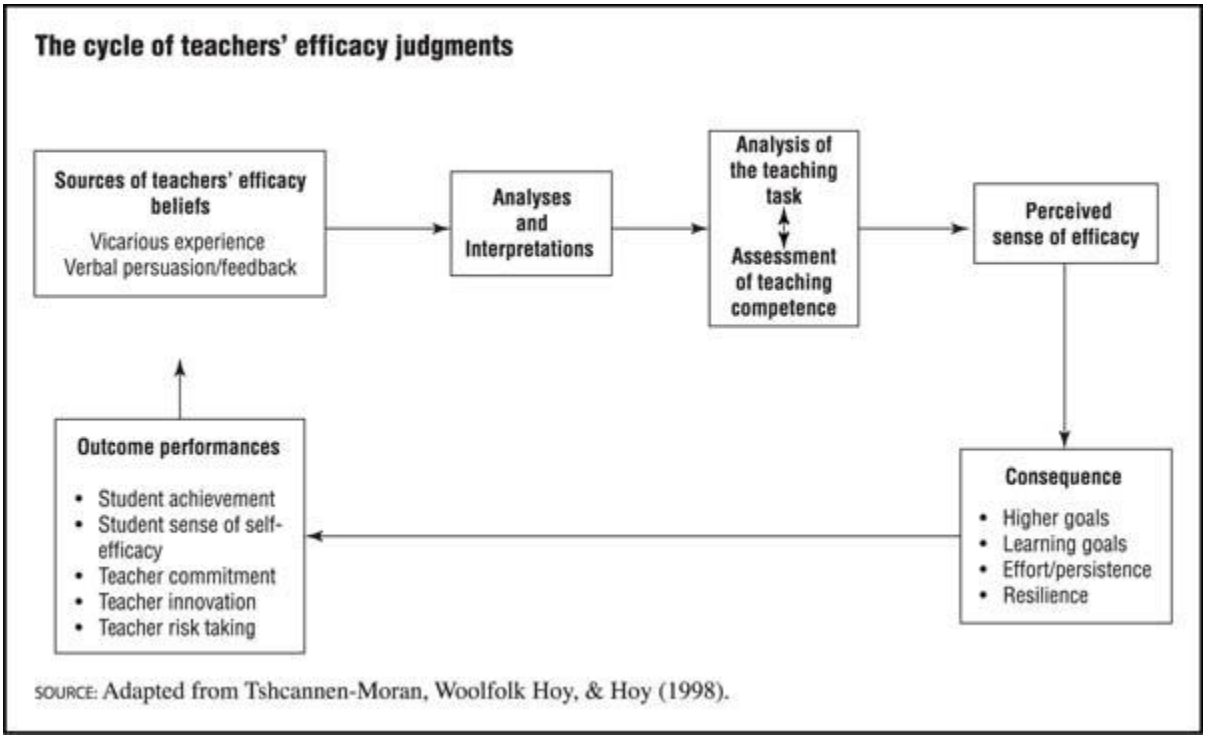
In the district studied, teachers are interviewed and the top candidates are awarded scholarships to subsidize the application for certification, three days of professional growth released time, technical support, and a $1,500 stipend each year that is matched with state grants for the 10 years of the certification. As a result, NBCTs are compensated at least $30,000 more than their non-certified counterparts over a 10 year period of certification.

Highly qualified teachers delivering effective instruction is mandated and dependent upon a certification process to determine *highly qualified* status. In 2008, the National Research Council of the National Academies released a comprehensive report that examined advanced-level certification programs with its primary emphasis on the NBPTS Certification. The council, formed in response to legislation passed by the United States Congress, was charged to develop a framework for evaluating programs that offer advanced-level certification to teachers and to apply that framework in an evaluation of the impacts of the NBPTS (National Research Council, 2008). Currently NBPTS Certification is one avenue to highly qualified status. Again the question is provoked whether or not National Board Certification provides a valid resource to identify highly qualified teachers who are self-efficacious and assume leadership in the district studied?

Statement of Purpose

Tshcannen-Moran and colleagues (1998) developed the *TSES* "to identify the ways in which efficacy judgments result as a function of the interaction between teachers' analysis of teaching task in context and their personal teaching capabilities as they relate to the task" (see Figure 1). This supports the major changes for teacher evaluation instituted in 2013. In addition, Bandura identified four specific sources of efficacy beliefs: mastery experiences, vicarious experiences, verbal persuasion, and arousal. Mastery experiences are direct encounters with success through engagement in a behavior that brings about a desired outcome. A high sense of teacher self-efficacy results in student achievement through teacher commitment, innovation, and risk taking when the bar is set higher and effort and resilience is necessary to succeed (Tschannen-Moren & Woolfolk Hoy, 2001).

Figure 1



SOURCE: Adapted from Tshcannen-Moran, Woolfolk Hoy, & Hoy (1998).

The purpose of this study is to examine the perceived levels of teacher self-efficacy and leadership of National Board Certified Teachers (NBCTs) in one district.

Research Questions

Do National Board Certified Teachers demonstrate higher levels of perceived teacher self-efficacy when compared to a matched sample of non-NBCTs in the domains of student learning and engagement, instructional strategies, and classroom management and monitoring of learning?

Do National Board Certified Teachers assume leadership in their school or district at a higher percentage than a matched sample of non-NBCTs of the district?

Significance of the Study

In 2009, U.S. Secretary of Education Arne Duncan made the following statement: "Think about if every school in the city, every school in the state, had not one or two, but six, seven, eight, nine, or ten National Board Certified Teachers. I think the culture in those buildings would fundamentally change." Strong bipartisan Congressional financial support for growing the number of National Board Certified Teachers across the country was increased in 2010, to $10.6 million. However, despite heavy lobbying, the President's FY 2012 budget eliminated funding for the NBPTS. Cutting federal funding eliminated the federal financial support that a majority of teachers receive to pursue this rigorous certification process (Claire, 2012).

However, President Obama's budget request for FY 2013 included an increase of 2.5% in discretionary spending for the U.S. Department of Education, to support new competitive grants programs which would include a new program funded via Title II, currently used to support class size reduction and professional development. Under the administration's proposal, $600 million would be allocated to *a host of teacher-quality issues, including expanding the number of science, technology, engineering, and mathematics teachers, and bolstering teacher preparation.*

The program would be open to a variety of organizations including the National Board of Professional Teaching Standards (Claire, 2012). Eligibility, similar to RTTT grants, allows national nonprofit organizations to apply and cite research evidence of their effectiveness (Sawchuk, 2012). This study proposes to examine the NBPTS's certification process as one vehicle of identifying highly efficacious teachers who pursue leadership roles.

Most states and more than 700 school districts recognize and reward teachers for achieving National Board Certification, and approximately fifty percent of these teachers are serving in the nation's highest-need schools, including 13,250 math and science teachers**.** The National Research Council reported that National Board Certification had a positive impact on student test scores (2008). US Secretary of Education, Arne Duncan's recent *Recognizing Educational Success, Professional Excellence and Collaborative Teaching* (RESPECT) proposal's goal is to tighten tenure rules, increase salaries, and improve professional development and follows the general format of RTTT, allowing states to design their means of teacher improvement. The intent is to address the needs of veteran teachers while making the teaching profession attractive to a new generation of teachers (Sawchuk, 2012). National Board Certification is approved for this funding.

Even though the NBPTS is an independent, nonprofit, and nongovernmental group (NBPTS, 2008), the United States Department of Education and most state departments of education support NBPTS' certification process by providing monetary subsidies for successful National Board candidates through annual stipends paid to NBCTs for the duration of the ten-year certificate (Maryland State Department of Education, 2009).

In the district studied, changes in policy for the 2013-14 academic year have reduced support to NBCTs from $2,000 annually for the ten year certificate to $1,500 unless the NBCT is employed in an identified high-needs school.

Definitions of Key Terms

Key terms, seminal to this study encompass the following:

National Board for Professional Teaching Standards (NBPTS): A board made up of a regional and state membership structure that establishes standards for what master teachers should know and be able to do through student results regarding academic achievement, career readiness, and personal responsibility;

National Board Certified Teacher (NBCT): A teacher who meets high and rigorous standards established by the NBPTS through rigorous independent study, self-reflection and assessment, and evaluation by the NBPTS;

National Board Certification (NBC): a certificate issued to signify a teacher has met the requirements of the NBPTS and is a NBCT;

Common Core of State Standards (CCSS): a research and evidence-based, internationally benchmarked, set of shared educational standards of goals and expectations of what students should understand and be able to do in grades K-12 in order to be successfully career and college-ready.

Teacher self-efficacy: a teacher's confidence in their ability to increase students' academic achievement, career readiness, and personal responsibility through effective instruction and evaluation.

Teacher Sense of Efficacy Scale (TSES): a widely used Likert-like instrument developed by Tschannen-Moren and Woolfolk Hoy's that measures a teacher's sense of teaching self-efficacy, providing a means to capture and measure the perceived efficacy in the areas of student engagement, classroom management, and instructional strategies

CHAPTER II
Literature Review

The demand for teacher accountability and certified quality garnered through collective collaboration gained momentum when Lieberman and others argued for a "radical rethinking" of professional development that more fully involved teachers as learners who solved instructional problems by working in teams (Darling-Hammond & McLaughlin, Policies that support professional development in an era of reform, 1995). Senge (2000) also called for the increased teacher accountability on measures of success that emerged to demonstrate learner success to taxpayers, paralleling the business sector by providing data to qualify teachers' contributions to student achievement. He voiced the need for *systems thinking* in organizations *where people continually expand their capacity to create the results they truly desire, where new and expansive patterns of thinking are nurtured, where collective aspiration is set free, and where people are continually learning to see the whole together* (Senge, Cambron-McCabe, & Lucas, 2000). Senge provided a framework in education for viewing educators' interrelationships rather than a confederacy of loose isolationists (Zmuda, Kuklis, & Kline, 2004). The significance of teacher collaboration and job embedded professional development that led to opportunities for reflection was a catalyst for the professional learning community reform (Sparks & Hirsch, 1997). The professional communities that form around the NBPTS Certification process are often venues for professional learning (National Board of Professional Teaching Standards, 2002). National Board Standards are a valuable resource for teachers who become *more reflective practitioners,* advancing student learning through teacher knowledge and skills (Lustick & Sykes, 2006). In a qualitative analyses of candidate interviews from this study, 40 percent of study participants display *dynamic learning*, immediately incorporating instruction strategies learned from the reflective process of certification.

With this intent, the National Board of Professional Teaching Standards (NBPTS) created *by teachers for teachers* in 1987, evolved from the need for knowledgeable, highly-qualified teachers who examine their practice in light of standards that delineate what a teacher *should know and be able to do* (NBPTS, 2012). In 2001, when the Elementary and Secondary Education Act (ESEA) was reauthorized in President Bush's *No Child Left Behind* (NCLB) initiative. It established a qualification requirement to hire and retain *highly qualified* teachers (Bush, 2001) which continues to be a goal of the Obama Administration's *Race To The Top* (RTTT). There are several routes to highly-qualified status, but over 240,000 of America's three million teachers have chosen National Board Certification (2012 Guide to National Board Certification, 2012). National Board Certification is a voluntary documentation of a teacher's practice through an in-depth analysis of one's instructional delivery and the documentation of the resulting changes in practices provoked by that reflection. The strategic priority of the NBPTS is to establish professionalism that advances student achievement by building educator effectiveness and promoting quality teaching (2012 Guide to National Board Certification, 2012). However, as the number of candidates increases, so does the demand for hard statistics regarding the merit of certification as a professional development tool (Bond, Smith, Baker, & Hattie, 2000).

This vision for certifying highly qualified teachers to support classroom and school improvement is further fleshed out in Charlotte Danielson's *Framework for Teaching* (Danielson, 2007). While the *Framework* establishes common language to simplify the growing use of complex terminology and the importance of reflection in a teacher's practice. It also echoes the components of the Five Core Propositions of the NBPTS and the portfolio piece used to document teacher accomplishments (Oner & Adadan, 2011). Reflection on one's practice is grounded in Dewey's advice that *one fails to learn without reflecting on what one has done*, as

well as in current research that affirms that self-evaluation and conducting action research opens new pathways for inquiry (Ashton & Webb, 1986). The reflective process, independent in nature, is fostered through the development of a portfolio and video analysis to document teaching accomplishments that forms the backbone of the National Board Certification process (National Board of Professional Teaching Standards , 2002).

What constitutes the effective teaching of a highly qualified teacher is elusive in nature and challenging to measure (Poole, Shiavone, & Carey-Lewis, 2001). In a quantitative study designed to measure the validity of both National Board Certification and the Performance Assessment of California Teachers (PACT) variance existed that questioned the validity of predicting the quality of teachers and learning. The study concluded that neither certification effectively validates teaching abilities, though professional growth provided by both processes was a key motivator in participation (Poole, Shiavone, & Carey-Lewis, 2001).

Effective professional learning experiences should be both school-based and a collaborative experience (Elmore, 2009). The NBPTS' Fourth Core Proposition states, *Teachers must be able to think systematically about their practice and learn from experience. They must be able to critically examine their practice, seek the advice of others, and draw on educational research to deepen knowledge, sharpen their judgment, and adapt their teaching to new findings and ideas* (2012 Guide to National Board Certification, 2012). To demonstrate this proficiency, the candidate self-analyzes both small group and large group video lessons, demonstrating through a written explanation documentation of accomplishments that describe work with families, communities, and colleagues (2012 Guide to National Board Certification, 2012). Additionally, student samples are chosen for an in-depth reflection to also document effective instructional practices. The final assessment requires completion of written explanations that

measure the candidate's content knowledge and how instructional delivery communicates that content to students (NBPTS, 2013).

The portfolio provides candidates the opportunity to reflect on practice, a piece that many candidates claim is the most significant part of the process of documenting the *Five Core Propositions* (O'Kane, 2013; Pennington, 2006; Kraft, 2002). Dewey, an early proponent of teacher development and the ensuing student learning, considered various modes of thinking including reflection as germane to quality instruction (Dewey, 1933). Dewey would argue that *reflection is a systematic and disciplined way of extracting data t*o document intellectual growth rooted in scientific inquiry (Rodgers, 2002). When teachers employ data as a component of reflection, improvement is more likely to result from the *deep thinking and understanding of one's practice* and more apt to sustain change in one's practice (Kraft, 2002). Research on the effects of NBCTs on *deep learning and understanding* as measured by students' understanding of complex classroom concepts and content, as well as, sophisticated writing skills is supported in one study which indicates that NBCTs' classroom practices are designed to elicit this *deeper* learning (Bond, Smith, Baker, & Hattie, 2000). The same study found that student work in response to assignments from NBCTs *exhibit integrated and coherent understandings of the concepts targeted in instruction and a higher level of abstraction* than understanding achieved by other students. The study claims that 74 percent of NBCTs' students demonstrate *deep understanding* compared with only 29 percent of students of non-certified teachers demonstrated through student work samples comparisons (Smith, Gordon, Colby, & Wang, 2005). Yet, in the same study, using eight indicators of teacher practice, no statistically significant difference was discerned between NBCTs and non-NBCTs unless each indicator was evaluated individually. The researchers claim that in seven of the eight areas, NBCTs students demonstrated higher

average scores that are statistically significant, including writing performance, especially organization and sentence structure (Smith, Gordon, Colby, & Wang, 2005).

While purposeful reflection with the intent to understand and create meaning from observation is the heart of the National Board process, candidates receive a score indicating success rather than feedback regarding strengths and weakness (O'Kane, 2013). It is also argued that the lack of feedback from the NBPTS following certification could negate the extent of the impact of sustained reflective changes in practice, despite testimonials from certified teachers that the process is *empowering* and promotes reflection (Kraft, 2002).

Studies commissioned by NBPTS' Research Council initially provided favorable findings in research conducted at the University of North Carolina at Greensboro. National Board Certified Teachers (NBCTs) scored higher than non-certified teachers in the identified dimensions of teaching expertise based on student work samples and what teachers maintain and sustain from the certification process into practice (Bond et al., 2000; Lustick & Sykes, 2006). When researchers used 13 features of teaching expertise consonant with other educational research, a group of NBCTs outperformed a comparable group of veteran non-NBCTs in all 13 categories, with differences rising to statistical significance in 11 of the 13, including the challenge offered by curricula, the depth of subject matter represented, and teacher feedback to students (Bond, Smith, Baker, & Hattie, 2000). Two additional studies commissioned by the NBPTS (2001) also reported positive findings regarding the impact of the certification process in both classroom and in collegial relationships that supported learning, confirmed in Arizona State University studies examining the impact on student achievement by NBCTs (Vandevoort, Amrein-Beardsly, & Berliner, 2004). A four-year, elementary school study using standardized tests also reported a one-month gain in the performance of NBCTs' students over non-certified

counterparts. Yet data provided in another study investigating the impact of the sixteen NBCTs in the Tennessee's Value-Added Assessment System found that no NBCTs met the defined standard of academic gains that identifies highly qualified teachers in that state (Stone, 2002).

Goldhaber's (2004) subsequent study using North Carolina's accountability standards reported that NBCTs appeared to be more effective than their non-certified counterparts based on student gains, but questioned the true impact on teacher quality. The study questioned whether the process develops highly qualified teacher or simply confirms an already effective educator who would be more willing to embrace the process to document effectiveness (Goldhaber, Perry, & Anthony, 2004). Conflicting messages continue to permeate research and literature detailing the National Board Certification (Bond, Smith, Baker, & Hattie, 2000; Cavalluzzo, 2004; Dagenhart, 2010; Goldhaber, Perry, & Anthony, 2004; Koppich, Humphrey, & Hough, 2007; Lustick & Sykes, 2006). Lustick (2006) notes that teachers who voluntarily immerse in a year-long reflective process to develop an extensive portfolio while preparing for a battery of tests would obviously reap professional development rewards. However, a wide range of variables exists for candidates pursuing the process, including motivation, education, experience, and age, would also affect the outcome of what is learned during the process (Lustick & Sykes, 2006).

When veteran teacher and chair of the NBPTS, Barbara Kelly (2003), addressed the White House Conference concerning NCLB to explain and defend the purpose of the NBPTS, she called it a *self-governing organization* designed to create research-based standards and to construct a rigorous definition of good teaching, based on a common language that all educators could use to describe how they conceive, implement, and evaluate their practice. According to Kelly, *knowing how to be a good teacher and actually doing it are two very different things* (Kelley, 2003). She added that this voluntary certification process allows teachers to be

measured against National Board Standards to determine good teaching that results in improved student learning. Congress has invested in National Board Certification because of the *opportunity to attract, identify, and reward exemplary teachers* (Kelley, 2003). Salary compensations for NBC also allow accomplished young and second-career teachers to advance through the salary schedule to gain the status of highly-qualified. The certification process is open to all teachers with the goal of promoting excellence in the classroom (NBPTS, 2012). Additionally, one-third of all schools of education adopts National Board-related initiatives and uses National Board standards as a resource for pre-service and graduate programs (NBPTS, 2012).

The National Board of Professional Teaching Standards (NBPTS) commissions more independent study regarding its impact on teaching than any other single agency – much of it mixed in its support (2012 Guide to National Board Certification, 2012). Over 200 education researchers from throughout the United States have been commissioned by the NBPTS to pursue independent research on National Board Certified Teachers and their impact (National Board of Professional Teaching Standards, 2002). According to Lee Schulman, President of the Carnegie Foundation for the Advancement of Teaching, *The National Board is probably the best grounded, in research terms, of any assessment in the professions that I know, in spite of the fact that it's barely a decade old in terms of that kind of operation. We feel certain that present and future studies will provide further validation that the work of the National Board, and more importantly, the work of National Board Certified Teachers, is truly redefining the teaching profession and reshaping America's schools* (Kelley, 2003).

Several major studies found that students of National Board Certified teachers (NBCTs) perform better on standardized tests and on other measures than students of non-certified

teachers. In one large-scale analysis of more than 100,000 student records, students of NBCTs, particularly African American and Hispanic students, made larger gains in mathematics than students taught by non-NBCTs (Cavalluzzo, 2004). Another study found that students of NBCTs make learning gains equivalent on average to an extra month in school (Vandevoort, Amrein-Beardsly, & Berliner, 2004).

Other studies, however, reached different conclusions. A 2005 report found large variations in the impact of NBCTs, concluding that no significant differences existed between NBCTs and other teachers although data did indicate that NBCTs accounted for significant achievement gains for students in *some grades and subject areas* (Sanders, Ashton, & Wright, 2005). Data generated regarding the work of National Board Certified Teachers in North Carolina and the performance of their students on statewide achievement tests validated the study conducted by the University of North Carolina in which NBCTs significantly outperformed colleagues who failed to achieve certification in 11 of 13 measures of expert teaching (Goldhaber, Perry, & Anthony, 2004). The study's examination of student achievement reveals that students of NBCTs scored 7 to15 percentage points higher on year-end assessments. The study also claimed that students of NBCTs had a greater depth of understanding of the subject matter they were being taught and that minority students benefited even more from NBCTs instruction. Conversely, another study reported data that concluded that NBCTs were significantly no better than non-certified counterparts (Sanders, Ashton, & Wright, 2005). However, data was not provided, nor were the statistics of the UNC research measures of expert teaching addressed to invalidate Goldhaber's UNC study. Sanders' model is based on hedonic linear modeling (HLM) while the UNC study uses multiple regression analysis. Sanders' HLM does not provide longitudinal student data that might compensate for the lack of student

background data. However, both studies recommended an increased requirement for evidence of student growth (Sanders, Ashton, & Wright, 2005).

Student growth arguably occurs when highly effective, self-efficacious teachers deliver quality instruction (Ashton & Webb, 1986). Dennis Van Roekel, past president of the National Education Association (NEA), the nation's largest union of teachers and education professionals with more than three million members, supported the Obama administration's *Race to the Top (RTTT)* solution to a systemic problem, reiterating the need to attract highly qualified teachers, to maintain competitive salaries, and to promote professional development *necessary to transform the system* (Van Roekel, 2013). Timothy Daly, president of the New Teacher Project, a nonprofit group that recruits new teachers for school districts including New York City, said the use of RTTT's competitive grant program fosters states' innovative outside-the box solutions (Hu, 2012). The need to define teacher effectiveness and promote accountability has prompted a myriad of studies to explore teacher quality; many suggest a strong link to student learning and success (Campbell, West, & Peterson, 2005; Cochran-Smith, 2005; Ding & Sherman, 2006; Cruickshand, Jenkins, & Metcalf, 2003; Darling-Hammond & Young, 2002; Ding & Sherman, 2006; Goe, Bell, & Little, 2008; Harris & Sass, 2008; Marzanno R. J., 2009; Palady & Rumberger, 2008; Rothstein, 2010).

Further research supports NBCTs in-depth knowledge of content, use of effective teaching and classroom management strategies, and the willingness to employ additional resources to equip students' *deep learning* based in higher-order critical thinking that policymakers have demanded for future economic success in the global economy. These studies find that students of NBCTs exhibit more effective writing skills and higher comprehension of content than students of non-certified teachers (Bond, Smith, Baker, & Hattie, 2000; Smith,

Gordon, Colby, & Wang, 2005). While results of studies regarding success on standardized testing and academic gains are mixed, NBCTs are more likely to pursue graduate coursework, create positive classroom environments, and engage in curriculum design and quality instructional planning that includes complex reading comprehension assignments (Sanders, Ashton, & Wright, 2005; McColsky, Strong, Ward, & Howard, 2005). Studies also reveal that NBCTs perform better than non-NBCTs on indicators of teaching expertise and apply in the classroom what they learn from the certification process (Bond et al., 2000; Lustick and Sykes, 2006).

Additional research shows that NBCTs create more challenging curricula, present subject matter in greater depth, and provide better feedback to students than non-NBCTs (Bond, Smith, Baker, & Hattie, 2000). National surveys indicate a greater confidence of NBCTs in their abilities to foster student achievement than non-NBCTs (Koppich, Humphrey, & Hough, Making use of what teachers know and can do: Policy, practice, and national board certificaiton, 2007). Further findings support the certification process as a means to equip teachers to create stronger curricula and improve their ability to evaluate student learning (Kowalski, Chittenden, Spicer, & Tocci, 1997).

Researchers also claim that students of NBCTs are twice as likely as other students to produce writing that employs complex ideas and integrates subject matter from multiple disciplines, as demonstrated by the Common Core of State Standards (NBPTS, 2005). They specifically link the improved comprehension of NBCTs' students to the lessons and assignments designed by their teachers, which generates the question of this research regarding the new knowledge and skills acquired through participation in the NBC process. Does NBC impact teaching efficacy and promote leadership?

Teacher Self-Efficacy

Research regarding teacher effectiveness was advanced through the behavioral psychology and social learning theory of Albert Bandura. The concept of teacher self-efficacy or the belief an individual has about his or her capabilities to be successful is based on Albert Bandura's crucial role in defining and measuring self-efficacy (Hoy & Woolfolk, 1993). Bandura defined self-efficacy as the *belief in one's capacity to organize and execute courses of action required to produce given attainments* (Bandura A. , 1977).

Teacher self-efficacy is defined as the *extent to which the teacher believes he or she has the capacity to affect student performance* (Berman, McLaughlin, Bass, Pauly, & Zellman, 1977). Inherent in this definition are a teacher's belief that they can influence how well students learn, *even those who may be difficult or unmotivated* (Guskey & Passaro, 1994). Teacher self-efficacy is rooted in six foundational studies regarding the self-efficacy construct including: the Los Angeles student-preferred reading program study (Armor et al., 1976); the student-teacher interaction in classroom study (Ashton & Webb, 1986); the implementation of innovative programs (Guskey, 1988); the changes in professional practice study (Smylie, 1988); and the pre-service education and school climate study (Hoy & Woolfolk,1993).

These studies are based on the work of Bandura (1981) and Rotter (1966) whose work examined *locus of control* (Tschannen-Moran, Woolfolk-Hoy, & Hoy, 1998). According to Bandura (1977) self-efficacy is developed through four primary sources of information: mastery experiences, vicarious experiences, verbal persuasion, and affective states that contribute to both the analysis of teaching and self-perceptions of teaching competence. When a teacher completes

a task at mastery level, the most powerful source of self-efficacy, the experience increases self-efficacy (Hoy & Woolfolk, 1993). Those who think they can perform well, usually do.

Vicarious experiences build self-efficacy, increasing the expectation of one's own success, as do verbal or social persuasion. As stated previously, when a peer, or an expert who is faced with an obstacle, setback, or failure, is confident in their efforts and capabilities, that person tends to redouble efforts to master the challenge rather than abort the effort (Hoy & Woolfolk, 1993). Studies indicate a positive relationship between high teacher efficacy, teacher performance, and job satisfaction, rooted in a teacher's belief that he or she can make the difference in classrooms and promote student achievement (Hoy & Woolfolk, 1993; Viel-Ruma, Houchins, Jollivet, & Benson, 2010; Ware & Kitsantasa, 2011). Additionally student achievement in math and reading has been linked to teacher efficacy (Goddard, Hoy, & Woolfolk Hoy, 2000). While Rotter believed that the locus of control is a human trait, Bandura's efficacy concept is an experientially derived construct (Bandura, Self-efficacy: Toward a unifying theory of behavioral change, 1977). This fundamental difference provides researchers the opportunity to define and attempt to measure teacher efficacy by measuring perceptions of self-efficacy (Tschannen-Moran, Woolfolk-Hoy, & Hoy, 1998).

The addition of two questions to the RAND instrument used in the Los Angeles Unified School District's (LAUSD) study allowed researchers attempting to identify policies that fostered success in an innovative reading program a theoretical base for measuring teacher efficacy (Tschannen-Moran, Woolfolk-Hoy, & Hoy, 1998). The study was grounded in Rotter's work and involved locus of control as applied to teaching and learning to describe educators' perceptions regarding their influence over student achievement. The strong relationship between teacher efficacy and student success demonstrated that teacher efficacy is situational and specific

to the context; student motivation and performance are significant reinforcers for teacher behaviors; and therefore, teachers with a high level of self-efficacy believed they could strongly influence student performance, creating a self-perpetuating cycle of effects (Tschannen-Moran, Woolfolk-Hoy, & Hoy, 1998). The resulting score defined teacher efficacy (Armor, et al., 1976). Bandura's conceptual strand of theory identified the cognitive process in which humans construct beliefs about their capacity to perform at given levels of attainment which influences effort, persistence, and resiliency. While examination of these discreet conceptual strands raised a myriad of questions regarding the constructs, when viewed through the psychological perspective it yielded satisfactory measures of teacher efficacy (Tschannen-Moran, Woolfolk-Hoy, & Hoy, 1998).

Quality teachers understand teaching and learning and continually assess the effects of their practice to employ strategies to improve (Marzanno R. J., 2003). Efficacy bolsters a teacher's ability to critically consider the design and delivery of instruction and the interactions within the classroom that provide for rich educational experiences to foster student achievement (Ivason-Jansson & Gu, 2006). Teachers who have mastered a deep understanding of teaching and learning and who have also mastered and consistently employ a variety of instructional strategies to assess the instructional process are confident in their delivery and effectively self-evaluate to take risks to improve (Parris & Block, 2007).

Teacher Self-Efficacy and the Certification Process

The process of becoming certified requires candidates to submit videotapes of classroom instruction, examples of student assignments, and evaluations of student work, as well as, perform well on written assessments regarding content and teaching. Research has claimed that

reflection is an important professional development tool that promotes teacher self-efficacy (Wade & Ferriter, 2007; Yankelovich Partners, 2001). Studies cataloging NBCTs' professional priorities, including access to classroom materials, time for research and study in their content area, time for professional development, teaching autonomy, and leadership opportunities report that NBCTs desire a wider range of educational resources than other teachers and have higher aspirations for their practice and for their students and seek resources necessary to achieve their goals (Dagenhart, 2010).

The National Board of Professional Teaching Standards' (NBPTS) Five Core Propositions form a foundation for the framework for improvement in instruction (National Board Certification candidate survey, 2001). Pursuit of certification promotes a teacher's self-efficacy that has proven to trickle down to students (Schunk & Pajares, 2002). The delineation of what a great teacher should know and be able to do support not only the growth of the teacher's self-efficacy, but the larger school culture and collective efficacy of the institution (Frank et al., 2008).

Teacher leadership

Teacher leadership, linked to teacher self-efficacy, is promoted through professional learning communities and impacts student achievement (Katzenmeyer & Moller, 1996). Classroom teachers who assume leadership positions have the greatest influence on peers to promote change at the classroom level which directly supports student learning. Empowering teachers to create change at this level increases student achievement (Furtell, 2000). Within schools, National Board Certified Teachers can meet this demand as mentors for new teachers, curriculum and instructional leaders, and respected change agents (Cavalluzzo, 2004).

State support for National Board Certification varies from state to state. In Oklahoma, a NBCT receives an additional $6000 annually through the 10-year certification period. Florida boosts NBCTs' salaries 10 percent upon certification, with an additional 10 percent provided to those who mentor new teachers or other National Board candidates. The state in this study provides matching funds for each of its counties that individually set compensation (MSDE, 2008). The compensation for the 2013-2014 academic year of the district studied will compensate up to $1500 based on the tier of the School Performance Index (SPI) matched by the state. This is a decrease from the 2012-2013 negotiated agreement which awarded $2000 to each NBCT.

Katzenmeyer and Moller (1996) conclude that NBCTs make a difference in schools and districts leading to reflective practices, greater accountability, and promotion of reform. Teacher leaders inspire a shared vision and lead the professional communities in which they participate to refine a shared vision. Measurable characteristics in schools that foster teacher leadership include collaboration and open and honest communication regarding an understanding of what makes a positive school environment for learning (Katzenmeyer & Moller, 1996). Teacher leadership drives student success when viewed as a purposeful process supported by collegiality and a shared vision of teaching and learning (Sergiovanni, 2002).

Teacher leaders mobilize peers to assume collective responsibility to promote a common vision to interconnect a system sensitive to the needs of the school community, school climate, and school improvement (Murphy & Datnow, 2003). Rather than a loose confederacy of isolationists, collaboration is fostered by the efficacy of the teacher leader that promotes individual and collective efficacy. Teacher leaders assume the power to accomplish goals and

make connections within and beyond the school to mobilize the organization and resource the goals to solve complex problems (Walsey, 1991).

In 1983 *A Nation at Risk* launched a wave of leadership reform efforts challenging the quality of education in American classrooms (Walsey, 1991). Modeling school leadership after the corporate model failed in its intent to provide formal authority vested in specific roles to assure safety, order, and productivity, and to promote standards for achievement *that promoted good, rather than great, or worse, a status quo rather than forward-thinking entities* (Collins, 2001; Coyle, 1997). Initially, teacher leadership was virtually non-existent or served perfunctory efficiency functions rather than the promotion of student achievement or enhanced teacher practices (Silva, Gimbert, & Nolan, 2000).

In 1996, the National Commission on Teaching and America's Future endorsed professionalism by promoting teacher leadership which was opposed by both administration and teachers, who were concerned with relinquishing control and the lack of professional development and time to accomplish new tasks respectively (Odell, 1997). However, the reform revealed the importance of teachers as instructional leaders and capitalized on their instructional knowledge in curriculum reform, staff development, team leadership, and school improvement (Belgen & Kennedy, 2000). Teachers who served as change agents including mentoring, leading, and collaborative decision making were more efficacious and remained in the profession (Darling-Hammond L., 1995).

Teacher leadership re-cultured schools to create job-embedded, collaborative, professional learning communities that recognized classroom accomplishments *as the hands of leadership* (Donaldson, 2001). From this the Interstate School Leaders licensure consortium (ISLLC) was developed by the Council of Chief State School Officers, which represented a

consortium of twenty-four states and professional organizations including the Association for Supervision and Curriculum Development (ASCD), the National Association of Elementary and Secondary School Principals (NAESSP), and the National School Boards Association (NSBA) to create standards for all school leaders, administrators and teachers, to promote productive schools and positive educational outcomes (Shipman, 1996). Teacher Leadership enhances the capacity of an institution, quality of a teaching staff to promote professional learning communities, school improvement, and fosters accountability that changes teacher practice when initiated at the classroom level (Fogarty, 2005). Teachers who lead are more satisfied and connected in their profession, fostering increased student achievement as a result of the professional learning communities that facilitate professional growth and highly effective problem solving (O'Hair & Reitqub, 1997). Most importantly, teacher leadership opportunities promote teacher self-efficacy (Hoy & Woolfolk, 1993).

In a study of 47 elementary schools in Florida and North Carolina where NBCTs are highly concentrated, socio-metric data collected from a survey administered at staff meetings yielded 1,583 Likert scale surveys (84%). Results concluded that teachers disposed to leadership pursued National Board Certification (Frank, et al., 2008). A related study concluded that the process of certification provided teachers the opportunity to become self-reflective and confident in their instructional practices, as well as, enter into mentoring relationships (Serafini, 2002). Qualitative interviews with 25 NBCTs reported improved teaching skills including instructional planning, delivery, improving content knowledge, assessment, and participation in learning communities leading to teacher leadership (Berry, 2008). However, there is little research literature to develop an understanding of what is effective about the certification process (Goldhaber, Perry, & Anthony, 2004). Research suggests that National Board Certification

seems to be most useful for educators who already demonstrate productive self-direction with less evidence of improvement for novice or marginal teachers attempting to improve through the process (Kerr, 2005). A subject in one case study of teacher performance reported that prestige and money were the primary motivating factors for completing the process (Poole, Shiavone, & Carey-Lewis, 2001). In the same study, a principal reported that certification had little lasting impact in the classroom.

One study shows that National Board Certification can improve teaching practice and is a high-quality form of professional development, concluding that Certification is a *transformative experience* for teachers and advances and supports student learning (Lustick & Sykes, 2006). A myriad of studies considering the influence on school improvement through mentoring and other leadership activities, provide data regarding NBCTs participation in their professional learning communities, thus improving school culture and fostering increased student achievement, increasing collective efficacy of a school through leadership contributions (Cavalluzzo, 2004; Frank, et al., 2008; Goldhaber, Perry, & Anthony, 2004; Vandevoort, Amrein-Beardsly, & Berliner, 2004).

NBCTs are underrepresented in low performing schools. A 2004 survey of the six states in which NBCTs are most concentrated revealed that only 12 percent of NBCTs teach in high-poverty schools and fewer than 20 percent teach in high-minority and/or low-performing schools. In these same schools NBCTs reported that leadership did not foster advancement or recognition for the expertise garnered by the certification process (Koppich, Humphrey, & Hough, 2007). However, other statistics report that almost half of NBCTs are teaching in schools eligible for Title I funding and where the free-and-reduced-lunch rate is more than 40 percent. Teachers in high-need schools report that the National Board's Targeted High Need Initiative

and *Take One!* improved the quality of instructional planning and implementation and promote professional growth fostering a revitalization of a more reflective practice and better relations with fellow faculty members following Certification (Johnson, 2009).

National Board Certification fosters retention of accomplished teachers. US Secretary of Education Arne Duncan (2010) noted that in Chicago, nearly 90 percent of NBCTs remain in teaching. In Ohio, 52 percent of NBCTs surveyed reported intent to remain in teaching, compared to 38 percent of non-NBCTs in the state (Sykes, et al., 2006). In South Carolina, nearly two-thirds of NBCTs surveyed said their desire to stay in the classroom increased, with one third indicating their desire increased greatly to remain in the classroom. (Center for Educator Recruitment, Retention and Advancement Anual Report, 2011). In North Carolina NBCTs are less likely to leave the public school system when compared with non-NBCTs (Goldhaber & Anthony, 2005). Studies also reveals that teachers who have applied for certification report a better understanding of pedagogy, increased opportunities for taking on leadership roles, increased collegiality, and renewed enthusiasm for teaching (Lustick & Sykes, 2006; Sykes et al., 2006; Vandevoort et al., 2004).

Those NBCTs surveyed reported that new roles post-certification include mentoring and coaching others, especially new or struggling teachers, and developing programs aimed at improving student learning (Goldhaber & Anthony, 2005; Cavalluzzo, 2004; Yankelovich Partners, 2001; Smith, Gordon, Colby, & Wang, 2005; Lustick & Sykes, 2006). A survey of NBCTs found that 90 percent believed they had a *responsibility* to be a leader and *to give something back* to their schools and the profession, as well as, to mentor peers, and participate in committee work, curriculum development, and school improvement reforms (National Board Certification candidate survey, 2001). After achieving National Board Certification, 70 percent

of NBCTs surveyed reported that they were more involved in school initiatives including chairing committees (Sykes, et al., 2006). These conclusions are echoed in the feedback from almost half of the country's nearly 5,000 teachers who achieved National Board Certification before 2000. The survey concluded that NBCTs are most often involved in mentoring or coaching other candidates for National Board Certification (90 percent), mentoring or coaching new or struggling teachers (83 percent), and developing or selecting programs or materials to nurture student learning (80 percent) (Yankelovich Partners, 2001). Almost all surveyed reported enhanced credibility with other educators and leadership opportunities made available as a result of Certification. Sykes and colleagues (2006) reported that nearly all NBCTs are significantly more involved in in their schools, mentoring others in a highly effective form of professional development than do non-NBCTs (Sykes, et al., 2006). Additionally, findings reported non-NBCTs learn more from NBCTs than from their non-National Board Certified colleagues. NBCTs also offer increased input on curricular decisions, organize professional development opportunities, serve as department leaders, engage in community outreach to parents, and serve as faculty voices to policymakers and other stakeholders (Sykes, et al., 2006).

Conclusion

Does the National Board's intensive professional development certification process foster high levels of perceived teacher self-efficacy and thus support leadership beyond the classroom? Guskey (2002) contends that answers concerning what, if any, difference becoming a NBCT makes is largely based on assumptions about best practices in professional development coupled with early studies indicating a positive correlation between NBCTs and student achievement (Guskey T. R., 2002). While some studies report NBCTs being underutilized, research also

shows that while NBCTs were aware of best practices, that did not necessarily translate into use in the classroom (Poole, Shiavone, & Carey-Lewis, 2001). However, the same study affirmed that monetary gains for effective teaching are less of a motivator than student learning. According to Goldhaber's study, the value of National Board Certification as a professional development opportunity is teacher-dependent. Research also suggests that National Board Certification attracts quality teachers rather than promotes a transformation through the process (Goldhaber, Perry, & Anthony, 2004)

National Board Certification is a voluntary process for educators seeking a professional development opportunity that has been promoted as *transformative* (Pennington, 2006). Collected evidence supports the notion that NBCTs grow in practice and facilitate learning more effectively for all children (Camp, 2007; Frank, et al., 2008). However, other studies also declare that National Board Certification has not in any great way transformed teaching as a profession. Pockets of NBCTs are uniquely qualified, sometimes empowered, and often *simply a phenomenon to be studied* (Irwin-Beck, 2002). Yet other studies mark the similarities between National Board Certification and standards and expectations of teacher leaders who are visionary and inspire others to act on a collective vision (Kouzes & Posner, 1997). Is National Board Certification an effective vehicle for identifying teacher self-efficacy and leadership potential in the district studied?

CHAPTER III

Methodology

This quantitative study examines the perceived levels of teacher self-efficacy and leadership of National Board Certified Teachers (NBCTs) compared to non-NBCTs in one district. The study used a cross-sectional, nonexperimental survey design to determine if a significant difference exists in the perceived self-efficacy and leadership of NBCTs and non-NBCTs. This chapter will review the research design and approach; population and sample; data collection, instrumentation and materials, and data analysis; protection of participants' rights; and summary.

Research Design and Approach

This quantitative study of National Board Certified Teachers (NBCTs) examined the teacher self-efficacy levels and leadership of NBCTs certification using the short form of the *Teacher Sense of Efficacy Scale* (*TSES*). Permission was granted for use of this instrument by Dr. Woolfolk-Hoy (Appendix B). The self-efficacy domains of the instrument include three subsets: Student Engagement, Instructional Strategies, and Classroom Management. The *TSES* corresponds to the National Board's Five Core Propositions in the following ways (see Table 2). Core Proposition One (CP1) states NBCTs are committed to their students and learning (student engagement). Core Proposition Two (CP2) states NBCTs know the subjects they teach and how to teach those subjects to their students, and Core Proposition Four (CP4) states NBCTs think systematically about their practice and learn from experience (instructional strategies). Core Proposition Three (CP3) states NBCTs are responsible for managing and monitoring student learning (classroom management). One additional question gathers data on the number and type

of leadership roles held by participants to address Core Proposition Five (CP5) regarding collaborative membership in learning communities, especially in the role of lead teacher. In the district studied a lead teacher has also been titled Student Achievement Specialist. The Department Chair is also responsible for these staff development duties when a faculty cannot support a dedicated position.

A comparative cross-section survey design was used to identify of whether or not significant differences exist between the perceived self-efficacy levels and leadership roles of NBCTs and non-NBCTs. National Certification is the independent variable. The dependent variable is the self-reported perceived levels of teacher self-efficacy as measured by the three domains of the *Teacher Sense of Efficacy Scale* (*TSES*) with an additional item to generate data regarding leadership (see Appendix A). A t-test allowed a comparative investigation of the three subsets of the *TSES* which include engagement, instruction, and management between NBCTs and non-NBCTs. Non-NBCTs who are highly qualified, tenured teachers, were included in the pool for a simple random sample.

Surveys are an effective and expedient method to measure perceptions at a given point in time (Creswell, 2005). Using surveys is a common vehicle to gather nonexperimental data about a population which permits comparison between two groups within a population (McMillan, 2004). However, surveys do not provide information that allows cause and effect explanations of data (Creswell, 2005). A second disadvantage of surveys is the potential for a low response rate which may result in sample bias in which some members or groups within the general population are under reported or unreported because volunteer respondents and non-respondents may differ in important ways (Creswell, 2005; Gay et al., 2009; McMillan, 2004).

Hypotheses.

The district studied is located in Maryland, which has ranked number one in education in the nation for five years (Bui, 2013). Of the 1,752 teachers in the district, 1,400 are highly qualified, tenured teachers. Of these, 35 are NBCTs, which reflects the national 2-3% ratio of NBCTs to non-NBCTs. Maryland, and consequently the district, is the recipient of Race to the Top federal grant monies, which meets President Obama's mandate includes that "*all citizens in all states"* be prepared for college and careers by "*highly qualified, efficacious"* teachers, who are equipped to "*lead"* in the 21st century (Obama, 2009).

According to the Five Core Propositions of the NBPTS, highly qualified teachers demonstrate a commitment to students and learning, content knowledge and how to convey that knowledge to students, effective management and monitoring of learning, a systematic reflection of practice, and leadership in professional learning communities (NBPTS, 2012). This forms a framework for improvement in instruction that promotes a teacher's self-efficacy and the resulting trickledown effect to the self-efficacy of students (Schunk & Pajares, 2002).

Therefore, National Board Certified Teachers demonstrate higher levels of teacher self-efficacy when compared to non-NBCTs in the domains of student engagement, instruction and management.

National Board Certified Teachers assume leadership roles in their school or district at a higher rate than non-NBCTs of the district.

Population and Sample.

The District's NBCTs (N=35) and a matched sample of non-NBCTs (N=35) was used for this study. Twelve NBCTs are certified at the elementary level, seven NBCTs are certified at the middle school level, and 16 NBCTs are certified to serve in high schools. A matched sample

were chosen by administrators in the schools where NBCTs are currently employed based on grade-level or content area, years of service and years in their current position, race, and gender.

All participants were invited to complete the *TSES* with an additional item to document leadership. Teachers were invited to participate through both a letter and a duplicate email with a link to SurveyMonkey. SurveyMonkey allowed NBCTs to respond via a website with automatic follow-up reminders for those who had not responded and a thank you for those as they responded.

Variables.

Patton (1990) describes purposeful sample as an "information-rich" (p. 169) sampling approach that will "illuminate the questions under study." Critical case sampling is a purposeful sampling strategy allowing this researcher to examine the data from a sample group (NBCTs) that in some way is different from the norm (since most teachers are not NBCTs) and make some "logical generalizations" (Patton, 1990, p. 175) based upon similarities or common evidence within the group. NBCTs, like all certified teachers, have participated in teacher preparation programs. However, NBCTs have voluntarily participated in this rigorous program of study to examine their practice according to the standards set by the NBPTS definition for *what good teachers should know and be able to do* (NBPTS, 2012).

There are 35 NBCTs in the district studied. The 35 non-NBCTs matched sample selected from the district were highly qualified, tenured teachers in elementary and secondary schools chosen by their administrator on the basis of content or grade level, years of service or years in their current position, race and gender for comparison to NBCTs. Both samples were invited to complete the Woolfolk and Hoy *TSES* to determine perceived levels of teaching self-efficacy. The variables embedded in the scale include Student Engagement, Instructional Strategies, and

Classroom Management. This corresponds to the NBPTS' Five Core Propositions (see Table 2): commitment to students and their learning (engagement), know and convey the subjects they teach (instruction), and managing and monitoring student learning (management). One additional question gathered data on the leadership roles of participants to consider teachers' collaborative membership in learning communities.

The focus of this study was to determine an understanding of the perceived teacher efficacy levels of NBCTs in the district and their teacher leadership. The matched sample of non-NBCTs provided a comparison.

Data collection/Instrumentation and Materials /Data Analysis

Timing.

A formal invitation was issued via interoffice mail and email (See Appendix C). The informed consent directions were posted on the survey website delivered via SurveyMonkey and available during the two week period in April following Spring Break. A follow-up reminder was issued on day eight for those who had not responded. SurveyMonkey is used routinely by the district and is an institutionalized protocol for surveys.

Instrumentation - Teacher Sense of Efficacy Scale (TSES).

Reliability.

Tschannen-Morren and Woolfolk Hoy (1998) used the reliability and validity data from three studies to craft the *Teacher Sense of Efficacy Scale* (*TSES*) to overcome the conceptual and statistical problems associated with previous efficacy measures and to address the level of specificity needed to address context of teacher self-efficacy. These surveys include *The Webb Scale* by Ashton (1982), Gibson and Dembo's *Teacher Efficacy Scale* (Gibson & Dembo, 1984),

Bandura's *Teacher Efficacy Scale* (Bandura, 1997), *The Rand Measures* (Armor et al, 1976), and *The Teacher Locus of Control* (Rose & Medway, 1981). Tschannen-Morren and Woolfolk Hoy (1998) suggest that a valid measure of teacher efficacy must assess both personal competence and an analysis of the task in terms of the resources and constraints in particular teaching contexts accomplished in the *TSES*.

The *TSES* is rooted in four foundational studies conducted between 1976 and 1993 evolving from Bandura's original self-efficacy scale. It is designed to measure teacher-efficacy in the constructs of engagement, instruction, and management. Originally, it was designed as a Likert-type scale similar to the Gibson and Dembo instrument that expanded the scale advocated by Bandura to include teacher capabilities. Originally the Ohio *State Teacher Efficacy Scale* (*OSTES*), it was further refined in three separate studies. The scale was subsequently tested and pared down to a long form with 24 items and a short form with 12 items and renamed.

The factor structure, reliability, and validity of the instrument incorporated Emmer's (1990) teacher efficacy for classroom management scale to include the instructional challenges of responding to the needs of capable students and the use of instructional strategies to promote higher order thinking. Field testing further refined the instrument. The construct validity of the short and long forms of the *OSTES* was assessed through a correlation of the *TSES* measure and other existing measures of teacher efficacy (Kerlinger, 1986). Total scores on the *TSES* long form were positively related to both the Rand Measure items (r=0.18 and 0.53, p<0.01) as well as to both the personal teaching efficacy (PTE) factor of the Gibson and Dembo measure (r=0.64, p<0.01) and the general teacher efficacy (GTE) factor (r=0.16, p<0.01).

The long form of the *TSES* is a 24-item, 9-point, Likert-type instrument (See Appendix A). The scores on the *TSES* range from 24 to 216. The short form of the *TSES* is a 12-item, nine-

point, Likert-type instrument (See Appendix A). Based on scores, teachers are placed on a continuum from Lower Efficacy to Higher Efficacy for efficacy in instructional strategies, efficacy in classroom management, and efficacy for student engagement. The *TSES* unweighted scores for the short form range from 12 to 108.

Tschannen and Woolfolk Hoy made the following findings regarding the differences in reliability between the short and long form of the *TSES* (Tschannen-Moren & Woolfolk Hoy, 2001):

Table 1

	Long Form			**Short Form**		
	Mean	SD	alpha	Mean	SD	alpha
TSES (OSTES)	7.1	.94	.94	7.1	.98	.90
Engagement	7.3	1.1	.87	7.2	1.2	.81
Instruction	7.3	1.1	.91	7.3	1.2	.86
Management	6.7	1.1	.90	6.7	1.2	.86

Results for the short form were similar to the use of the long form, indicating that both forms of the *TSES* could be considered reasonably valid and reliable tools for exploring the construct of teacher efficacy. Factors to be analyzed include efficacy in student engagement (items 2, 3, 4, 11), efficacy in instructional practices (items 5, 9, 10, 12), and efficacy in classroom management (items 1, 6, 7, 8) which correspond to the Five Core Propositions of student learning and engagement, reflective and collaborative practice, and management and

monitoring of student learning respectively (see Table 2). The researcher proposes to determine if NBCTs self-efficacy in these three areas are significantly higher than non-NBCTs. The researcher will use the short form of the *TSES* adding one item regarding leadership (Appendix A).

Tschannen-Moren and Woolfolk Hoy's widely used instrument, the *Teacher Sense of Efficacy Scale* (*TSES*), measures a teacher's sense of teaching self-efficacy, providing a means to capture and measure the perceived efficacy in the areas of student engagement, classroom management, and instructional strategies (Tschannen-Moren & Woolfolk Hoy, 2001). This quantitative study used *The Teacher Sense of Efficacy Scale* (*TSES*) to provide a means to measure the perceived level of teacher self-efficacy which also relates to four of the Five Core Propositions of the National Board of Professional Teaching Standards certification.

Table 2 Correlation of *TSES* to Five Core Propositions of the NBPTS

TSES	**Core Proposition Teachers:**	**Addition to *TSES***	**Items**
Student Engagement	are committed to students and their learning (CP1)		2, 3, 4, 11
Instructional Strategies	know the subjects they teach and how to teach those subjects to students (CP2) and think systematically about their practice and learn from experience (CP4)		5, 9, 10, 12
Classroom Management	are responsible for managing and monitoring student learning (CP3).		1, 6, 7, 8
	are members of learning communities (CP5)	leadership roles	13

For the purposes of informing this study the following data collection methods were utilized: *The Teacher Sense of Efficacy Survey (TSES*) developed by Woolfolk-Hoy (Permission granted – see Appendix B) with one added item to determine leadership roles assumed post-certification. A census of NBCTs (N=35) was identified as the target participants with a matched sample of non-NBCTs (N=35). Each group was invited to access to the *Hoy and Woolfolk TSES-Short Form* (See Appendix A*)* using SurveyMonkey to generate data analyzed using SPSS. The widely used *TSES* provided measures of teacher efficacy in that it has a unified and

stable factor structure and assesses a broad range of capabilities that teachers consider important to good teaching without being so specific as to render it useless for comparisons of teachers across contexts, levels, and subjects (Tschannen-Morren, M. & Woolfolk Hoy, A., p 802).

Data Analysis

Descriptive statistics including mean, median, and standard deviation were used to analyze data for Hypothesis 1. A t-test compared the groups to determine if a significant difference existed in the perceived self-efficacy in the domains of Student Engagement, Instructional Strategies, and Classroom Management. Compensated leadership roles were analyzed between the two groups to consider Hypothesis 2.

The form consists of 12 questions related to important characteristics that correspond to the Five Core Propositions of National Board Certification. The scale asks respondents to measure their own ability to complete each task. The self-reported results provide data generated using a 9-point rating scale. A score of 1 represents *nothing* (the individual feels he or she can do *nothing* related to the task). A score of 9 represented *a great deal* (meaning that the teacher feels he or she can do *a great deal* related to the task). The 12 items are divided into three subscales that relate to teacher tasks and correspond to teacher perceived self-efficacy in Student Engagement, Instructional Strategies, and Classroom Management.

Subgroup items measuring efficacy in Student Engagement (items 2, 3, 4 and 11) included questions such as *How much can you do to get through to the most difficult students?* corresponding to the National Board Propositions regarding a teacher's *commitment to students' learning of content knowledge* and *student engagement*. Subgroup items related to efficacy in Instructional Strategies (items 5, 9, 10 and 12) asked questions including *To what extent can you craft good questions for your students?* and correspond to the Core Proposition for developing a

systematic *reflective practice* and *collaboration* with others. The third subgroup's items related to efficacy in Classroom Management (items 1, 6, 7 and 8) included questions such as *How much can you do to control disruptive behavior in the classroom?* These items correspond to the Core Proposition regarding managing and monitoring student learning. Subscale scores were computed by an unweighted means of the items that load each factor.

IRB, human participants, and confidentiality.

All NBCTs and a matched sample of non-NBCTs employed by the district prior to 2014 were included to examine the perceived teacher self-efficacy. Every effort was made to protect the anonymity of individual participants through the use of SurveyMonkey for data collection.

Role of the Researcher.

Use of a self-administered *Teacher's Sense of Efficacy Scale* (*TSES*) with one additional question was accessed through SurveyMonkey allowing participants to remain anonymous throughout the study. Anonymity of participants will mitigate risk to potential researcher bias, interference, or distortion in survey administration, data collection and data analysis. Contact information to potential participants in the letter of invitation for the study was provided in the event that a potential participant had questions or concerns.

Summary of Methodology

This quantitative study used a nonexperimental, cross-sectional survey design based on descriptive and inferential statistical analysis of the potential differences in the perceived teacher sense of self-efficacy and leadership roles of NBCTs and non-NBCTs in one district. A t-test

analysis using SPSS was gathered by an online survey generated through the SurveyMonkey website.

CHAPTER IV

Data Analysis

Hiring highly qualified teachers is arguably one of the most important decisions of an administrator and according to Marzanno the basis for every educational reform as well as the most important factor in a child's education (Marzanno R. J., 2003). However, despite the body of research devoted to teacher effectiveness, its link to student achievement, and the need to advance highly qualified teachers for every student, effective teaching remains an elusive construct to define and measure (Marzanno R. J., 2009; Palady & Rumberger, 2008; Poole, Shiavone, & Carey-Lewis, 2001; Rothstein, 2010). Teacher-efficacy is imperative in a search for quality teachers. Teachers who believe they can affect student achievement usually do (Campbell, West, & Peterson, 2005; Cochran-Smith, 2005; Ding & Sherman, 2006; Goe, Bell, & Little, 2008; Harris & Sass, 2008; Marzanno R. J., 2009; Palady & Rumberger, 2008; Rothstein, 2010). The purpose of this study is to examine the perceived levels of teacher self-efficacy and leadership of NBCTs compared to a matched sample of non-NBCTs.

This study was guided by the following research questions:

Do National Board Certified Teachers (NBCTs) demonstrate higher levels of perceived teacher self-efficacy when compared to a matched sample of non-NBCTs in the domains of Student Engagement, Instructional Strategies, and Classroom Management?

Do National Board Certified Teachers assume leadership in their school or district at a higher percentage than a matched sample of non-NBCTs of the district?

Findings

Respondents included 31 of the 35 NBCTs in the district studied and 21 of the 35 matched non-NBCTs sample invited to complete the survey. The matched sample was generated by administrators based on demographics including gender, race, grade-level or content area, years of service and years of service in the building in which the NBCT was certified, and performance to select candidates for the pool that most closely matched the NBCTs in terms of experience, setting, and professional development and leadership opportunities. All NBCTs in the district, and therefore all participants, were female, Caucasian, tenured teachers, with more than 8 years of service. Scores from the *TSES* for the individual respondents to the survey were entered into the statistical software package SPPS 16.0. Descriptive statistics were computed for the sample. An independent measures t-test was used to compare the perceived self-efficacy and leadership of NBCTs and non-NBCTs. Findings support that no statistical significance exists in the levels of perceived self-efficacy in the areas of Student Engagement, Instructional Strategies, Classroom Management, or compensated leadership roles for the groups surveyed.

The *Teacher Sense of Efficacy Scale – Short Form* (*TSES-SF*; Tschannen-Moran & Hoy, 2001) was administered to measure the perceived teacher self-efficacy beliefs (Appendix B). Dr. Anita Hoy granted permission to use this research instrument for the purposes of this study (Appendix C). The scale, created by a group of researchers at Ohio State University, was revised from Bandura's 30-item teacher efficacy scale to create a valid measure of perceived teacher self-efficacy. The *TSES – SF,* which contains 12-items was used for this study. The overall measure consists of three subscales with four items each: Efficacy for Instructional Strategies, Efficacy for Classroom Management, and Efficacy for Student Engagement. An additional question surveyed the compensated leadership positions assumed by the teachers in the two

conditions. Research by Tschannen-Moran and Hoy (2001) has shown the reliability for the scale ranges from .92 to .95. Reliability for the subscales range from .86 to .90.

Cronbach's Alpha, a measure of the internal consistency for these groups, provided statistical evidence of a strong coefficient of reliability for each sub-area of the *TSES* for the two groups. The alpha coefficient in this sample for Student Engagement is .8.2, for Instructional Strategies .73, and for Classroom Management .69, suggesting that the items had a relatively high internal consistency among this sample.

For statistical purposes, NBCTs were labeled as 0, and the matched sample of non-NBCTs were labeled as 1. Individual scores of all respondent teachers were entered into SPSS in the two groups and considered in the three areas of the *TSES*: Student Engagement (items 2, 3, 4, 11), Instructional Strategies (items 5, 9, 10, 12), Classroom Management (items 1, 6, 7, 8), and compensated leadership positions (item 13). There was no significant statistical difference in the group statistics (Table 3) generated by the *TSES* or the leadership question. Both groups demonstrated high perceived self-efficacy and assumed compensated leadership positions in the district.

Descriptive statistics yielded the following information. The 21 respondents in the matched sample of non-NBCTs scored on average 6.78 points on the *TSES* in the area of Student Engagement with a standard deviation of 1.18 points. NBCTs scored an average of 6.99 points with a standard deviation of 1.15 points. In the area of Instructional Strategies, non-NBCTs averaged 8.06 points with a standard deviation of .83 while NBCTs averaged 8.08 points with a standard deviation of .80. For *TSES* items related to Classroom Management, non-NBCTs averaged 7.49 points per item with a standard deviation of .74, while NBCTs averaged 7.70 points with a standard deviation of .88. Regarding leadership, the non-NBCTs averaged .57

compensated leadership positions with a standard deviation of .87. NBCTs averaged .77 compensated leadership positions with a standard deviation of .80.

Table 3 Group Statistics Analysis Examining Differences between NBCTs (N=31) and non-NBCTs (N=21)

Variable	Group	N	Mean	Std. Deviation	Std. Error Mean
Engagement	1	21	6.7976	1.18221	.25798
	0	31	6.9919	1.15196	.20690
Instruction	1	21	8.0595	.83256	.18168
	0	31	8.0806	.80464	.14452
Management	1	21	7.4881	.74362	.16227
	0	31	7.7016	.88369	.15872
Leadership	1	21	.5714	.87014	.18988
	0	31	.7742	.80456	.14450

In all areas of the *TSES*, the Levine's Test for Equality of Variances returned a significance greater than the α level of .05 indicating that variances were equal and the assumption of the t-test was met. A t-test failed to reveal a statistically reliable difference between the mean scores of NBCTs teachers and the non-NBCTs teachers in all areas. In the area of Student Engagement, an equal variance t-test failed to reveal a statistically reliable difference between non-NBCTs (M=6.80, s=1.18) and NBCTs (M=6.99, s=1.15), $t(50) = .591$, $p = .557$, $\alpha = .05$. In the area of Instructional Strategies, an equal variance t-test failed to reveal a statistically reliable difference between non-NBCTs (M=8.06, s=.83) and NBCTs (M=8.08, s=.805), $t(50) = .092$, $p = .927$, $\alpha = .05$. For Classroom Management items on the TSES, an equal variance t-test failed to reveal a statistically reliable difference between non-NBCTs (M=7.49, s=.744) and NBCTs (M=7.70, s=.884), $t(50) = .91$, $p = .367$, $\alpha = .05$. Regarding compensated leadership positions assumed by the two groups, an equal variance t-test failed to reveal a statistically reliable difference between non-NBCTs (M=.571, s=.870) and NBCTs (M=.774, s=.805), $t(50) = .85$, $p = .39$, $\alpha = .05$.

Table 4: Independent Samples Test

		Levene's Test for Equality of Variances		t-test for Equality of Means						
		F	Sig.	t	df	Sig. (2-tailed)	Mean Difference	Std. Error Difference	95% Confidence Interval of the Difference	
									Lower	Upper
Engagement	EVA*	.182	.671	-.591	50	.557	-.19432	.32902	-.85517	.46654
	EVNA**			-.588	42.328	.560	-.19432	.33070	-.86154	.47290
Instruction	EVA	1.135	.292	-.092	50	.927	-.02112	.23060	-.48430	.44205
	EVNA			-.091	42.084	.928	-.02112	.23215	-.48959	.44734
Management	EVA	.535	.468	-.910	50	.367	-.21352	.23472	-.68497	.25794
	EVNA			-.941	47.555	.352	-.21352	.22699	-.67002	.24298
Leadership	EVA	.193	.662	-.863	50	.392	-.20276	.23498	-.67473	.26920
	EVNA			-.850	40.760	.400	-.20276	.23861	-.68474	.27921

*EVA Equal Variance Assumed
**EVNA Equal Variance Not Assumed

A Pearson product-moment correlation coefficient was computed to assess the relationship between the perceived self-efficacy of non-NBCTs and NBCTs in the four areas of the *TSES* including Student Engagement, Instructional Strategies, Classroom Management, and compensated leadership positions. There was a positive correlation between the two groups in all areas of the *TSES*.

Table 5: Correlations

		Engagement	Instruction	Management	Leadership
Engagement	Pearson Correlation	1	.335*	.528**	.401**
	Sig. (2-tailed)		.015	.000	.003
	N	52	52	52	52
Instruction	Pearson Correlation	.335*	1	.375**	.283*
	Sig. (2-tailed)	.015		.006	.042
	N	52	52	52	52
Management	Pearson Correlation	.528**	.375**	1	.309*
	Sig. (2-tailed)	.000	.006		.026
	N	52	52	52	52
Leadership	Pearson Correlation	.401**	.283*	.309*	1
	Sig. (2-tailed)	.003	.042	.026	
	N	52	52	52	52

*. Correlation is significant at the 0.05 level (2-tailed).

**. Correlation is significant at the 0.01 level (2-tailed).

Summary

In summary, no significant statistical differences were found between the perceived self-efficacy of NBCTs and non-NBCTs in the areas of Student Engagement, Instructional Strategies, and Classroom Management.. The second research question investigated the compensated leadership positions assumed by NBCTs and non-NBCTs and the results were not found to be significant.

CHAPTER V

Discussion

The benefits of high teacher self-efficacy have been documented in a myriad of studies (Armor et al., 1976; Gibson & Dembo, 1984; Henson, 2001; Hoy & Woolfolk, 1990; Simmons et al., 1998; Tschannen-Moran et al., 1998, 2001). Ross (1994) found robust correlations between high teacher self-efficacy and use of effective instructional practices which, in turn, are beneficial for all students (Chester & Beaudin, 1996; Bender & Ukeje, 1989; Gibson & Dembo, 1984; Soodak & Podell, 1993). Teachers with high self-efficacy are less critical of mistakes (Gibson & Dembo), persist through challenges (Gibson & Dembo), and positively affect students' self-efficacy, as well as the collective efficacy of the institutions in which they serve (Midgely, Feldlaufer, & Eccles, 1989). Teachers with strong self-efficacy have the tenacity to persist in a task with more resilience than teachers with weaker self-efficacy who tend to perceive situations as more difficult and are more likely to give up when challenged by difficult students (Pajares, 1996, Tschannen-Moran & Hoy, 2007). Bandura (1977) suggests that a teacher's self-efficacy beliefs are related to the goals they set, the time they invest in teaching, and their ability to persevere in the face of setbacks (Tschannen-Moran et al., 1998). Therefore, identifying a means to measure strong self-efficacy is germane to staffing with the most highly qualified teachers.

This study added to the existing body of literature regarding National Board Certified Teachers' (NBCTs) in the areas of self-efficacy and leadership. The study compared a matched sample of grade-level or content specific, veteran, Caucasian, female non-NBCTs and NBCTs in the district who worked side-by-side and would have had both the same professional development and opportunities to assume leadership. The underlying intent was to identify

whether or not National Board Certification was a viable means to identify highly qualified, self-efficacious teachers, prepared to lead in the 21st century. In this particular case, National Board Certification was the independent variable. Individuals in both samples scored high in all three areas of the TSES. Individuals in both groups also assumed compensated leadership positions. Eight NBCTs have served as or are current Lead Teachers. Two of the non-NBCTs are current Lead Teachers. Thirteen NBCTs have served or are currently serving as department chairs or team leaders, compared to seven non-NBCTs in this teacher leadership role. In both groups, three teachers currently serve as administrators.

It is the participation rate that is most interesting between the two samples. While 31 of the 35 NBCTs, or 89%, responded, 21 of the 35 invitees, or 66%, of the matched sample completed the survey. NBCTs routinely go beyond the requirements of their profession to document excellence in teaching. They form a strong sense of commitment to teaching and professionalism. This could explain the atypical high return rate. This atypical high return rate speaks to the collegiality of the participants in both samples. While a high response rate from a small sample is considered preferable to a low response rate from a large sample (Evans, 1991), the challenges of finding differences in the small sample size of this homogenous group with a narrow standard of deviation not only has implications for the study, but for the district.

As previously stated, NBCTs document the incorporation of the Five Core Proponents into their practice through the certification process. Certification requires proof of the assumption of leadership roles, especially the *lead teacher* position prescribed by the NBPTS's goals to promote continuous improvement. They are further called to document a commitment to students and their learning, a commitment to content and strategies to convey the subjects they teach, assumption of the responsibility for managing and monitoring learning, and a systematic

reflection on their practice to foster school improvement. Finally, NBCTs must document their active and contributory membership in professional learning communities (NBPTS, 2002). NBCTs are thus called to invest themselves into continuous instructional improvement and student learning through collaboration and a shared vision with peers and all other stakeholders (Phillips, 2009). The willingness to participate in the research process might be attributed to this factor. However, there was no statistically significant difference in the scores between the samples on the *TSES* which measures perceived self-efficacy in the areas of Student Engagement, Instructional Strategies, and Classroom Management. Both NBCTs and a non-NBCT matched sample scored above the norms established for the *TSES* and leadership positions assumed (Tschannen-Moran, Woolfolk-Hoy, & Hoy, 1998). However, the potential of NBCTs to have an impact on the non-NBCTs through collaboration, mentoring, and participation in the professional community was not measured by the TSES. As a documented requirement for certification, this might explain the similarities in the response statistics of the *TSES*. It does not address whether teachers who participated in the NBC process experienced an increased sense of self-efficacy and consequently improved as leaders as a result of their participation or came to the certification process with a strong sense of self-efficacy. In any case, National Board Certification can be used as a vehicle to identify self-efficacious teachers with leadership potential.

Certification also documents teaching self-efficacy based on Bandura's social cognitive theory as well. Bandura's social cognitive theory explores a person's attitudes, abilities, and cognitive skill which comprise the self-system. Self-efficacy is an essential part of the self-system or the belief in one's capabilities to organize and execute the courses of action required to manage prospective situations which "determines how people think, behave, identify goals and

map a course to accomplish those goals" (Bandura A. , 1995). Certification is an intense, time-intensive, voluntary professional development pursuit, requiring honest, deep self-reflection and hopefully institutes the resulting changes needed to improve practice.

The homogeneous nature of the samples provokes the need to question the diversity of both NBCTs and the general population of educators. According to the 2012-2014 Maryland Teacher Staffing Report, 18.8% of the 58,351 teachers represent minorities. Similarly, males represent only 22.3% of the teaching population. In the district studied, demographics are even more disparaging. The past and current administration and Board of Education at both the state and local level have identified recruitment of minority teachers as a concern and goal.

Limitations

The limitations of this study include the nature of data collected. As is true of other research about self-efficacy, all data collected in this study were self-reported. Responses might be influenced by a social desirability bias, in that participants tend to report what they believe a researcher wants to hear and in a manner that reflects positively on their abilities (Cook & Campbell, 1979).

Another potential limitation, inherent in survey research, is selection bias. The matched sample was generated by administrators, who could possibly skew the results. It is assumed that the matched sample would in every way be identical to the NBCT sample, except for certification. All participants were veteran, white, middle-class females, with at least a master's degree. While this also limits the ability to compare to a more diverse population, it could possibly explain the strong reported efficacy in the two samples. Both would have had the same access to professional development and leadership opportunities. Importantly, if NBCTs indeed

provide an efficacious environment as outlined in the Five Core Propositions including mentoring, or as Bandura indicates provide social modeling and persuasion, the end result would be a collegial cadre of competent and accomplished professionals with a strong sense of self-efficacy.

The results are germane to the district studied which limits any generalization to a larger population or another district. While the unequal rate of return between the two samples could possibly skew the comparisons, the atypical high return rate and narrow standard deviation also makes it challenging to determine differences among the groups.

Finally, the underlying question was not answered. Does a strong sense of teaching self-efficacy and assumption of leadership result from NBC, or do teachers who already have a strong sense of self-efficacy and leadership choose to certify?

Suggestions for Further Research

Administering the *TSES* prior to candidates prior to the process and then after the process would provide insight into any changes in self-efficacy related to the certification. Also other teacher variables such as performance and job satisfaction need to be explored in future research involving NBCTs. Since National Board Certification (NBC) strongly emphasizes collaboration within the professional community and promotes mentoring and teacher leadership, a comparison to a matched sample in a building where no NBCTs are employed would more accurately capture the comparative effect of perceived self-efficacy on the collective efficacy of school communities in which NBCTs serve. An investigation of the impact of NBCTs self-efficacy on the collective efficacy within the schools they serve would also bolster understanding of the effect of NBCTs. Perceived self-efficacy is linked to student self-efficacy and

achievement, teacher performance, and job satisfaction. An investigation of these variables would also add to an increased understanding of the impact of National Board certification.

Recommendations to the District

While both groups scored high on the TSES, it does not discredit NBC as a vehicle to identify highly qualified, efficacious teacher leaders who bring to the district a rich resource at a classroom level where the most effective changes are instituted. Continued support for this program allows for a professional development experience that fosters a reflective practice, teacher leadership, and collaborative school environment and greater accountability. Research supports NBCTs as respected change agents whose expertise leads school reform initiatives, new or struggling teacher when NBCTs serve as mentors, and as instruction and curriculum leaders within schools, (Cavalluzzo, 2004).

The means of recruitment of National Board candidates, accomplished via notice posted in all schools, lacks the means to address the recruitment of both males and minority teachers to participate. However, in actuality, the recruitment of candidates is majorly effected by the NBCTs within the district. Addressing recruitment and this concern with the current group of NBCTs would empower them to brainstorm solutions to the concern and enact a course of action to diversify.

Conclusion

The results of this study found no significant differences in the perceived self-efficacy and leadership of NBCTs and a matched sample of non-NBCTs. The non-significant results regarding teacher efficacy and leadership raise considerations in other directions. For instance

are there other variables that may lead a teacher to pursue certification and leadership positions? If so, how might teacher efficacy play a role in this pathway? Does recruitment reinforce the homogeneity of the group in the district and how could that concern be best addressed?

Non-significant results in the studied areas of teacher self-efficacy and leadership do not discredit the idea that there may be inherent differences between these groups or between NBCTs and other peers. If given the opportunity to restructure this research, I would add demographics items and change the way leadership statistics were tabulated and compared. An alternative to a single item is needed to accurately reflect leadership contributions. The addition of demographic items would support the decisions made by administrators and more clearly define the samples.

A qualitative approach may be ideal in understanding possible benefits of NBCTs in a school community beyond perceived self-efficacy and leadership. Since most secondary NBCTs are concentrated in one urban school, a comparison to the other urban school with no NBCTs might serve to more clearly capture the effect of NBCTs on collective efficacy.

APPENDIX A

Teachers' Sense of Efficacy Scale[1] (short form)

	Teacher Beliefs Directions: This questionnaire is designed to help us gain a better understanding of the kinds of things that create difficulties for teachers in their school activities. Please indicate your opinion about each of the statements below. Your answers are confidential.	How much can you do? Nothing		Very Little		Some Influence		Quite A Bit		A Great Deal
1.	How much can you do to control disruptive behavior in the classroom?	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)
2.	How much can you do to motivate students who show low interest in school work?	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)
3.	How much can you do to get students to believe they can do well in school work?	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)
4.	How much can you do to help your students value learning?	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)
5.	To what extent can you craft good questions for your students?	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)
6.	How much can you do to get children to follow classroom rules?	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)
7.	How much can you do to calm a student who is disruptive or noisy?	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)
8.	How well can you establish a classroom management system with each group of students?	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)
9.	How much can you use a variety of assessment strategies?	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)
10.	To what extent can you provide an alternative explanation or example when students are confused?	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)
11.	How much can you assist families in helping their children do well in school?	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)
12.	How well can you implement alternative strategies in your classroom?	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)

13. I have assumed the following leadership roles (check all that apply):

(1) None

(2) Student Achievement Specialist/Lead Teacher

(3) Department Chair

(4) Administrator

(5) Other (Please specify)

APPENDIX B

From: Anita Hoy [mailto:anitahoy@mac.com]
Sent: Monday, January 07, 2013 8:35 PM
To: Zentmeyer, April
Subject: Re: Permission to use the TSES/CE-Scale

You are welcome to use the scales in your research, but not for commercial purposes.

Anita

Anita Woolfolk Hoy, Professor
Educational Psychology & Philosophy
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COLLEGE OF EDUCATION AND HUMAN ECOLOGY

ANITA WOOLFOLK HOY, PH.D.

PROFESSOR
PSYCHOLOGICAL STUDIES IN EDUCATION

Dear April Zentmeyer

You have my permission to use the *Teachers' Sense of Efficacy Scale* in your research. A copy of both the long and short forms of the instrument as well as scoring instructions can be found at:

http://www.coe.ohio-state.edu/ahoy/researchinstruments.htm

Best wishes in your work,

Anita Woolfolk Hoy

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APPENDIX C

Spring 2014

Dear Teacher:

You are receiving this invitation because you are listed as a National Board Certified Teacher or have been selected as a match based on years of service and assignment.

I am inviting you to participate in a districtwide research project to study the perceived self-efficacy levels and teacher leadership of National Board Certified Teachers. This study will serve as the basis of my doctoral dissertation at the University of Maryland, College Park.

You will receive an invitation to complete the *Teacher Sense of Efficacy Scale* (*TSES*), a twelve item Likert-like scale with the additional request for information regarding any leadership opportunities you may have assumed via SurveyMonkey on May 16, 2014. The window for completion of the survey closes May 30, 2014. The survey should take less than fifteen minutes to complete. Your participation is completely voluntary and anonymous.

I appreciate your valuable time to participate. The survey is dependent on 100% return for the most accurate results. Please do not hesitate to contact me if you need further clarification at zentmapr@gmail.com or 301-992-5815. My advisor for this research is Dr. Dennis Kivlighan and can be contacted at dennisk@umd.edu. Thank you.

Sincerely,

April Zentmeyer
Doctoral Student
Leadership
School of Education
University of Maryland, College Park

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