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Impact on Student Learning: National Board Certified Teachers' Perceptions

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Abstract: The purpose of this study is to report National Board Certified Teachers' (NBCTs) perceived impact on student learning. The guiding research question for this study, "How do teachers perceive the influence of the National Board Certification process on student learning in their own classrooms?" was explored. A total of 496 NBCTs currently teaching in North Carolina public schools completed the survey questionnaire in which they responded to demographic questions, Likert item questions, and open-ended questions. More than 80% of the study's participants reported the certification process had positively influenced student learning in their classrooms. Thematic analysis revealed several reoccurring themes that NBCTs reported having impact on student learning in their classrooms. These included impact on academic achievement, improved teaching, and/or an increase of effective evaluation and assessment strategies.

Keywords: National Board Certification; teacher certification; teacher licensure; student learning; teacher perceptions

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Impacto en el aprendizaje de los estudiantes: Perspectivas sobre la Comisión Nacional de Certificación Docente

Resumen: El propósito de este estudio es informar sobre la percepción del impacto de la Comisión Nacional de Certificación Docente (por su sigla en inglés NBCTs) en el aprendizaje de los estudiantes. La pregunta de investigación que guía este estudio es "¿Cómo perciben los profesores la influencia del proceso de Certificación de la NBCTs en el aprendizaje de los estudiantes en las aulas de su país". Un total de 496 docentes que cuentan con su NBCTs en las escuelas públicas de Carolina del Norte completó la encuesta en la que respondieron a preguntas demográficas, preguntas usando escalas Likert y preguntas abiertas. Más del ochenta por ciento de los participantes del estudio informó que el proceso de certificación ha influido positivamente en el aprendizaje de los estudiantes en sus clases. Análisis temático reveló varios temas recurrentes que los docentes NBCTs reportaron influyen en el aprendizaje de los estudiantes, incluidos rendimiento académico, mejora de la enseñanza, y/o un aumento de estrategias de evaluación y evaluación eficaces.

Palabras clave: Comisión Nacional de Certificación Docente; certificación de maestros; licenciatura docente; aprendizaje de los estudiantes; percepciones de maestros

Impacto sobre a aprendizagem dos alunos: Perspectivas sobre a Comissão Nacional de Certificação de Professores

Resumo: O objetivo deste estudo é relatar sobre as percepções de impacto da Comissão Nacional de Certificação de Professores (sigla em Inglês NBCTs) nos aprendizagens dos alunos. A questão de pesquisa que orientou este estudo foi "Como é que os professores percebem a influência do processo de certificação NBCTs na aprendizagem dos alunos nas salas de aula do seu país". Um total de 496 professores têm seus NBCTs nas escolas públicas da Carolina do Norte responderam as perguntas sobre dados demográficos, perguntas usando uma escala Likert e perguntas abertas. Mais de oitenta por cento dos participantes do estudo relataram que o processo de certificação tem efeitos positivos na aprendizagem dos alunos em suas aulas. A análise temática revelou vários temas recorrentes que os professores NBCTs indicaram que influenciam a aprendizagem dos alunos, incluindo desempenho acadêmico, melhoras na educação, e/ou um aumento de estratégias de avaliação e de avaliação eficazes.

Palavras-chave: Comissão Nacional de Certificação de Professores; certificação de professores; grau de ensino; aprendizagem do aluno; percepções dos professores

Introduction

The National Board for Professional Teaching Standards (NBPTS) is rooted in the premise that higher standards for teachers mean better learning for students. Over 30 years ago, the United States National Commission on Excellence in Education (US NCEE, 1983) issued a landmark report titled *A Nation at Risk*, identifying problems in education with the purpose of invoking reform. At the time, the country was not seen as ranking first in commerce, industry, science, and/or technology, and it was in competition with other nations, such as Japan for automotive industry, Germany for tools, and Korea for steel mills. Throughout history, American schools have been seen as the place to improve society (US NCEE, 1983), so it was thought that if teachers and all aspects of teaching were scrutinized, including the recruiting, retention, and evaluation of teachers in schools, perhaps the quality of student achievement would be improved and the U.S. could regain its global competitive edge.

Thus, in 1986, the Carnegie Forum on Education responded to this report by organizing policy makers, business leaders, teacher associations, and educators to write *A Nation Prepared: Teachers for the 21st Century*. This document called for higher standards and the revival of the teaching profession. A task force proposed a plan to develop, retain, and reward accomplished teachers through advanced certification. Based on this framework of ideas, the National Board for Professional Teaching Standards (NBPTS) was created. Just as other professions (such as physicians and lawyers) have ways to distinguish experts in the field, the task force decided similar tests and evaluations was needed that could serve as the basis for all teaching area standards.

NBPTS is based on Five Core Propositions that define accomplished teaching. The propositions are: (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, and (5) teachers are members of learning communities (NBPTS, 2014a). The Five Core Propositions are the basis for identifying teacher quality across grade levels nationwide. All 29 certificate areas are based on these Five Core Propositions.

For approximately 30 years, the National Board Certification (NBC) process has been one of the few reform efforts to address the call to improve teaching quality. In some states, achieving NBC is the only way for a teacher to earn a pay raise, gain respect from community, and earn leadership opportunities in the classroom and community. To pursue NBC, teachers must have obtained a baccalaureate degree, hold a valid teaching license, and have taught three or more years in a public or private school. The rigorous certification process consists of the completion of four components: written assessment of content knowledge, reflection on student work samples, video and analysis of teaching practice, and documented impact and accomplishments as a teaching professional (NBPTS, 2014b). The fee for NBC is \$1,900 and the certification is awarded for a period of 10 years; after that time, a National Board Certified Teacher (NBCT) can renew certification by submitting a Profile of Professional Growth.

Since the NBPTS was created, there have been both critics and supporters of the NBC process. Over the years, supporters have praised the certification as a “symbol of professional teaching excellence” (Buday & Kelly, 1996). In addition, supporters believe certification legitimizes the hard work of teachers and acknowledges the complexities of the teaching profession. National Board advocates believe the NBPTS can make an important contribution to the development of teachers who are prepared to teach in the 21st century, as the rigor of the NBPTS can improve the quality of teaching taking place in classrooms (Darling-Hammond, 1999). There is much potential for NBPTS to foster and aid real education reform through the leadership potential of the NBCTs as mentors, coaches, and school leaders (Boyd & Reese, 2006). Moreover, the NBC process has been suggested as a means of attracting and retaining highly qualified teachers (NBPTS, 2010); it has the potential to encourage bright college graduates to consider a career in teaching and motivate accomplished teachers to continue careers in the classroom (Buday & Kelly, 1996).

Critics of the NBPTS point out the potential for a negative hierarchy that may develop in the profession between teachers who are certified and those who are not (Boyd & Reese, 2006). Others find fault in the NBC process because of the fee and extensive time required by teachers to enter the certification process. Hess (2004) claims that NBPTS is “an exhausting, expensive process that wastes time and money while suggesting the measure of teacher quality is not whether students learn but whether teachers write sufficiently passionate essays about their own ‘commitment’ and ‘reflectiveness’” (p. 130). Likewise, Boyd and Reese (2006) write that NBC is pricey and is not successful in improving teaching and student achievement.

National Board remains relevant today for a number of reasons. First, it is a valid, rigorous professional development experience where teachers can critically examine their own practice. Second, the certification process promotes accomplished teaching. Third, as a result of NBC, teachers are often offered leadership opportunities, and finally, in some states such as North Carolina, teachers can advance financially. As some states are facing teacher shortages and experiencing difficulty recruiting and retaining teachers in the profession (Petty, Fitchett, & O'Connor, 2012), NBC can serve as a way to recruit and retain highly qualified teachers.

Many teachers feel NBC is a valuable professional development experience; however, research regarding perceptions of those achieving certification and their experiences with the process is limited. NBC allows teachers to be professionally recognized without leaving the classroom, yet often the voices of classroom teachers are omitted from research and relevant policies. The certification process provides opportunities for teachers to study their own teaching practice and its impact on students learning outcomes; however, detailed analyses of such impact reported by teachers are not frequently found in literature pertaining to the NBPTS.

The framework guiding this study is the aforementioned Five Core Propositions of NBPTS, and also the construct of teacher efficacy, understood as being how teachers perceive their ability to impact student learning and motivation. As explained by Goddard, Hoy, and Hoy (2000), teacher efficacy is the perception of one's own capabilities to organize and execute a course of action required to produce a positive impact or result. For decades now, researchers have established strong connections between teacher efficacy (a self-referent perception) and teacher behaviors that foster student achievement (Goddard, Hoy, & Hoy, 2000). Thus, the purpose of this study is to examine and describe how North Carolina NBCTs perceive their impact on student learning, considering elements of both the NBC process and the construct of efficacy. The following research question was explored: How do teachers perceive the influence of the NBC process on student learning in their own classrooms?

Literature Review

The reported influence on student learning resulting from the NBC process can be manifested in a number of ways, both directly by means of evidence of student gains in achievement scores and indirectly through changes of teachers' pedagogical practices, which in turn affect students' learning. As a result, numerous studies have employed a variety of methods in attempt to measure the influence of NBC in the classroom. While some studies report positive gains, in several others, teachers have reported no influence or evidence of impact on student learning at all. Often these participants posit that instead of changing or transforming their practice, the NBC process simply validated or affirmed their already-established beliefs and pedagogies (Chittenden & Jones, 1997; Hunzicker, 2010; Lustick, 2002; Lustick & Sykes, 2006). Lustick's (2002) study more specifically analyzes NB candidates by the perceptions and experiences they possess entering the process, explaining that those whose beliefs are not in alignment with the NBPTS stand little to gain from the experience, yet those whose beliefs either are in concordance or choose to adapt their position are more likely to achieve certification and report evidence of learning. While some make this argument that NBC has little significance, because our study explores the data provided by teachers themselves regarding the impact of NBC, a more thorough review of literature examining the direct and indirect effects of NBC follows.

In order to evaluate the direct impact of NBCTs on student learning, a number of large-scale quantitative studies have emerged to analyze student achievement scores, yet these researchers often conclude that the findings of the impact of NBC on learning gains are largely varied and thus

inconclusive, despite efforts to control variables such as student characteristics and school settings (Cavalluzzo, 2004; Clotfelter, Ladd, & Vigdor, 2007; Goldhaber & Anthony, 2004, 2007; Harris & Sass, 2009; Vandevoort, Amrein-Beardsley, & Berliner, 2004). For example, Goldhaber and Anthony (2004) studied 416 North Carolina elementary school teachers in the process of obtaining NBC and found future and current NBCTs to be more effective at increasing student achievement, advocating the effectiveness of the NBC process for identifying highly-qualified teachers, yet they note “the statistical significance and magnitude of the ‘NBPTS effect,’ however, differs significantly by grade level and student type. (p. 4). Additionally, they report variances in teacher effectiveness based on their position in the certification process, and further studies leave them unable to explain differences in effectiveness evident in NBCTs and their respective cohorts (Goldhaber & Anthony, 2007). Vandevoort, Amrein-Beardsley, and Berliner (2004) likewise analyzed student achievement data across 35 elementary classrooms in 14 Arizona school districts and also report NBCTs’ students scoring higher in three-quarters of their comparisons, with learning gains equaling close to a month of instruction; however, Cavalluzzo (2004) claims “the analyses did not take into consideration differences in student attributes that may correlate with NBC” (p. 7). Thus, in her own investigation, Cavalluzzo (2004) employed a more methodologically specific multivariate framework that takes under consideration the influence of student characteristics, teacher qualities, and school environments. Ultimately, she concludes similarly that comparisons report high school students in Florida with NBCTs as showing greatest academic gains, with statistically significant evidence supporting higher outcomes of these students with NBCTs over those without.

Most recently, Belson and Husted (2015) take a different approach to measuring the relationship of NBC and academic achievement by analyzing its correlation to a national assessment, the National Assessment of Educational Progress (NAEP). They found that “a larger percentage of NBCTs administering the Reading or the Math NAEP assessments leads to a higher state average scores on these NAEP exams” (p. 15), suggesting that a broader perspective provides indication of NBCTs’ direct impact on their students’ learning as well as potentially indirectly on the achievement of other teachers NBCTs mentor and influence in their building. Similarly, Anagnostopoulos et al. (2010) describe the greater influence of NBC at schools:

The NBPTS, however, aspires to more than identifying effective teachers as measured by standard achievement tests. It seeks to reorder teachers' work and collegial relations by introducing a status distinction and promoting teachers' efforts to improve instruction beyond their individual classrooms. (p. 339)

Their findings verify previous evidence that NBC does impact the number of teachers helped with instructional matters, as Frank et al. (2008) report that NBCTs assist more colleagues than their noncertified counterparts. This conception of analyzing the spillover effect of professional development (Sun, Penuel, Frank, Gallagher, & Youngs, 2013) brings yet another dimension of analysis of the potential positive impact of the NBC process on teachers and students.

Conversely, research also points to evidence that NBC does not positively impact student learning. Also studying NBCTs in Florida over a four year period, Harris and Sass (2009) label the efficacy of NBC as “questionable”, positing that

the only NBCT coefficient that is statistically significant is the pre-certification impact of NBPTS-certified teachers on reading achievement for students receiving free or reduced price lunches. In general, we find that prior to certification, future

NBCTs are no more effective in raising student test scores than are other teachers who are never observed to become NBCTs. (pp. 77-78)

Further convoluting the issue studying teachers in North Carolina, after providing quantitative data of coefficients that suggest teachers with NBC are more effective than their non-certified peers, Clotfelter, Ladd, and Vigdor (2007) note: “However, from these basic regressions we cannot tell whether this greater effectiveness is because the teachers who become Board certified are the more effective teachers to begin with or whether the rigorous process of Board certification makes them better teachers” (p. 28). Also studying the impact of NBCTs in North Carolina, Sanders, Ashton, and Wright (2005) examine reading and math scores of fourth and eighth graders in the state’s largest two school districts, Wake and Charlotte-Mecklenburg, and did not find students of NBCTs having “significantly better rates of academic progress than students of other teachers” (p. 2). Clearly, drawing a distinct correlation between NBC and student test scores is not a simple task and one that has been debated since the program’s inception.

Besides analyzing direct evidence of student learning in achievement levels, several studies have utilized surveys and interviews to explore with more detail how the NBC process affects learning in the classroom indirectly through changes in the delivery of instruction. Frequently noted by participants is the improved practice of reflection and analysis, upon both pedagogical approaches and philosophical beliefs about teaching (Chittenden & Jones, 1997; Hunzicker, 2010, 2011; Lustick, 2002; Park & Oliver, 2008; Sato, 2000; Tracz et al., 1995; Tracz et al., 2005). As a “tool for reinforcement and refinement” (Hunzicker, 2010), teachers develop the habit of questioning themselves about their instructional decisions and engage in more purposeful planning (Park & Oliver, 2008). Tracz et al. (2005) explain that “the concept of reflection, to truly examine teaching practice, is intricately intertwined with the power to make decisions, to change what happens in the classroom, and to increase learning” (p. 47). Providing evidence of being a reflective practitioner is pervasive throughout the portfolio creation process of NBC; thus, these studies confirm the value and impact of refining such skills.

Also well documented in NB literature are more specific examples of the pedagogical changes teachers choose to make. Teachers report a shift in their role as the primary conduit of learning towards a less-intrusive facilitator role; classrooms become more student-centered as children engage in open-ended projects and tasks, relying on peer collaboration and dialogue to construct learning (Hunzicker, 2010). This change of methods is particularly relevant in the discipline of science, where teachers note an increase in use of inquiry-based learning, emphasizing the need for hands-on opportunities for students to take an active role experimenting with concepts and scientific principles (Lustick & Sykes, 2006; Park & Oliver, 2008). Again, this documented shift in pedagogical practice is well-aligned to NBPTS.

Finally, the NBC process is reportedly tied to student learning as teachers develop an improved understanding of the students in their classrooms. Participants voice an increased awareness of differences among learners and a heightened respect for student individuality as a result of participating in NBC (Hunzicker, 2010, 2011; Park & Oliver, 2008; Tracz et al., 2005). As a result, teachers expand their instructional knowledge base by adapting instruction to address various learning styles and meet all students’ needs (Mitchell, 1998). Echoed in the NBPTS is an expectation that accomplished teachers effectively manage and monitor student learning, respecting the diverse and individual needs of learners, so improved teaching practices relating to a better knowledge of students is a likely result of the NBC process.

Closely tied to teachers’ understanding of diverse student needs is the ability to effectively diagnose and manage those learning needs and goals; many teachers explicitly express a change or

improvement in their use of assessments in the classroom to improve student learning outcomes (Loeb, Elfers, & Plecki, 2010; Lustick & Sykes, 2006; Sato, Wei, & Darling-Hammond, 2008; Tracz et al., 2005). As they gain a better understanding about the various forms of assessments, teachers shift their view of the purpose of assessments from one of strictly summative function, producing grades at the end of a unit or marking period, to one of continuous, formative support in monitoring students' mastery levels or acquisition of knowledge and skills (Lustick & Sykes, 2006; Park & Oliver, 2008; Sato et al., 2008). As a result of the NBC process, teachers better utilize diagnostic assessments to identify students' strengths and weaknesses, then to intentionally design and modify instruction tailored specifically to the individual's needs (Hunzicker, 2010; Sato, et al., 2008). By better integrating diverse assessments and systems of evaluation with daily teaching practices, teachers develop systematic methods of attending to student progress and can provide evidence of student growth and learning (Lustick & Sykes, 2006; Sato et al., 2008). Such systems are integral parts of effective teaching, connecting teachers' relationships and understanding of their students, their planning of clear instructional goals, and the continuous documentation and communication of levels of learning with students, their parents, and other teachers.

Methods

This study involved the use of qualitative research methods in order to address the study's analytic goals of determining perceptions of NBC teachers regarding certification and student learning. First, participants for this study were recruited through email via eight Regional Coordinators for NBC in North Carolina. These coordinators sent an invitation to all NBCTs in their respective regions. This invitation included a link to an anonymous survey. Of the 115 school districts in North Carolina, NBCTs in 46 districts participated in the study, representing 40% of school districts in the state. The majority (63%) of participants was from rural schools, 10% of participants reported an urban setting, and 27% identified their school as suburban. The majority of participants (85%) graduated from traditional education teacher preparation programs while 15% entered the teaching profession via lateral entry. The various certification areas of NBC are represented in this sample with the highest relative frequency (34%) of the participants holding a Generalist certificate. The participants' mean years of classroom teaching experience was 18.66 years.

The study utilized a sample of 496 NBCTs from the state of North Carolina. Regional directors invited all NBCTs from their respective regions. Only NBCTs currently teaching were invited to participate since the study was intended to examine perceptions of how the certification process has influenced student learning.

The researchers utilized a 42-question survey that they developed themselves. This survey contained 15 questions regarding demographics, 20 Likert item questions based on the Five Core Propositions in which teachers were asked to rank themselves on items pre and post NBC (see Appendix), and seven open-ended questions. A 5-point Likert scale was used for 20 of the survey items. When asking about how the Five Core Propositions were rated before pursuing NBC and after obtaining NBC, a selection of five denoted "strongly agree" while a one denoted "strongly disagree". The data analyzed for this research study included demographic information and one of the open-ended responses.

A total of 496 NBCTs who are all currently teaching in North Carolina public schools completed the survey electronically in Spring 2014 and submitted the survey via a secure link. In completing the survey, participants were assured that all responses would be anonymous. Regional directors had a list of NBCTs in their region. These lists were not shared with researchers. Rather,

the regional directors sent the survey request directly to NBCTs. The responses of NBCTs were not tied back to individual participants. Furthermore, results were presented in a way that did not allow any individual participant to be identified by name, school, or otherwise. For example, quotes from individuals' responses to open-ended questions were used only if they did not reveal any information that might uniquely identify the participant. If the participant mentioned his or her school name or city name, that information was not included in the presentation of study results.

The data collection protocol for this study was based on Dillman's Total Design Method (TDM) (Dillman, 2000). The TDM integrates a number of techniques to encourage survey response, specifically the use of multiple follow-up attempts to convey the importance of participation. The researchers sent a letter to the Regional Directors that was sent out to potential study participants. The letter included the following information: who is conducting the study, why the individual was chosen to participate, the time commitment in completing the survey, the purpose of the study, and a link to participate in the survey. The researchers included names, email addresses, and telephone numbers in case any participant had questions or concerns about the survey or overall study. After a two-week period had passed, a reminder email was sent by the Regional Directors with an additional follow-up sent a week later.

As with most research studies, this study had some limitations. First, the study focuses on teachers that have achieved NBC. Those that did not pass NBC were not surveyed. This could be a limitation as their responses could vary from the teachers that achieved certification. Second, since some teachers chose not to respond to the survey, there is a possibility that results could be biased. This bias will be present if participants differ from non-participants on the survey measures. Third, self-reported data are subject to participant errors in comprehension, recall, and misreporting of socially desirable behavior. People may convey themselves as they think a good teacher should be rather than reporting their true thinking. This is termed social desirability (Dillman, 2000). Finally, participants could be recently certified or they could have certified up to 10 years ago. This could influence their responses to survey questions.

Data Analysis

The open-ended question was coded using thematic analysis (Braun & Clarke, 2006). Various levels of analysis occurred. Initially, the researchers evaluated the data independently. Next, the researchers compared their analyses and determined any inconsistencies in their analyses. For example, one researcher viewed one comment as related to teaching while the other two researchers saw the comment more related to assessment strategies used. These inconsistencies were discussed and consensus was reached. This method of analysis allowed for the establishment of inter-coder reliability (Neuendorf, 2002). The initial analysis generated several emerging codes that demonstrated reoccurring themes. The researchers discussed these codes and revised them as needed throughout the entire data set. Then, the emerging themes were combined and categorized into larger themes (Aronson, 1994). The researchers then corroborated these themes. The final themes embodied a consistent pattern in responses across all participants. The primary themes of this study are: 1) positive impact on students, 2) improved teaching, and 3) effective evaluation and assessment strategies. The frequencies of these themes were tallied and are presented in Table 1 to assist in the interpretation of the findings (Wade, 1993). Participants' responses to open-ended questions asked on the survey were further analyzed and included in the findings section to offer how the NBCTs perceive their own impact of NBC on student learning. Finally, in determining themes, we recognize that our small sample size, in relation to the total number of NBCTs in North Carolina, is a limitation that confounds the generalizability of this study. As stated earlier, the guiding research

question for this study is: How do teachers perceive the influence of the National Board process on student learning in their own classrooms?

Findings

The participants of this study were asked through an open-ended survey question how they perceived the influence of the NBC process on student learning in their own classrooms. Their responses varied but fell under the themes of improved teaching, positive impact on students, and effective evaluation and assessment strategies. Table 1 displays the frequency and percentage of each theme.

Table 1

What do teachers report discovering about the National Board process that has influenced student learning in their own classrooms?

	Frequency	Percentage
Improved Teaching	321	64.7
Positive Impact on Students	84	16.9
Effective Evaluation and Assessment Strategies	64	12.9

Note: Percentages do not equal 100. Some participants did not provide a response to the question and some provided two responses.

Improved Teaching

Improved teaching was mentioned most frequently by classroom teachers when asked through an open-ended question on the survey how they perceived the influence of the NBC process on student learning in their own classrooms. Of the 496 participants, 321 (64.7% of participants) said that their teaching improved because of the NBC process. Several participants commented on how they are more attentive to students' needs after going through the NBC process. One NBCT who entered the teaching field laterally seven years ago commented, "I am more observant of student needs, and I am more aware of how I can make connections for students. I analyze my teaching and student performance to make decisions for future instruction." Similarly, a NBCT with 23 years of experience from a rural county in North Carolina said, "After my NB, I am doing a better job of differentiating to meet varied needs of my students. I am managing time better . . . I'm left with more time to address needs and help students extend their learning." In relation to student needs, a NB Generalist with 26 years of experience said,

Since NBC, I am more thoughtful about the process of student learning. I better understand the misunderstandings and misconceptions on students' learning in my certificate area. I am also more knowledgeable of how to individualize instruction to better suit the needs of my students.

Also related to the theme of improved teaching, several participants commented on the reflective nature of the NBC process and how this has influenced their current instructional preparation and

delivery. A NBCT certified in Middle Childhood Mathematics with 33 years of teaching experience stated, "I definitely look at things differently and use more modeling and discovery approaches to learning since I became NB certified? I ask more questions than give answers." Likewise, another NBCT certified in Adolescence and Young Adulthood Career and Technical Education said, "I have spent more time evaluating my teaching strategies to help me make my lessons more engaging and student focused." "I spend a lot of time reflecting and preparing a variety of ways to get them to engage as a result of completing the process for NB," commented a NBCT Early Childhood through Young Adulthood Exceptional Needs Specialist.

These NBCTs also remarked on the improvement of their communication with parents, helping to improve their teaching. "I believe working for certification encouraged me to be more systematic and effective in creating two-way communication with parents," mentioned a traditional education graduate with NB Adolescence and Young Adulthood Social Studies certification. "I seek the support for parents. I am constantly thinking, reflecting and planning ways to get and keep them involved," commented a sixth grade NBCT from rural North Carolina.

Positive Impact on Students

The second most frequent theme of the responses by NBCTs when asked how they perceived the influence of the National Board process on student learning in their own classrooms was positive impact on students. Of the 496 participants, 84 (16.9% of participants) said that as a result of achieving NBC, they saw evidence of student learning gains, as indicated by improved scores on standardized tests, portfolios, greater student academic growth, and increased engagement in learning. Scores on standardized tests and increased academic achievement are important to teachers, students, parents, and administrators. As such, the recognition of improved scores as a result of NBC is important to note. One participant said, "The test scores of students showed improvement. In addition, my students demonstrated a change in attitude for learning science because of the way I delivered my content (pre- and post-survey data supported this)." A similar comment from a ninth grade NBCT who certified in 2009, "My end of semester test scores have been incredible and my students' overall learning has increased substantially." A Middle Childhood Generalist remarked, "I have seen greater student achievement in reading and mathematics. This has been evidenced through portfolios and mandated testing."

Participants also mentioned an increased level of student engagement in learning as a result of their achievement of NBC. "Students appear more engaged in my lessons and walk away with better learning and understanding," noted a Kindergarten NBCT with 14 years of classroom teaching experience. "I'm able to get students to explain their thinking better and to look at topics more critically," commented a 2011 NBCT who teaches in an urban setting. A sixth grade NBCT who has renewed her certification mentioned the relationship between the engagement of students and increased test scores: "Student scores improved with the focus shift away from teacher directed to student directed."

A final comment worth noting from another NBCT who entered the profession laterally is as follows: "My state test scores have improved, but more importantly, the quality of student learning has improved." This comment emphasizes the importance of the quality of learning, an aspect that NB highlights.

Effective Evaluation and Assessment Strategies

Effective evaluation and assessment strategies was the third most frequent theme of the responses by NBCTs when asked how they perceived the influence of the National Board process on student learning in their own classrooms. Of the 496 participants, 64 (12.9% of participants) said that as a result of achieving NBC, they were better equipped to implement effective evaluation and

assessment strategies. The participants of this study commented on their improved use of formative assessment, increased ability to make data-based decisions regarding student learning, enhanced ability to analyze students' strengths and weaknesses, and improvement in the area of developing assessments and rubrics.

As a result of NBC, several teachers mentioned that they have improved their use of assessment. One Middle Childhood Generalist who recertified in 2013 said, "I feel that I am better at using formative and summative assessments to identify individual student needs and meet such," while a Early Childhood through Young Adulthood Reading/Literacy NBCT said, "Following my NB process, I had a better grasp of monitoring my students for improvement and using that monitoring to guide my instruction. I was also more aware of providing opportunities to integrate my instruction into other areas." A final comment from a 37-year veteran who recertified in 2010 was,

The whole process made me remember how it was when I was taught how to teach systematically and the importance of writing down the data, not just reflecting and keeping it in my head or in a journal. By really collecting data and reviewing it in a systematic manner, I have seen much progress in not only my teaching but my students . . . which is the real reason for teaching, right?

Other participants of the study discuss their preparation after NB in analyzing data and student learning. "I feel better prepared to analyze student learning and data as a result of the NB process. This has allowed me to more effectively group and individualize my students' program," commented one fifth grade NBCT. Similarly, an Adolescence and Young Adulthood English NBCT from a suburban setting said, "The (NB) process helped me to look at student growth on an individual level in a way that previous professional development did not. I feel as though this influences every aspect of my teaching." A third comment from a Kindergarten NBCT from a suburban setting that is worth noting follows:

I think NB helps teachers learn how to prove where students are instead of just guessing. I can always show you where students are, where their holes in learning are based on data, and develop learning plans based on their individual needs.

Other important aspects of evaluation and assessment include providing student feedback, developing assessments and rubrics, and modifying instruction. These comments support the importance of these aspects. "I also spend more time providing students feedback and using formative assessment to assess student learning since gaining NBC," noted a seventh grade mathematics NBCT who certified in 2011. "I am now better at creating rubrics and having multiple similar assessments to provide students more opportunities to see growth," mentioned a 10th grade English NBCT with 12 years of teaching experience. "I have learned how to assess student learning more effectively and make changes to lessons and activities to better serve my students," stated an eighth grade science NBCT.

Even though 87.7% of participants reported that they have observed evidence of increased student learning in their classrooms as a result of their pursuit of NBC, there were 12.3% (n=60) that said they did not see evidence of student learning as a result of the NB process. Several teachers mentioned that they were not sure if the NB process helped in the improvement of student learning or if it could be a different factor or a combination of factors. As such, one NBCT from a suburban setting said, "There are so many changes that I have made over the years, especially in the last few

years, including the NB process that have helped me in my profession. NB is just one piece of that puzzle.” Similarly, a mathematics NBCT from a suburban high school said, “I’m always searching for ways to improve student learning. I can’t place credit on any one process.”

Other participants said that they might not be able to tie NB process to student learning but they could mention the ways in which it impacted them as teachers. “Honestly, I’m not sure if it actually improved student learning. I know I improved as a teacher, but I can’t attach that improvement to the NB process. It did make me think more about how I approach teaching,” noted an English NBCT from a suburban setting. This reflection speaks to the debate of NBC’s direct and indirect impact on student learning.

Many participants felt that they really had not changed much since the NB process. They felt that they were already doing what good teachers do so they could not comment on the impact on student learning. “I was already teaching in a way that is expected by NBPTS, so I did not alter what I was doing significantly,” said a Kindergarten NBCT with 21 years of experience. A related comment from a 21-year Exceptional Children’s Teacher was, “I felt that I was a good teacher before the NB process. My vocabulary and knowledge increased during the process but my teaching skills were already honed.” A sixth grade NBCT from a rural middle school said, “Going through the NB process did not change my teaching style. My classroom was focused on improving student learning prior to NB and still is.”

Conclusions and Implications for Future Research

The findings of this study describe the many different ways in which NBCTs feel they can positively contribute to improvements in pedagogical practices and the classroom environment, which can indirectly affect student learning. This study shared how teachers *perceived* their impact, so the findings in no way confirmed there is an impact on student learning. However, the NBCTs of this study reported increased understanding their learners resulting in changes in pedagogical practice. They described an increase in their reflection and analysis of their teaching leading to data-based decision making in efforts to improve instructional methods and increase student understanding. These NBCTs learned various approaches to engaging students. The NBC process helped them identify what student engagement should look like in the classroom. NBCTs also discovered various approaches to assessment and evaluation, helping them to better understand the learning of the students in their classrooms. Previous studies attempting to directly correlate NBC with student achievement offer confounding evidence plagued by the numerous variables affecting test scores and growth. Alternatively, studies such as this attempt to give voice to the teachers themselves in understanding the impact of NBC in the classroom. The descriptions provided are given the teachers’ viewpoints and are descriptions of how they perceived their students may have been influenced by any changes made in their teaching as a result of participating in the certification process. An overwhelming majority of teachers (87.7%) reported a positive influence on student learning. Teachers also recognized effective practices were supported and encouraged to be continually utilized in the classroom as a result of participating in certification process. Thus, the debate of whether or not NBC improves the quality of teaching or simply identifies that which already exists is irrelevant; the value lies in its promotion of such practices so that they are proliferated across the nation and more classrooms experience the benefits described. Additionally, with NBCTs reporting such transformational experiences improving their practice, NBC serves as a model for helping teachers work towards exemplary standards by promoting professional development; this work can be aligned with evaluation instruments to increase teacher quality in the field (Accomplished California Teachers, 2015). With increased emphases placed on teacher

effectiveness and accountability, there is a critical need for teacher professional development that goes beyond short-term participation. Sustained engagement is necessary to yield positive impact on teacher effectiveness and indirect effects on student learning outcomes. It is difficult to identify a professional development experience other than NBC that yields such high gains as reported by participants of this study.

The findings from this study could have implications related to teacher recruiting and retention. Amrein-Beardsley (2012) argues that to recruit and retain high-quality teachers at high-needs schools, policies should consider financial incentives. Humphrey, Koppich, and Hough (2005) also report that NBCTs are not equitably distributed among schools of various contexts; often they are not present in high-poverty, high-minority, low-performing schools. States can and should enact policies that are designed to encourage NBCTs to choose low-performing schools and to grow NBCTs already working in such schools. States can target candidate support programs for teachers who want to teach in low-performing schools. Further studies are needed to measure the impact of NBCTs on learning in low-performing schools.

While this study reported the perceived impact on student learning of nearly 500 teachers in North Carolina, further research is needed to investigate the reported impact on student learning by NBCTs across the country. Since there is a gap in the literature related to NBCTs' impact on student learning, more research is needed to address any connection between teacher effectiveness, achieving NBC, and the impact on student learning. Additionally, research exploring the longevity of impact of the NBC process would be a valuable contribution to the NB literature, especially as it relates to the strengthening of pedagogical practices over time and improvement of reflective practice over time. There is also potential for additional research in regards to the Five Core Propositions and the construct of teacher efficacy. As demonstrated in this study, teachers who achieve NBC do identify ways in which the process supports good teaching practices and reflective analysis of those practices. This has led many of these teachers to make connections between their practice and student learning. As this study is neither conclusive nor representative of all NBCTs, it does offer perceptions of NBCTs from North Carolina and begins a conversation around these perceptions.

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Appendix

The survey questionnaire utilized in this research study contained 20 Likert item questions based on the Five Core Propositions of the National Board for Professional Teaching Standards in which participants were asked to rank themselves on items pre and post their achievement of National Board Certification. Five questions are related to Core Proposition 1 which states that “Teachers are committed to students and their learning”. Three questions are related to Core Proposition 2 which states that “Teachers know the subjects they teach and how to teach those subjects to students”. Core Proposition 3 is “Teachers are responsible for managing and monitoring student learning”. Four questions are related to this proposition. Core Proposition 4 states that “Teachers think systematically about their practice and learn from experience”. Three questions are related to this proposition. Five questions are related to Core Proposition 5 which says, “Teachers are members of learning communities”.

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