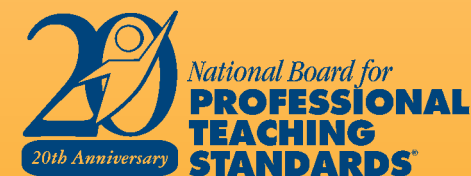


# A Research Guide on National Board Certification<sup>®</sup> of Teachers



1525 Wilson Boulevard, Suite 500  
Arlington, VA 22209  
Tel: (703) 465-2700  
1-800-22TEACH | [www.nbpts.org](http://www.nbpts.org)





## MISSION STATEMENT

THE MISSION OF THE NATIONAL BOARD FOR PROFESSIONAL TEACHING STANDARDS IS TO ADVANCE THE QUALITY OF TEACHING AND LEARNING BY:

- Maintaining high and rigorous standards for what accomplished teachers should know and be able to do,
- Providing a national voluntary system certifying teachers who meet these standards, and
- Advocating related education reforms to integrate National Board Certification in American education and to capitalize on the expertise of National Board Certified Teachers.

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## *The Five Core Propositions*

- *Teachers are committed to students and their learning.*
- *Teachers know the subjects they teach and how to teach those subjects to students.*
- *Teachers are responsible for managing and monitoring student learning.*
- *Teachers think systematically about their practice and learn from experience.*
- *Teachers are members of learning communities.*

## FROM THE NBPTS PRESIDENT

MAY 2007

THE NATIONAL BOARD FOR PROFESSIONAL TEACHING STANDARDS® (NBPTS) HAS ALWAYS WELCOMED SCRUTINY OF THE NATIONAL BOARD CERTIFICATION® PROCESS AND THE IMPACT THAT NATIONAL BOARD CERTIFIED TEACHERS® (NBCTs) HAVE ON TEACHING AND LEARNING. AS A RESULT, IN THE 20 YEARS SINCE NBPTS WAS FOUNDED, NATIONAL BOARD CERTIFICATION HAS BECOME ONE OF THE MOST HEAVILY RESEARCHED AREAS IN THE TEACHING FIELD.

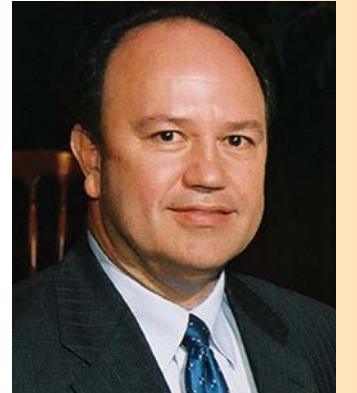
Scores of studies, research projects, and other reports have reviewed and evaluated various aspects of National Board Certification. These efforts have covered such areas as the impact of National Board Certification on student performance, the influence of the process on teacher retention, and the quality of assignments planned by National Board Certified Teachers. This report provides summaries of dozens of these studies.

We are pleased to note that most of this research finds that NBCTs and the related certification process have positive impacts overall on teaching quality and student achievement. The research also notes that many teachers who become National Board Certified also become mentors, teacher trainers, and instructional leaders, and assume other leadership positions in their schools. These results, we believe, underscore the added value that results from even one National Board Certified Teacher in a school.

We have learned a great deal from this research — not all of which is positive. For example, researchers find that National Board Certified Teachers are less likely to work in low-income schools than in more affluent schools. African American and Hispanic teachers are less likely to earn the certification than their white and Asian counterparts. School administrators do not always recognize the value of National Board Certified Teachers, thus often failing to use them strategically in ways that could raise student achievement, benefit other teachers, and influence school-wide reform. NBPTS is drawing on these findings to bolster the National Board Certification process, address underrepresentation of minority candidates, and create programs to enhance the presence of NBCTs in all schools, especially in high-need schools.

We believe this report makes the case that National Board Certification is playing an important role in raising the quality of our nation's teaching force and classroom instruction. We look forward to using this information and the findings of future research to improve and expand the influence of National Board Certified Teachers, the certification process, and the overall work of the National Board.

**JOSEPH A. AGUERREBERE, ED.D.**  
*President and CEO*  
 National Board for Professional Teaching Standards



***National Board  
Certification is  
perhaps the  
most-studied  
intervention in the  
education field.***

## INTRODUCTION

IN 1987, THE NATION'S EDUCATION LEADERS AND POLICYMAKERS RESPONDED TO GROWING CONCERNS ABOUT THE QUALITY OF PUBLIC EDUCATION BY CREATING THE NATIONAL BOARD FOR PROFESSIONAL TEACHING STANDARDS. THE NONPROFIT, NONPARTISAN ORGANIZATION TOOK ON THE CHALLENGING BUT CRITICAL MISSION OF RAISING THE STANDARDS FOR TEACHING IN THE UNITED STATES THROUGH AN ADVANCED CERTIFICATION SYSTEM FOR HIGHLY ACCOMPLISHED TEACHERS. BY PROVIDING A STRATEGY FOR RECOGNIZING, REWARDING, AND RETAINING TOP TEACHERS, THE NATIONAL BOARD'S MISSION HAS GROWN INTO A MOVEMENT THAT NOW REPRESENTS THE MOST COMPREHENSIVE, RIGOROUS, AND WIDELY ACCEPTED POLICY TOOL FOR IMPROVING TEACHING IN THE COUNTRY'S HISTORY.

The National Board began its effort by drafting and adopting, where there were none before, professional standards for what the nation's K-12 teachers should know and be able to do in the classroom. Based on those standards, the National Board has devised an assessment system and a voluntary certification process through which accomplished teachers can achieve National Board Certification in 24 fields and developmental levels of instruction. To become National Board Certified, teachers spend from one to three years demonstrating what they know and can do during up to 400 hours of rigorous assessment.

Like board-certified doctors, accountants, and architects, teachers who achieve National Board Certification have met rigorous criteria through intensive study, self-assessment, evaluation, and peer review. National Board Certification assures the public that teachers who have achieved the designation are highly accomplished practitioners in their field.

During the past 20 years, National Board Standards and National Board Certification have become two of the most robust approaches that states and districts can use to strengthen teacher quality. They have fostered a consistent vision of what high-quality teaching looks like and how it can enhance student achievement. National Board

Standards and National Board Certification are helping to improve the quality of professional development and teacher education and dramatically change the culture of teaching and learning in schools with large numbers of National Board Certified Teachers.

National Board Certification also has been a linchpin of some states' efforts to strengthen mentoring for new teachers and develop pay-for-performance programs to encourage more talented teachers to remain in the classroom.

As of January 2007, more than 55,000 teachers have earned National Board Certification. The number is growing, in part, due to provisions in all 50 states and the District of Columbia and in hundreds of school districts to help cover the costs of certification and/or to reward teachers who achieve National Board Certification. Across the country, NBCTs receive salary supplements that range from \$1,000 a year in some school districts, to California's one-time bonus of \$20,000 for working in low-performing schools, to the 10 percent salary bonus that Florida awards its NBCTs.

Accordingly, it is important to explore the effectiveness of National Board Certification in raising the quality of teaching and the extent to which National Board Certification has raised teacher retention, improved

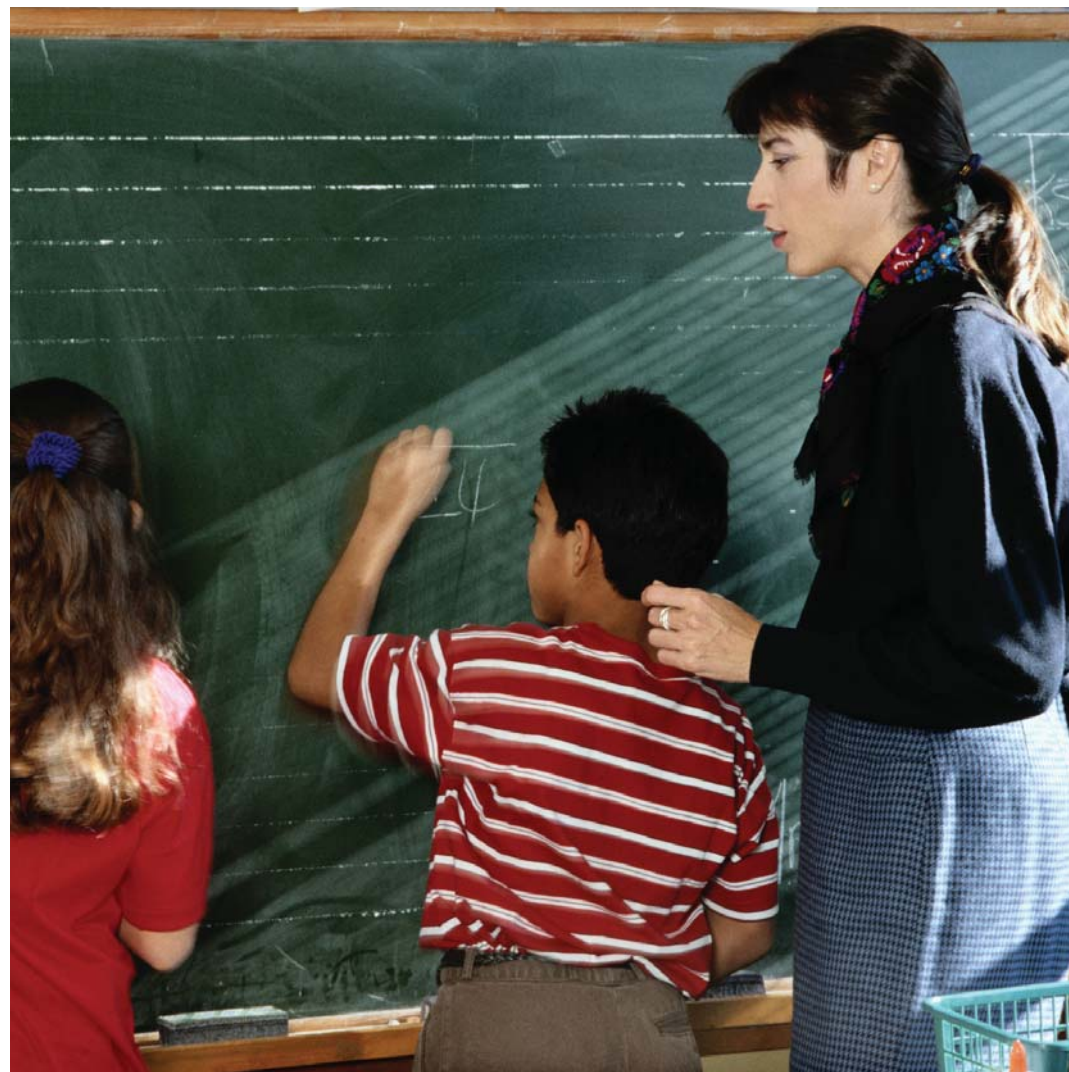


professional development, and affected school improvement efforts and student learning. While much of the research into the effectiveness of National Board Certified Teachers focuses on test scores, several studies use broader definitions of learning to measure the impact of National Board Certification on student performance.

Researchers have explored these questions due largely to the support of private philanthropy, making National Board Certification perhaps the most-studied intervention in the education field. To date, there have been scores of studies and reports conducted by independent scholars — including dozens sponsored by the National Board itself. The studies reveal a great deal

about the effectiveness of National Board Certification and, as with most research, they also raise many questions.

Overall, the studies show promising, but in some cases mixed, results regarding the impact of National Board Certification on student achievement as measured by standardized tests. The research is consistently positive about the influence of National Board Certification on teacher practice and morale, professional development, and areas of school improvement — such as leadership development, teacher mentoring, monitoring student performance, team-building, and curriculum development — that are critical to raising student achievement.



## SUMMARY OF KEY FINDINGS

**Raising student achievement.** Several major studies argue that students of teachers who have earned National Board Certification perform better on standardized tests and on other measures than students of non-National Board Certified Teachers. In one large-scale analysis of more than 100,000 student records, Linda Cavalluzzo (2004) demonstrates that students of NBCTs — particularly African American and Hispanic students — make larger gains in mathematics than students taught by non-NBCTs. Another study finds that students of NBCTs make learning gains equivalent on average to an extra month in school (Vandevoort, Beardsley, & Berliner, 2004). Furthermore, an examination of student achievement by Dan Goldhaber and Emily Anthony (2004) reveals that students of NBCTs scored 7 to 15 percentage points higher on year-end tests. These studies also show that minority students benefit even more from instruction by NBCTs. Some studies, however, reach different conclusions. William Sanders, James Ashton, and S. Paul Wright (2005), for example, report large variations in the impact of NBCTs, which leads them to assert that generally no significant differences exist between NBCTs and other teachers. However, their data also reveal that NBCTs account for significant achievement gains for students in some grades and subject areas.

**Inspiring deeper learning.** Studies show that students with National Board Certified Teachers improve in terms of “deep” learning — the kind of higher-order thinking that policymakers and business officials say is needed for future work and learning in the global economy. These studies find that students of National Board Certified Teachers exhibit much better writing abilities and comprehension of classroom material than students of non-certified teachers (Bond, Smith, Baker, & Hattie, 2000; Smith, Gordon, Colby, & Wang, 2005). The researchers also find that students of NBCTs

are twice as likely as other students to produce writing that uses complex ideas and integrates subject matter from multiple disciplines. They specifically link the improved comprehension of NBCTs’ students to the lessons and assignments designed by their teachers.

**Improving teacher practice.** A growing body of research finds that NBCTs demonstrate in-depth knowledge of teaching skills and subject content, and routinely seek educational strategies and materials that better meet students’ needs (Dagenhart, 2002; Petty, 2002; Ralph, 2003). Studies also reveal that National Board Certified Teachers tend to perform better than non-NBCTs on indicators of teaching expertise and often apply in the classroom what they learn from the certification process (Bond et al., 2000; Lustick and Sykes, 2006). In addition, research shows that NBCTs create more challenging curricula, present subject matter in greater depth, and provide better feedback to students than non-NBCTs (Bond et al., 2000). In national surveys, NBCTs demonstrate greater confidence in their abilities to foster student achievement than non-NBCTs (Whitman, 2002), and report that the certification process equips them to create stronger curricula and improves their ability to evaluate student learning (Kowalski, Chittenden, Spicer, Jones, & Tocci, 1997; Rotberg, Futrell, & Lieberman, 1998).

**Creating transformative professional development.** Recent studies show that National Board Certification can improve teachers’ practice and is a high-quality form of professional development that costs less than some comparable options. David Lustick and Gary Sykes (2006), after reviewing research on National Board Certification, conclude that when compared to other professional development options, National Board Certification is a “transformative experience” for many teachers. Lustick and Sykes’ own research shows that the certification process



itself improves teacher knowledge and skills in the areas of advancing and supporting student learning and supporting teaching. A 2005 study by Carol Cohen and Jennifer Rice compared the costs of National Board Certification with other high-quality forms of professional development, such as earning a master's degree, in several jurisdictions. After accounting for fixed as well as hidden costs, they call National Board Certification a high-quality and relatively affordable form of professional development.

**Influence on school improvement through mentoring and other leadership activities.**

Research consistently demonstrates that National Board Certified Teachers become highly involved in their schools in ways that improve school culture and raise student achievement, and they are viewed as helpful by other teachers. A survey of NBCTs (Yankelovich Partners, 2001) finds that their new roles include mentoring and coaching others, and developing programs aimed at improving student learning. Based on feedback from almost half of the country's nearly 5,000 teachers who achieved National Board Certification before 2000, the survey reveals 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).

Gary Sykes and his colleagues, Dorothea Anagnostopoulos, Marisa Cannata, Linda Chard, Kenneth Frank, Raven McCrory, and Ed Wolfe (2006) report that NBCTs help significantly more teachers in their schools than do non-NBCTs. In addition, non-NBCTs report that they learn more from NBCTs than from their non-National Board Certified colleagues. NBCTs also give input on curricular decisions, organize professional development opportunities, chair departments, engage with the community, reach out to parents, and serve as faculty voices to

policymakers and other stakeholders (Freund, Russell, & Kavulic, 2005; Sykes et al., 2006).

**Retaining teachers.** Research is beginning to show that National Board Certified Teachers consider staying in the classroom longer than non-National Board Certified Teachers and gain new enthusiasm for the profession as a result of going through the certification process. Sykes et al. (2006) find highly significant differences between NBCTs and the general teaching population regarding how long they plan to stay in teaching. In Ohio, 52 percent of NBCTs plan to stay in teaching "as long as [they] are able," as compared with 38 percent of non-certified teachers. Other research of teachers in North Carolina finds that NBCTs are in some cases less likely to leave the public school system when compared with non-NBCTs (Goldhaber & Hansen, 2007). Because teachers leave the profession for a variety of reasons (including factors related to compensation, opportunity for growth, school environment, collegiality and support, and school leadership) some research tracked the impact of National Board Certification on some of the areas that affect longevity in the field. These studies reveal that a majority of those who have applied for certification (whether they are ultimately certified or not) report a better understanding of pedagogy, increased opportunities for taking on leadership roles, increased collegiality, and renewed enthusiasm for teaching (Jenkins, 2000; Lustick & Sykes, 2006; Sykes et al., 2006; Vandevort et al., 2004; Wiebke, 2000).

**Underrepresentation of NBCTs in low-performing schools.** Nationally, according to NBPTS data (NBPTS, 2007), a majority of National Board Certified Teachers work in rural and suburban schools, and approximately one-third of them work in schools with students from low-income families. However, in a 2004 survey of the six states in which the most NBCTs teach, results show 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 (Humphrey, Koppich & Hough, 2004). Moreover, even in low-performing schools that have NBCTs, the efforts of the NBCTs may be hampered by school leadership that does not allow them to take on new roles and by a teaching culture that does not recognize their

expertise (Koppich, Humphrey, & Hough, 2004). In addition, just as low-performing and minority students are less likely to have an NBCT, non-white candidates for National Board Certification are less likely than white candidates to gain certification, with rates as low as 13 percent for African American candidates. (Howard, Ifekwunigwe, & Williams, 2006).



*The National Board for Professional Teaching Standards is drawing on these findings to bolster its certification process, address underrepresentation of minority candidates, and suggest new directions for teacher policy and practice.*

## WHAT RESEARCH SAYS ABOUT THE IMPACT OF NATIONAL BOARD CERTIFICATION

FOLLOWING IS A MORE DETAILED LOOK AT A BROAD RANGE OF STUDIES THAT PROVIDE VALUABLE INSIGHTS INTO THE STRENGTHS AND WEAKNESSES OF NATIONAL BOARD CERTIFICATION. THE NATIONAL BOARD FOR PROFESSIONAL TEACHING STANDARDS IS DRAWING ON THESE FINDINGS TO BOLSTER ITS CERTIFICATION PROCESS, ADDRESS UNDERREPRESENTATION OF MINORITY CANDIDATES, AND SUGGEST NEW DIRECTIONS FOR TEACHER POLICY AND PRACTICE.

### STUDENT ACHIEVEMENT

Many studies of student achievement compare NBCTs and non-NBCTs using student scores on various standardized tests. With some notable exceptions, the studies show significantly higher achievement by students of NBCTs. Four large-scale analyses are especially rigorous.

Goldhaber and Anthony (2004) report that NBCTs, and especially recently certified NBCTs, are producing marked gains in student test scores. Their analysis of databases of North Carolina student and teacher assessment results reveals that students of NBCTs score 7 to 15 percentage points higher on year-end exams. (The scores vary among grades and according to students' race and income levels.) Similarly, Charles Clotfelter, Helen F. Ladd, and Jacob L. Vigdor (2007) examined the effects of National Board Certified Teachers on student achievement in North Carolina. They used a test that has been administered for more than 10 years as part of North Carolina's accountability system and is aligned with the state's Standard Course of Study. They find that students of NBCTs generally outperform those of other non-NBCTs at statistically significant levels.

Cavalluzzo (2004) examined 108,000 student records from the Miami-Dade County school system to see if the various professional characteristics of teachers (degrees, experience, National Board Certification status, and six other indicators) related to student achievement in mathematics. She finds that on seven of the indicators,

NBCTs make a statistically significant impact on the academic outcomes of their students. All else being equal, the gains are bigger for Hispanic and African American students.

Finally, in 14 Phoenix-area elementary schools, researchers gathered data comparing the students of NBCTs to those of their non-certified peers (Vandevort et al., 2004). In almost three-quarters of 48 comparisons (using four years of data and three measures of academic performance across four grades), students of NBCTs surpass students of non-NBCTs. The learning gains are equivalent, on average, to spending about an extra month in school.

Other studies reveal mixed results for National Board Certification. For example, some research indicates that students of NBCTs do not demonstrate significantly better performance in comparison with students of non-NBCTs (Sanders et al., 2005; McColskey & Stronge, 2005).

Harris and Sass also find that when students are compared using results from the standardized test Florida uses for state and federal accountability, the students with National Board Certified Teachers achieve significantly higher gains in reading than their peers without NBCTs. By contrast, when using a norm-referenced test that is not aligned with state standards, students with NBCTs do worse than other students. The authors state that "the choice of test turns out to have significant influence on many of the results."

While these studies find limited impact on student achievement, as measured by



standardized testing, they also identify some benefits of National Board Certification. Sanders et al. (2005), for example, show that, while NBCTs do not account for significant gains in student rates of academic progress overall, they are linked to significant differences among students for some grades and subject areas. In fact, on most indicators, students of NBCTs do better, although the differences seldom rise to the level of statistical significance.

Wendy McColskey and James Stronge (2005) uncover no significant student achievement gains among students of NBCTs. However, they report strong performance by NBCTs in their practice-related areas, such as graduate coursework, student-assignment design, and quality of planning practices; there is statistically more complexity in reading comprehension assignments by NBCTs and sophistication in their classroom management.

### INSPIRING DEEPER LEARNING

Researchers have devoted much energy to studying the effects of NBCTs on “depth of learning” as measured by students’ understanding of complex classroom content. These studies show that students of NBCTs exhibit “deeper understanding” of concepts presented in class and have better writing skills. Moreover, one study indicates that NBCTs’ classroom practices are designed to elicit this “deeper” learning.

Lloyd Bond, Tracy Smith, Wanda Baker, and John Hattie (2000) find that student work in response to assignments from NBCTs exhibits a more integrated and coherent understanding of the concepts targeted in instruction and a higher level of abstraction than understanding achieved by other students. Three-quarters (74 percent) of NBCTs’ students demonstrate “deep” understanding, compared with only 29 percent of non-certified teachers’ students.

Smith and several colleagues (2005) addressed the depth of NBCTs’ students’ learning both as elicited by their teachers’ assignments and practices and as demonstrat-

ed on student work samples. When taken as a whole, eight indicators of teacher practice show no statistically significant difference between NBCTs and non-NBCTs. But when each indicator is evaluated individually, the authors find that in seven of the eight areas, the students of NBCTs obtain higher average scores that are statistically significant. For instance, on the indicator of instructional aims, NBCTs are judged twice as likely to produce “deep learning” outcomes as other teachers, by expert assessors. Smith also finds that students of NBCTs show significant differences on all indicators of writing performance, including such aspects as organization and sentence structure, and are twice as likely to demonstrate “deep learning” outcomes in writing samples.

### IMPROVING TEACHER PRACTICE

National Board Certification requires candidates to submit videotapes of classroom instruction, examples of student assignments, and evaluations of student work. That process, according to much research, improves the teaching skills of those who participate. (About 40 percent of candidates achieve certification the first year; about 65 percent do so by the end of the three-year cycle.) Nationwide surveys of National Board Certified Teachers commissioned by NBPTS and conducted by Yankelovich Partners find that NBCTs have a higher sense of teaching efficacy, or the belief that they can affect student achievement, than other teachers (Whitman, 2002; Yankelovich Partners, 2001).

Several studies cataloging NBCTs’ professional priorities — access to classroom materials, time for research and study in their content area, time for professional development, teaching autonomy, and leadership opportunities — generally find that NBCTs desire a wider range of educational resources than other teachers (Dagenhart, 2002; Petty, 2002; Ralph, 2003). The research indicates that NBCTs have high aspirations for their practice and for their students, and want the resources needed to achieve their goals.

Also, National Board Certified Teachers tend to perform better than non-NBCTs on indicators of teaching expertise and what they bring from the certification process to the classroom (Bond et al., 2000; Lustick & Sykes, 2006). The research shows that NBCTs use more challenging curricula, present it in a more complex way, and provide more feedback to students.

In a frequently cited study, Bond, Smith, Baker, and Hattie (2000) identified 13 features of teaching expertise consonant with other educational research. Then they compared a group of NBCTs with another group of experienced teachers (who applied for certification, but did not receive it). NBCTs outperform the other teachers 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.

Two groups of scholars (Kowalski, Chittenden, Spicer, Jones, & Tocci, 1997; Rotberg, Futrell, & Lieberman, 1998) propose that the certification process and the National Board’s standards serve as “resource[s] for learning” for teachers. That was later confirmed by the National Board’s own research (NBPTS, 2001b), in which 92 percent of candidates report that the certification process has made them better teachers. In the same 2001 study, based on a nationwide survey of National Board candidates, 89 percent of respondents report that the process has equipped them to create stronger curricula and more effectively evaluate student learning.

### BOLSTERING PROFESSIONAL DEVELOPMENT

Evidence shows that National Board Certification is, as it was designed to be, an efficient and cost-effective form of teacher professional development. Research shows that participation in National Board Certification strengthens the practice of teachers who achieve certification as well as the practice of those who do not achieve the designation. In addition, other research

documents that the process is a relatively cost-effective professional development option.

In a 2006 report, Lustick and Sykes asked, “What are teachers learning [from National Board Certification]?” They conclude from their literature review that the discourse communities that form around the candidacy experience are avenues for candidate learning, that National Board Standards are an inherently valuable resource for teachers, and that teachers become “more reflective practitioners” as a result of the certification process. Lustick and Sykes also show that the process improves teacher knowledge and skills in the areas of advancing student learning.

Lustick, in qualitative analyses of his interviews, finds that about 40 percent of study participants display what he calls “dynamic learning,” meaning that they immediately incorporate the lessons from the certification process into their classroom work. For these candidates, the process is transformative, changing their teaching beliefs and practices. He considers the 40 percent rate highly successful. Most other teachers in the study demonstrate “technical” or “deferred” learning, meaning that they find the process informative, although it is unclear whether they apply what they learn in their teaching practices.

While comparative research is scarce, studies show that National Board Certification aligns closely with many attributes of high-quality professional development and at least one study shows that its costs are in the same range or lower than other common approaches to professional development.

In a 2005 report, Cohen and Rice compared the total cost of National Board Certification with that of other high-quality professional development, such as earning a master’s degree. They find that the cost — including the fees, candidate-support-program and administrative expenses, and the time spent by all parties involved — is still lower than the cost of the least expensive master’s degree program considered (night-time enrollment at the University of Virginia).

### INFLUENCE ON SCHOOLS IN AREAS THAT LEAD TO IMPROVED LEARNING

Studies suggest that the roles individual National Board Certified Teachers play in their schools — particularly through mentoring and other leadership activities — influence the practices and effectiveness of their colleagues and the outcomes of students in other teachers’ classrooms.

In a 2001 survey of nearly 5,000 NBCTs by Yankelovich Partners on behalf of NBPTS, 99.6 percent of respondents say they are engaged in at least one leadership activity. The average National Board Certified Teacher is engaged in almost 10 leadership activities. More than eight in 10 (83 percent) NBCTs say they mentor struggling, new, or future teachers, while 90 percent report that they mentor National Board candidates. Almost all of those surveyed (90 percent) say that National Board Certification has enhanced their credibility with other educators, and 81 percent report that new leadership opportunities are made available to them as a result of becoming certified.

In a 2006 study, Sykes et al. explored the impact that NBCTs have on individual schools and measured their leadership involvement using the statements of their fellow teachers at about 1,500 schools. Sykes and his colleagues conclude that nearly all NBCTs are involved in leadership activities within their schools and that their involvement increases over time. His study also notes that NBCTs help significantly more of their colleagues than do non-NBCTs.

One of the key ways that National Board Certified Teachers become more active leaders is through mentoring, a highly effective form of professional development that provides a variety of benefits to mentors and those being mentored (White & Mason, 2001).

### RETAINING TEACHERS

One recent study indicates that National Board Certification contributes to keeping excellent teachers in the classroom. Other research explains why: National Board Certified Teachers experience new enthusiasm for teaching and better relations with fellow faculty members.

Sykes and colleagues find (2006) that National Board Certified Teachers intend to remain in teaching longer than the general teaching population. Their study reveals highly significant differences between NBCTs and the general teaching population on this count. In Ohio, for instance, 51.9 percent of NBCTs plan to stay in teaching “as long as they are able,” versus 37.5 percent of all the state’s teachers. The figures for South Carolina are similar.

Another recent report suggests that National Board Certification may influence teacher mobility. Goldhaber and Hansen find that NBCTs are more likely to stay in their schools and less likely to leave the North Carolina public school system compared with non-applicants. Compared with unsuccessful applicants, NBCTs are more likely to leave the North Carolina public school system.

National Board Certification affects teachers in a variety of ways that are key to keeping teachers in schools. For example, analyses show that National Board Certification sparks professional growth on a number of levels, the most basic of which is a “revitalization of practice,” or a renewed enthusiasm for teaching (Iovacchini, 1998; Jenkins, 2000; Wiebke, 2000). Also, the certification process spurs candidates to reflect more about their practice (Areglado, 1999; and Wiebke) and creates enduring “discourse communities” within some schools (Burroughs, Schwartz, & Henricks-Lee, 2000; Gardiner, 2000; Rotberg et al., 1998). Furthermore, NBCTs report increased collegiality with other teachers regardless of certification status (Jenkins, 2000; Wiebke, 1999; Rotberg et al.).

### UNDERREPRESENTATION OF NBCTs IN LOW-PERFORMING SCHOOLS

Research indicates that the expertise and leadership capacity of NBCTs have the potential to turn around low-performing schools and fundamentally change student outcomes. Unfortunately, NBCTs are not evenly distributed among the schools that need them most, and those who do teach in low-performing schools often do not receive the tools or the freedom they need to take leadership roles. Nationally, according to 2006 NBPTS data (NBPTS, 2007), a majority of National Board Certified Teachers work in rural and suburban schools, and approximately one-third work in schools with students from low-income families.

Using 2004 data from NBPTS on NBCTs certified since 1998, Daniel Humphrey, Julia Koppich, and Heather Hough (2004) find, based on a survey of six states, that poor, minority, and low-performing students are less likely than their more affluent peers to be taught by an NBCT. Only 16 percent of NBCTs teach in high-minority schools (more than 75 percent minority); 12 percent in high-poverty schools (more than 75 percent of students’ households in poverty); and 19 percent in low-performing schools. The same study finds that 6 percent of North Carolina NBCTs work in high-minority schools and only 6 percent of Ohio NBCTs are in high-poverty schools. Moreover, while 16 percent of Florida NBCTs teach in high-need schools, 43 percent teach in high-performing (test scores in the top three deciles) schools.

Just as high-need and minority students are less likely to be taught by an NBCT, minority NBCT candidates are less likely than their white counterparts to gain certification. Although African American and Hispanic teachers enter the National Board Certification candidacy pool in numbers proportional to their representation in the U.S. teaching force, they earn certification at much lower rates (Wayne, Chang-Ross,

Daniels, Knowles, Mitchell, & Price, 2004). Dan Goldhaber, David Perry, and Emily Anthony (2003) note that African American teachers are more likely to apply for certification than other ethnic groups but are less likely to gain certification.

Tyrone Howard, Ann Ifekwunigwe, and Rae Jean Williams (2006) note that implementing a support structure with writing assistance, technological training, and intense mentoring increases African American candidates’ certification rate to nearly 50 percent. Maxine Freund, Victoria Kane Russell, and Christy Kavulic (2005) reach a similar conclusion.

A major cause of the disparities in certification rates seems to be that minority candidates are more likely to teach in high-need and high-poverty schools where support structures are limited, while white teachers are more likely to teach in affluent schools (Goldhaber et al., 2003). Urban schools also have difficulty attracting the most talented teachers, minority or otherwise, because of poor working environments (Humphrey et al., 2004).

Julia Koppich and her colleagues Daniel Humphrey and Heather Hough (2004) find that the influence of NBCTs in high-need schools may be lower than that of their counterparts in high-performing ones. In low-performing schools, principals often do not know how to take advantage of NBCTs’ leadership abilities, which in turn results in fewer NBCTs taking on roles outside the classroom.

Research also indicates ways to raise the number of NBCTs in high-need schools. Candidates for National Board Certification are more likely to achieve certification if their mentors are specifically trained for their role (Freund et al., 2005).



## CONCLUSION

THE EXTENT OF RESEARCH ACROSS THE KEY TOPICS CONSIDERED HERE SPEAKS TO A BROAD-BASED NATIONWIDE EFFORT TO MORE FULLY UNDERSTAND THE IMPACT OF NATIONAL BOARD CERTIFICATION ON TEACHERS, STUDENTS, AND SCHOOLS. EACH STUDY PROVIDES IMPORTANT ANSWERS BUT ALSO RAISES QUESTIONS FOR NEW RESEARCH.

What constitutes student learning? Should the assessment of learning be based solely on achievement tests? How does National Board Certification compare with other models of pay-for-performance? To what extent do National Board Certified Teachers in shortage areas, such as math, science, and special education, help raise student achievement? How much does the increased presence of National Board Certified Teachers in low-performing schools contribute to better student outcomes, and what is the critical mass of NBCTs necessary for making a difference in these schools?

In addition, concerns and questions about the research itself must be addressed. For example, most quantitative studies of NBCTs' impact on student achievement use complex statistical techniques to simulate a controlled environment. These techniques, however, face the basic challenge of trying to distinguish the impact that a single teacher is having on his or her students' learning — especially student achievement as measured by standardized tests. Hundreds of factors weigh on a student's performance on a particular test. Demographics, school characteristics, and even whether the child had breakfast on test day have all been shown to have noticeable effects on test scores.

Another challenge facing researchers is the lack of a definition of learning. Today, learning often is treated as a one-dimensional output (standardized test scores) rather than as a process affecting many areas of a child's

development, or even many different output measures (e.g., higher-order thinking skills, complex problem solving, engagement in learning). Given the differences in findings between, and within, different studies on student achievement and National Board Certification, the National Board does not take the results of any one study as the final word. Studies of student achievement based on test scores are only one aspect of the research on National Board Certification.

As researchers move forward, they face a host of related questions. What kinds of tests and other representations of student skill and knowledge should be used to measure the impact of NBCTs on student learning? What constitutes a significant impact? What are the most appropriate approaches and methodologies to account for the effects of schools and non-teacher factors on student performance?

The National Board and other organizations are convening experts to discuss these issues to further elucidate what the research shows and provide additional guidance to researchers in measuring the impact of National Board Certification. This impact encompasses not only teacher effectiveness and its contribution to student achievement as measured by standardized testing, but also student engagement and higher-order learning (e.g., the mastery of complex ideas and the integration of subject matter, writing, and analysis) — skills that are essential for success in the global economy.

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Created by educators and policymakers in 1987, the National Board for Professional Teaching Standards (NBPTS) is an independent, nonprofit, nonpartisan and nongovernmental organization. NBPTS advances the quality of teaching and learning by developing professional standards for accomplished teaching, creating and administering National Board Certification, a voluntary system to certify teachers who meet those standards, and integrating certified teachers into educational reform efforts. Today, more than 55,000 National Board Certified Teachers (NBCTs) are making a positive difference in the lives of students across the nation.

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