

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 (nighttime 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.