

The National Board for Professional Teaching Standards and the Future of a Profession

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Abstract

In 1986 the Carnegie Forum on Education and the Economy called for the creation of a National Board for Professional Teaching Standards and envisioned teachers certified by the Board as instruments of reform and promoters of teaching expertise. Since 1987, the NBPTS has created standards and assessments for advanced teaching practice and certified more than 55,000 K-12 teachers in U.S. schools. Today the National Board finds itself under intense scrutiny. Often-contradictory research on the effectiveness of National Board Certified Teachers® (NBCTs) has fueled an already volatile debate over the relative value of the NBPTS process and the likelihood that teacher professionalism can transform public education. Growing evidence suggests that while NBCTs are increasing in number, there are too few examples of where and how they can serve as catalysts to transform teaching and learning.

One's beliefs about the work of teachers may define how one interprets the research evidence on NBCTs and their effects on student learning. If teaching is viewed primarily as a content-delivery system that can be staffed by individuals with a college degree and the limited training necessary to implement a prepared curriculum, then one may agree that entry into teaching should be deregulated, and teacher performance judged primarily by students' results on an end-of-year standardized test. If, however, teaching is understood as a complex job that requires teachers who can design learning experiences to help every student gain the adaptive competencies defined by groups like the Partnership for 21st Century Skills, then one may agree that teaching needs to be professionalized, and the assessment of teacher performance will necessarily be more multifarious.

After considering various issues surrounding the NBPTS process – including cost vs. benefits, NBCT distribution, and the relative importance of teachers' problem-solving skills – this paper reflects on several significant research studies that focus on teacher learning, the effects of NBCTs on student learning, and the effects of NBCTs on school improvement. In doing so, it poses three broad questions that should be answered by research: (1) Does the National Board process help teachers learn to teach differently? (2) Are NBCTs more effective in helping their students learn at high levels? and (3) Do NBCTs currently spread their knowledge to other teachers, and if not, how could they?

This review focuses on approximately a dozen of the most notable and important studies of the National Board and its effects, fused with voices of NBCTs themselves. A review of the evidence presents a mixed picture of the National Board, although a close look at the varied methods and limited data used can raise more questions than offer definitive answers. Different researchers, even using similar databases, can reach different conclusions — depending on the student tests they use or the statistical methods they employed.

As a former teacher, educational researcher, and advocate for the profession, I would suggest that the overall effects of NBCTs on student achievement appear to be positive, and policy-makers should continue to find ways to encourage teachers to achieve this “gold standard” of teaching. The assessment process has become a boon for teachers’ professional development, and students of NBCTs tend to perform better on both standardized tests and more in-depth measures of academic learning. The National Board Certification process was designed to capture how teachers think about their teaching and how they adapt their lessons to diverse learners, and the National Board can point to evidence that both of these objectives are being met to a certain degree. However, the current ways schools are organized limit the influence that NBCTs can play in advancing school improvement.

However, the National Board should make more public the evidence on how NBCTs improve standardized test results of the students they teach, and how their efforts may at times be undermined by — or not relevant to — what is measured. Granted, the National Board assessments — which were revised in the early 2000s — may be the most powerful measure of highly accomplished 21st century teaching. However, the process and its scoring rubrics may not be sufficiently fine-tuned to rule out “false positives” (those who achieve, but should not) as well as “false negatives” (those who do not achieve, but should).

The National Board has clearly served as a catalyst for change and advanced the agenda evoked 20 years ago by the Carnegie Forum to create “a profession of well-educated teachers prepared to assume new powers and responsibilities to redesign schools for the future.” The jury is still out, however, on whether the National Board can play a central role in the future of school reform by creating the coalition needed to take both the assessment process and NBCTs themselves from where they are to where they can go. Currently, NBCTs are less likely to be teaching in high-need schools — where they are needed the most. In the end, it may be less important for NBCTs to demonstrate they generate higher standardized test scores (at least the current variety) and more important for them to lead their profession and promote improvements in the nation’s highest needs schools.

Maria: A Vignette

Fourteen-year-old Maria is a struggling 7th-grade student. Although she works hard, Maria's learning disability means that she processes text much more slowly than most other students. She reads more than two years below grade level. Her poor reading skills also increasingly prevent her from doing well in math, which was a strong subject for her in elementary school when the problems she was asked to solve did not involve complex text.

Like Maria, virtually all of the students in her school qualify for free-or-reduced lunch, and 65 percent do not speak English as their first language. Often their parents do not have the time or skills to help them with their homework. Since 2002, when the school was first labeled as "in need of improvement" under the federal No Child Left Behind Act, the teacher turnover rate has hovered around 35 percent a year.

Back in 5th grade, Maria had a good year. At the beginning of the year she was reading on a 3rd-grade level. While the school's formative assessments indicated that Maria's reading skills had increased by a full grade-level equivalent, she did not meet proficiency on the state's 5th-grade standardized test.

Her teacher, Jenny Cabrello, used a wide variety of teaching strategies, including those she had learned in training sessions for Reading Recovery and the Sheltered Instruction Observation Protocol, a program designed to help second language learners. Ms. Cabrello, a 10-year veteran, graduate of Bank Street College's exemplary teacher education program, and National Board Certified Teacher, has always sought to become a more effective teacher. Recently she saw Maria's mother at the mall and was dismayed to hear that Maria was losing ground academically. "I learned a great deal about teaching students like your wonderful daughter while preparing for National Board Certification," Ms. Cabrello told Maria's mother. "I just wish more of my colleagues could do the same."

However, most of Maria's teachers have had no special training in "how to teach" and few have the time, incentives, or inclination to meet the rigorous demands of the National Board for Professional Teaching Standards — an advanced certification program that requires teachers to deeply examine their own teaching practice. In fact, because of growing teacher shortages, most of Maria's teachers are fresh from teacher education programs where they did minimal practice-teaching. Some are career changers who have been allowed to teach on an "alternative" license with little or no preparation whatsoever. No matter their route into teaching, these novice teachers are struggling to figure out how to design and

implement lessons that will engage a wide variety of students with various learning difficulties who are not easy to reach and motivate.

Ms. Cabrello has tried to influence her colleagues to teach differently, but she has little time or administrative support to do so. In some cases, her colleagues appear to be professionally jealous of the state bonus she receives for being National Board Certified. Because Ms. Cabrello's colleagues know so little about the National Board process, they belittle her achievement and often describe her as a "know-it-all." The school administration has focused mainly on pushing everyone on the faculty, including Ms. Cabrello, to teach directly to a test-based reading and math curriculum. Ms. Cabrello, with her knowledge and training, knows how to teach to the individual child, far beyond the prescribed curriculum. Her teaching focuses on both basic and higher order skill development.

As Ms. Cabrello struggles to exert some teacher leadership in a school organization that makes few distinctions between the abilities of novice and accomplished teachers, a debate is raging across the United States over how to recruit and prepare teachers. Should the nation further develop teaching as a profession, using structures like the National Board for Professional Teaching Standards to formally identify exemplary teaching practices, or concentrate instead on luring as many individuals as quickly as possible into public school classrooms, and then train them on the job? Do the National Board assessments really improve teaching and student achievement? Recent national studies have suggested that students of NBCTs, compared to those of non-NBCTs, do not necessarily score higher on standardized basic skills achievement tests. These studies have stymied local and state policy-makers' interest in providing incentives for more teachers to achieve National Board Certification. As a result a number of policy-makers are looking to less costly teacher assessments that can be used to identify and reward "good teachers." In fact, this is what has begun to occur in the state and district in which Maria attends school.

As this philosophical and political debate drones on, 14-year-old Maria is beginning to slip between the cracks in our public education system. Not long ago, she told her friends that she'll probably drop out of school before 9th grade and just look for a job. "I'm not a smart student," she says. "Ms. Cabrello said I was, but she must have been wrong."

Introduction

This paper, primarily intended to summarize the research on the National Board for Professional Teaching Standards, is really about students like Maria and the kind of teachers they deserve. What are the skills that Maria's teachers need to have? How do new and veteran teachers develop those skills? And how do policy-makers, educators, and civic leaders assure that the skills of a growing cadre of expert teachers are spread to others in their schools, districts, and even across the nation?

America's current and ever-more heated debate over how to define and ensure teaching quality can be traced to the mid-1980s, when the Carnegie Corporation established the Carnegie Forum on Education and the Economy to explore and more clearly define "the link between economic growth and a well-educated citizenry." The Forum's 1986 report, *A Nation Prepared: Teachers for the 21st Century*, warned that "America's ability to compete in world markets is eroding," and that economic growth depended "on achieving far more demanding educational standards than we have ever attempted to reach before." Carnegie's blue-ribbon panel concluded that the teaching profession was America's "best hope" for restoring the nation's competitive edge and called for the creation of an advanced certification system that identified and rewarded teachers who met "high standards." In the 21st century, the panel argued, U.S. public education would require teachers who "*provide active leadership in the redesign of the schools and in helping their colleagues to uphold high standards of teaching and learning.*"

The Carnegie Forum's suggestion that the professionalization of teaching might secure the nation's economic future was sufficiently provocative to stir both action and controversy. In 1987, the National Board for Professional Teaching Standards was established and began a challenging decade of work to develop an advanced certification system built around high standards of teaching practice. At its outset, NBPTS posited that, while National Board Certification would be conferred on individual teachers, "these singular transactions will have a profound cumulative impact on American education."

Twenty years later, after certifying more than 60,000 K-12 teachers in schools and districts across the United States, the National Board for Professional Teaching Standards finds itself under intense scrutiny. A recent wave of seemingly contradictory research on the effectiveness of National Board Certified Teachers[®] has further fueled an already volatile debate over the efficacy of the NBPTS process and the likelihood that teacher professionalism can transform public education.

With this paper, I hope to shed light on what the current NBCT research might mean for Maria and many students like her — and for the teaching profession which must serve them. Like the phenomenon that astronomers call the "parallax view," interpretation of these data is heavily influenced by where one stands — by perceptions and

opinions, by assumptions about the purposes of public schools and the kinds of teachers needed to achieve those purposes. Is it the purpose of school to *primarily* supply students with the facts and information needed to answer questions about existing knowledge and ideas? Or is there an obligation — as organizations like the Partnership for 21st Century Skills contend — to prepare students to be life-long adaptive learners who can create new knowledge and evolve new skills to solve problems that cannot even be imagined today?

Beliefs about the purpose of school shape the outlook of policy-makers and the public when it comes to the work of teachers. On one hand, key stakeholders may feel that teaching is a straightforward job that can be done by individuals with a strong liberal arts degree and an academic major in the field they teach. Whatever pedagogical skills are needed can be taught to teachers on the job. Those who think this way frequently agree that teachers should be judged primarily by the results their students achieve on a once-a-year, timed, standardized, multiple-choice test of basic skills.

However, many other educational practitioners, researchers, and observers understand teaching as a complex job that requires highly prepared and skilled teachers who can design an appropriate learning experience for every child and spread their expertise to other practitioners. Such a multi-faceted view of teaching necessitates that teachers be judged by multiple measures of student learning — measures that include not only standardized tests, but also analyses of student work products and demonstrations of how well their students can speak, perform, and write.

One particular teaching view or another can easily define how one interprets the evidence on NBCTs and their effects on student learning. As a former high school teacher and a “student” of the teaching profession, I tend to favor the latter point of view.

In reviewing the research on the National Board, a number of methodological and conceptual issues surfaced, where differences in perspective that may shape the research process can result in varying – and in some cases dramatically opposing – conclusions. These research challenges will be explained in greater detail later, but I highlight a few of them here prior to exploring individual views and studies in depth:

- Most of the research studies draw on very different datasets of varying quality and size — some of which cannot effectively track individual student performance and correlate results to individual teachers.
- Some of the standardized tests upon which NBCTs are being judged may not be sensitive to the value that is “added” by these teachers, in the context of the specific students with whom they work.
- The researchers often are not able to control for the non-NBCTs who may be effective teachers, but just choose not to attempt to become Board Certified — and in doing so can artificially close the statistical gap between the treatment (NBCTs) and control (non-NBCTs) groups in the studies.

- The influence of NBCTs on student achievement may have more to do with dysfunctional school organization and poor working conditions that inhibit the spread of teaching expertise to less-than-effective teachers.
- Finally, the National Board assessments, which were changed in 2001 to streamline the process and focus more on content knowledge, may not be sufficient to reveal differences between those who produce higher standardized achievement test gains and those who do not.

To examine how best to overcome these research challenges, we must first consider the education environment in which the teaching profession and the drive for teaching quality are currently and inextricably entangled.

The Teaching Profession Debate and National Board Prospects

Teaching has long been described as a “semi-profession,” due to its truncated training, its unenforced standards, its ill-defined body of knowledge, and its general lack of autonomy for practitioners. Critics often claim that, given its history, teaching cannot hope to mirror established professions like medicine. Because of its weak knowledge base and highly uneven preparation programs, the teaching occupation is often compared to journalism, where some practitioners are highly trained and others just learn on the job. Chester E. Finn, Jr., a well-known critic of the National Board, has said that he “look(s) forward to the day when teaching will be like (medicine). . . . But it isn’t that way today, and it may not be for the next two centuries.” For Finn and other skeptics of the professionalism movement, the National Board Certification process represents more “burgeoning rules and tests” that “have little to do with true classroom performance.”

Much of the debate over the National Board has a profound subtext. Should teaching be professionalized or deregulated? Some argue for *professionalizing teaching* by establishing more stringent standards and restricting entry into teaching, while others argue for *deregulating teaching* by loosening entry and preparation requirements. For the most part, professionalism assumes a strong knowledge base that is required to teach effectively, while deregulation does not. The former focuses on tools such as professional certification, while the latter relies on the market to ensure quality control.

Professionalism is often viewed as a tool of status and power for teachers and their unions. Opponents of strong teacher organizations may see a “free market” for teacher labor as the surest way to end the tenuous controls that teacher unions are still able to exert over salary and working conditions as well as over resources that must be expended in order to certify accomplished teachers — like NBCTs. Finn, a strong proponent of deregulating teaching, has argued:

States should insist on subject knowledge but otherwise open up entry into teaching. Let the market generate both quality and quantity. Decentralize personnel decisions to individual schools and empower them to pay teachers what they’re worth. Then hold schools accountable for their results, with teacher performance judged by what students learn.

The deregulation argument has gained traction in recent years, and the entire teacher certification apparatus in the United States has increasingly been questioned. For example, in July 2002, the U.S. Secretary of Education issued *The Secretary’s Annual Report on Teacher Quality*, which, for all intents and purposes, argued for the dis-

mantling of both teacher education and certification. The Secretary, drawing on a narrow strand of research, claimed that current teacher certification systems are “broken,” and that they impose “burdensome requirements” for education coursework that make up “the bulk of current teacher certification regimes.” Efforts to reform and improve the system — including the evolution of the National Board process — were largely ignored in the Secretary’s report.

How fair is this critique?

In fact, the research evidence on the merits of teacher education and certification (professionalism solutions) and “shorter-cut” alternative routes into teaching (market-based solutions) is mixed. In a recent paper, Don Boyd and colleagues claim that while teacher qualifications do indeed matter for academic achievement, both approaches can have a positive impact for students. Although the debates can be fierce and proponents of both camps “stand by their data,” it is difficult to find conclusive evidence that there is one best path to teacher quality.

Can the marketplace — local schools, in Finn’s example — identify good teachers more efficiently and equitably than tools like professional certification? Are the barriers to elevating teaching to full professional status insurmountable, as Finn and others seem to suggest? Or can the National Board Certification process and a new brand of professionalism promote entrepreneurial teaching, teacher excellence, and the spread of exemplary practices?

Few will argue that the barriers to elevating teaching to a full profession are *formidable*. In the current public school environment — which encompasses more than 100,000 schools in 13,000 school districts — a host of political and cultural factors have impeded the dissemination of effective teaching practices and the codification of professional knowledge among teachers. More often than not, one teacher does not emulate the effective practices of another, even if the two teach in side-by-side classrooms. In 1975, well-respected sociologist Dan Lortie wrote about this dysfunctional phenomenon. In 2007, many more teachers are serving as coaches and mentors, but not much has changed for many of the nation’s 3.4 million teachers. Most teacher leadership tasks are best classified as *tasks du jour* and as such, teachers are expected to represent administrative purview, not to transform schools. Teachers are expected to adhere to leadership as traditionally defined in 20th century school bureaucracies — not 21st century learning organizations.

Lee Shulman, the primary intellectual force behind the National Board’s development, initially saw the NBPTS as a way to “make excellent teaching more salient and visible” and to “identify real excellence in teaching.” Jim Kelly, founding president of the National Board, viewed the certification process as a device to transform the culture of teaching by promoting a professional environment “in which teachers would communicate about practice and work collectively and collaboratively” and eventually be granted “enhanced professional roles” necessary for 21st century learning.

Ultimately, the National Board’s advanced certification process emerged as something very much like the credentialing process found in other, more established professions, which document whether practitioners possess

and make effective use of the knowledge base in their field. While much of the recent criticism of the National Board draws on limited research suggesting that the students of NBCTs are not performing at significantly higher levels on standardized, basic skills tests, it is important to point out that the NBPTS process was never designed to identify teachers whose students perform well on high-stakes standardized tests that measure only a narrow part of the curriculum. *The process was designed to assess whether teachers can explain why they teach the way they do and how their teaching helps all their students learn more through the application of effective strategies tailored to individual student needs.* And as will be revealed later, NBCTs readily point out that the National Board Certification process is *not* about lock-step rules of teaching, but about a complex and nuanced classroom performance.

But the National Board assessments are designed to produce teachers who know what to do to advance student learning — and maybe the process is not quite where it needs to be. The National Board assessments should not shy away from using student learning — including standardized test scores — in its mix of indicators to identify highly accomplished teachers. However, because these assessments do not yield consistently valid and reliable results and the much-heralded value-added statistical methods still have “fundamental problems,” these tests cannot be the *end-all*. While value-added statistical methods have improved prospects for linking teachers to student learning gains over time, there are “serious technical and educational challenges associated with using this approach to make strong inferences about *individual* teacher effectiveness, especially for high-stakes purposes.”

A more important question is: *Does the National Board process identify teachers who can produce students who are fully prepared to be successful citizens and workers in our 21st century society and economy?* Another one would be: *Is there a better path to good teaching — are there tools and methods that will better ensure that all the children in our public schools have a high-quality teacher in every classroom?* Today’s standardized tests — which are artifacts of 20th century schooling — cannot be the sole arbiter of good teaching and learning. Most of the standardized achievement tests used today are not designed to measure how well teachers teach, but how students fare compared to each other. In doing so the tests often end up being “instructionally insensitive” and may run counter to the kinds of teaching and learning needed for the 21st century.

Teachers and Teaching for Tomorrow

One thing is clear: The good teaching of yesterday is not the same as the good teaching of today and tomorrow. Carnegie's vision for teachers and schools continues to resonate as the 21st century global economy is increasingly fueled less by market goods and more by innovation and knowledge creation. In his provocative book, *The World Is Flat*, Thomas Friedman speaks bluntly about how cheap, ubiquitous telecommunications have transformed our day-to-day lives and conceptions of global economic competition. Indeed, many of today's elementary-aged students will have jobs in the years ahead that have yet to be created. The implications for schools are profound. Scripted curriculums and plug-in lesson plans will not produce the adaptive, innovative thinkers America needs — where the 3Cs of creativity, communication, and collaboration trump the 3Rs of reading, writing, and arithmetic.

One can say for certain that the basic skills so emphasized on today's standardized tests, while necessary, will be far from sufficient in the days to come. Does it make sense, then, to overly rely on these industrial-age assessment tools to measure the worth — or determine the necessary skill sets — of our 21st century teachers? As Charles Fadel, the “global lead” for education at Cisco Systems, recently wrote:

The measure of success in today's economy is not just what you know, but how you use that to imagine new ways to get work done, solve problems, or create new knowledge. This innovation-based environment calls for substantially new forms of assessment.

What teacher qualities are most likely to make a difference in the achievement of today's and tomorrow's students? Business leaders like Fadel call for teachers who can help students develop global awareness and comprehend what they read and observe at a level far beyond the minimal expectations of a scripted curriculum. Teachers of tomorrow must help students develop financial, economic, business, and entrepreneurial literacy as well as know-how for problem-solving and collaboration using multi-media and technology skills.

New research points to teachers who can design standards-based classroom assessments; grade student work in far more reliable, valid, and consistent ways; detect student learning differences; and adapt their lessons to those differences. Teachers must be able to use new technologies as well — both to assemble and analyze student data and to enable students to manage their own learning. And they must do all of this in collaboration with their colleagues, and therefore must learn new teacher leadership skills.

In light of this research, one has to wonder if the debate over teacher professionalism is, itself, a relic of the last century. What other choice do we have than to transform teaching into a highly adaptive, knowledge-based field that “certifies” that teachers know and can do what is needed for 21st century learning? How else will America

meet its need for teachers who know the world is truly flat, in the Tom Friedman sense of the word, and understand what that means for teaching and learning?

If we concede that teaching must become a highly adaptive, knowledge-based field, we might reasonably ask ourselves: Can the National Board ultimately produce the necessary transformation? For the NBPTS to succeed, National Board Certified Teachers must be seen as meeting the forward-looking standards described here. They must be cutting-edge practitioners who not only can help their students achieve on a variety of measures, but can also help spread effective, 21st-century-oriented teaching practices among their peers — using everything from teacher team meetings to rapidly emerging Internet-based social networking tools and “augmented reality” devices. And the assessments process must not only be tied to well-defined teaching standards but also identify teachers who help students learn to develop and use 21st century skills.

The National Board assessment process, just like any other psychometrically derived certification of accomplishment, produces “false negatives” and “false positives.” But is the National Board *a valid process* with the potential to drive the kinds of 21st century teaching needed for America’s economy and its democratic society? In delving into all the recent research on the effectiveness of National Board Certified Teachers, this seems to be the most important question to answer. But first, a brief overview of the National Board Certification process and the costs and benefits that have been attributed to identifying and rewarding NBCTs.

NBPTS: Costs and Benefits

In 1993-94, the NBPTS offered and granted its first advanced certification, using “state-of-the-art” assessment tools that “go far beyond multiple choice examinations” and “take into account the accumulated wisdom of teachers.” The assessments are built from content-specific and student-development-specific teaching standards — all driven by five core propositions:

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

Over the last two decades, the U.S. Department of Education has appropriated \$159 million in federal funds to support National Board Certification — only 0.02 percent of the Department’s \$750 *billion* in outlays for that same period. Approximately \$278 million was funded by non-federal sources (state funds, as well as foundation and corporate support). The funding has helped create the NBPTS teacher assessments, identify highly accomplished teachers, and propagate the National Board Certification process. The National Board promotes a view of teaching as complex work that requires teachers to focus on teaching basic and *advanced* skills and helping students learn more than what is measured on standardized tests — a view that is increasingly controversial.

The number of NBCTs is increasing. While 63,000 strong, NBCTs still represent only about 1.5 percent of the nation’s 3.4 million teachers. Most NBCTs can be found in states like North Carolina, Florida, and South Carolina, where policy-makers have enacted comprehensive incentives for teachers to participate in the process and meet its standards. South Carolina pays NBCTs a \$7,500 annual salary supplement for the life of the certificate; North Carolina awards its NBCTs an annual 12 percent salary supplement (along with significant incentives to take the exam); and Florida offers not only a 10 percent salary increase for achieving National Board Certification, but an additional 10 percent bonus if the NBCT agrees to mentor new teachers.

As will be described in more detail later, teachers who seek National Board Certification almost uniformly voice that the process is the best professional development they have ever experienced. This sentiment holds for teachers who certify as well as for those who do not. For many educators this seems to be a sufficient return on investment, especially given the poor quality or limited relevance of the professional development and university-based graduate programs often made available to teachers.

However, Carnegie's 1986 vision of NBCTs as instruments of reform and promoters of teaching expertise has not yet been realized. Growing evidence suggests that NBCTs, now that they are increasing in number, may be just "all dressed up with nowhere to go." They have an advanced certificate — like doctors, accountants, and engineers — validating that they know and can do something different and important. However, there are too few opportunities for them to serve as catalysts to "uncrate" the "egg-crated" structure of the teaching occupation — where teachers may be expected to teach well, but surely not to distinguish among the skills, knowledge, and accomplishments of various colleagues.

The National Board Certification Process

The National Board assessment process, which spans 24 different certificates across different subject areas and student developmental age levels, includes a portfolio mirroring the rigors of an Architect Registration Examination as well as an online battery of questions measuring a teacher's content knowledge. Both exam parts focus on whether teachers know their subjects and how to teach them effectively to diverse learners — teaching's double helix.

Teachers often describe the portfolio process as grueling, usually taking more than 300 hours to complete. During the process candidates must analyze videotapes of their classroom teaching, assess why their students meet (or do not meet) standards, document their educational accomplishments outside of the regular classroom, and offer evidence of how their efforts improve student learning. The National Board reports that roughly 40 percent of teachers who take the exam achieve advanced certification on the first attempt — a figure that rises to 70 percent by the third try.

In 2001 the assessment process was streamlined, with both the portfolio and assessment entries reduced. In particular, the four classroom-based entries were cut to three — and the two documented-accomplishments entries combined into one. Also the four 90-minute assessment center exercises (6 hours total) were shortened to six 30-minute exercises (3 hours total) with a much stronger focus on content.

Critics Latch Onto Cost, Focus, and Unequal Distribution

As more teachers attain National Board Certification, criticism of the National Board's intent and purpose has intensified on several fronts — growing costs, an overemphasis on pedagogy, and gross maldistribution.

First, with the costs of certification increasing (the assessment fee has risen to over \$2,500), and more teachers becoming eligible for financial bonuses, policy-makers are legitimately asking tough questions about the National Board's cost-effectiveness: Do teachers who gain certification actually produce greater student achievement? Are “the best teachers” (NBCTs) teaching the most challenging students?

National Board critics helped launch the American Board for Certification of Teacher Excellence, which plans to market a much less expensive, more traditional paper and pencil test for advanced certification. In essence, the ABCTE will expect practitioners to demonstrate their content knowledge and show evidence of measurable student achievement gains on standardized tests.

Labor economists, such as Michael Podgursky, also lament the “rising tab” of the National Board process, while decrying what they view as its overemphasis on teachers who “adopt a problem-solving stance to their work” or those who create an “optimal classroom climate.” Criticisms such as these, often made by economists trained solely in traditional quantitative methods, reveal a very particular view of schooling that seems to counter the calls for a *new kind* of teaching and learning by groups like the Partnership for 21st Century Skills. Indeed, the acquisition of 21st century skills would seem dependent upon, among other factors, teachers who can model an effective “problem-solving stance” for students who will spend their lives encountering and solving problems in a rapidly changing world.

Critics also argue that the National Board process emphasizes teachers' professional knowledge at the expense of subject-matter knowledge — and in doing so, does not reveal “how much their students are actually learning.” To be sure, student learning is the crux of teaching efficacy. The question, of course, is: What do students *need* to learn, and how much of what they need to learn can be assigned to the rubric of “subject matter”? As Fadel and his Partnership colleagues noted in their recent *Education Week* commentary, students today need to know how to “apply content knowledge to critical-thinking, problem-solving, and analytical tasks throughout their education,” and teachers must be able to “help them hone this ability and come to understand that successful learning is as much about the process as it is about facts and figures.”

Critics are rightfully concerned about the maldistribution of NBCTs across the full range of America's public schools. The evidence is growing that NBCTs are poorly represented in schools where students need the most

high-skilled teachers. As reported in a well-publicized six-state study, researchers found that only 19 percent of NBCTs teach in schools ranked in the bottom one-third in their respective state's accountability rating system, and they were also far more likely not to be teaching in schools that primarily serve low-income and minority students. Analysts, drawing on these data, have argued that the vast majority of NBCT incentives, while important in encouraging and recognizing accomplished teachers, "are generally divorced from efforts to make the distribution of top-flight teachers more equitable."

In North Carolina, for example, state policy-makers have invested more than \$26 million to encourage and support teachers who pursue National Board Certification. However, while approximately 10 percent of the state's teachers have earned this hallmark of professional accomplishment, a recent analysis shows that 50 percent of North Carolina's NBCTs serve in the 20 percent of schools with the smallest percentage of disadvantaged students. More than one-quarter of North Carolina schools serving poor and minority students have no NBCTs at all. Critics are quick to make the case that as long as states and districts are "spending a lot of money" on NBCTs, the incentives need to focus on getting teachers into schools where they are needed most.

Policy-makers are reacting to their concern about the NBCT maldistribution problem. For example, the governor and the legislature in Georgia approved a law in 2005 that awards teachers who earn or renew National Board Certification status a 10 percent bonus *only* if they work in a school that has been on the state's roster of low-performing schools for two or more consecutive years. California eliminated its across-the-board salary incentives for National Board Certification, but chose to retain incentives for NBCTs who work in hard-to-staff schools. A similar proposal from the governor of South Carolina is under consideration by the state legislature.

These policies are consequential. The number of new National Board candidates in Georgia dropped from 1,461 in 2003-04 to 284 in 2006-07 — and the number of new NBCTs in the state dropped from 523 in 2003 to 194 in 2006. During the same period, Georgia has not increased the number of National Board Certified Teachers in its high needs schools. These data suggest that just focusing on *single-minded* financial incentives to entice NBCTs to high needs schools is not the answer.

Researchers have documented that NBCTs would be willing to move to high-need schools. But a six-state survey of NBCTs found — overwhelmingly — that financial incentives alone will not lure these accomplished teachers to low-performing schools. Other factors — such as strong principal leadership, a collegial staff with a shared teaching philosophy, adequate resources necessary to teach in high needs schools, and a supportive and active parent community — were far more powerful determinants.

Nevertheless, in response to questions about the impact of NBCTs, more than 150 studies of National Board Certified Teachers have been conducted. Some studies have been commissioned by the National Board itself, others by researchers who may or may not have a stake in the teaching quality fight. Some of these studies are substantial and draw on the canons of sound educational research. Others appear less interested in scholarly principles than in confirming a supposition. One thing is certain: No other profession has so much assembled research on

its advanced certification process as teaching has on National Board Certification.

The methodologies and databases used by the researchers have varied immensely. None is immune to methodological problems or shortcomings. Decisions researchers make about selecting their samples, what variables to include in their statistical equations, or what outcome measurements to use all influence the findings that ultimately surface. As Shulman, also one of our nation's foremost educational psychologists, recently argued:

We need to give up the fantasy that any single study will resolve major questions. We need to recognize that research evidence rarely speaks directly to the resolution of policy controversies without the necessary mediating agencies of human judgment, human values, and a community of scholars and actors prepared to deliberate and weigh alternatives in a world of uncertainty.

One thing is sure: The research does not provide clear evidence as to efficacy of the National Board process. However, some glimmers of light suggest several policy paths educational decision-makers could take and the direction the National Board itself should follow.

The NBCT Research

To determine whether the National Board is an instrument of 21st century school reform, researchers need to answer at least three broad, interlocking questions:

1. Does the National Board process help teachers learn to teach differently?
2. Are NBCTs more effective than non-NBCTs in helping their students learn at high levels?
3. Do NBCTs currently spread their knowledge to other teachers, and if not, how could they?

The second question is unarguably the most important — and the one in which policy-makers and the public rightfully are most interested. But the answers to questions 1 and 3 also have significant public policy implications. Answering the first question would reveal critical information about both costs and content. Answering the third would uncover critical information about scalability and institutionalization.

The logic goes like this: If the National Board process hones in on the right content and is cost-effective, then can NBCTs teach more effectively? If so, then what are the conditions that will allow them to do so?

Researchers are just beginning to ask and answer these questions. What follows are reflections on several significant studies that focus on teacher learning, the effects of NBCTs on student learning, and the effects of NBCTs on school improvement.

Effects of the National Board Certification Process on Teacher Learning

One set of studies focuses on the National Board process as a teacher-learning opportunity. Drawing primarily on self-reports from representative samples or case studies, the research deserves some currency. While absent of student-outcome measures, these studies do capture systematically how teachers themselves evaluate the certification process.

Overall, surveys of NBCTs consistently reveal that teachers view seeking the advanced certificate as the *best professional development* they have experienced. One survey, administered by the National Board in 2001, found that 92 percent of candidates reported the certification process had made them a better teacher. A 2007 nationwide survey of almost 8,200 NBCTs found that more than 90 percent claimed the process had improved their teaching and more than 82 percent claimed that the process had taught them “to more effectively select, adapt, or create curriculum materials for [their] students.” More than 80 percent reported that going through the process promoted “more innovative teaching approaches or ideas.”

Different researchers have found that the process has led to a “revitalization of practice”—stimulating teachers to be more reflective about their teaching.

Carol Cohen and Jennifer Rice King, in an extensive examination of 10 different NBPTS support programs, concluded that “NBC as a form of professional development exhibits many aspects of high-quality [training]” and is “in the same range as or less expensive than other approaches.” The research, conducted under the auspices of The Finance Project, a well-respected, independent public policy think-tank, found that National Board candidates voiced uniform support for the process as a powerful form of professional development. Cohen and King specifically identified the unique learning that National Board candidates experience as they assess student work, examine videos of their own lessons, and document their accomplishments in working with their students’ families and community as well as with their colleagues within their own professional community. The research team highlighted these quotes:

“Nothing comes close [to the National Board process]. . . . I never had any professional development that is self-revelatory like this.” – National Board Certification candidate from Cincinnati

“[Unlike] a master’s program,” with the National Board “you get to take a year-long look . . . at your practice, and apply it right away.” – San Antonio candidate

“My students gained enormously. What I was doing [with the National Board and] with the curriculum — it upped the bar.” – Candidate supported by Stanford University

“I consider [National Board Certification] really appropriate professional development because it made me look at what I did.” – San Diego County candidate

These positive sentiments from candidates for National Board Certification are now borne out by more sophisticated research. Recently, Lustick and Sykes (2006) conducted one of the first empirical investigations of what NBCTs actually learn as a result of their participation in the assessment process.

In a two-year, quasi-experimental study of 120 candidates seeking the Adolescence and Young Adulthood/ Science (AYA Science) certificate, the researchers, using structured interviews and observations, found significant differences (with an overall effect size of 0.47¹) in what teachers knew before and after going through the process. After controlling for certification status and school characteristics, teachers demonstrated the most significant improvements in the “scientific inquiry and assessment” standards. In particular, Lustick and Sykes found that science teachers gained considerable knowledge in how “to develop in students the mental operations, habits of mind, and attitudes that characterize the process of inquiry.”

Perhaps most importantly, Lustick and Sykes found that teachers “improved knowledge and understanding of science instruction” irrespective of whether they achieved certification. That said, while 40 percent of the study’s participants showed evidence of “dynamic learning” that changed their teaching beliefs and practices, another 40 percent seemed to display only “technical learning” that they may not necessarily apply in their classrooms. This indicates that becoming NBCTs may mean that teachers demonstrate they know how to teach to high standards, but do not always use that knowledge on a day-to-day basis — a theme I will return to later.

While more needs to be understood about what NBCTs learn in the process of becoming Board Certified, teachers’ voices offer valuable context. Connie Hill, an NBCT from South Carolina, noted the impact of the process on both her teaching and her students’ achievement, during a conversation in a virtual teacher community hosted by the Teacher Leaders Network:

As I worked my way through the NBPTS process, I found myself constantly looking for new ways to involve and engage my students in their own educational process. I looked for ways to include choices that would let them express their knowledge and skills through multiple intelligences. I found myself constantly evaluating lessons after the fact and going back and adjusting them so that the next time I used them, they (and I) would be better. The entire National Board process definitely made me a better, more reflective teacher. Student test scores went up, and my students showed some greater understanding of the importance of their classroom performance.

¹Effect size (ES) is a statistic that measures the magnitude of a treatment, like class size or National Board Certified Teachers on student achievement. Effect sizes can also be thought of as the average percentile standing of the average treated (or experimental) participant relative to the average untreated (or control) participant. Statisticians consider an effect size of .47 (i.e., the mean of the treated group is at the 47th percentile of the untreated group) as representing a “medium,” as opposed to a “strong” or “weak” intervention. Given methodological issues in educational research, an effect size of .47 is considerable.

Robyn Hilger, an NBCT from Oklahoma and her state's 2006 Teacher of the Year, described how she let go of an initial suspicion not dissimilar to the sentiments of National Board critics generally:

The National Board process has been the most influential and beneficial professional development activity for me as a teacher. I have to admit that I was a skeptic at first. I knew that there was still much I needed to learn about teaching, but I felt that I was already doing a great job in my classroom, and I was unsure about just how much this would help me. However, after working just a few weeks in the process, I realized that this was going to be a life-changing experience. [The process] forces teachers to come off our "classroom islands" and become part of a larger network.

Kathy Drew, an NBCT from North Carolina, described a specific moment of realization she might not otherwise have had and that led her to improve her practice:

It was during the reflections portion of the National Board process that I realized I did not know how to teach writing. . . . The process helped me have a better understanding of how students learn [to write]. . . . Each year since I have become Board Certified, my students' writing scores have improved.

These voices can help policy-makers and the public understand how the National Board Certification process improves student learning by helping teachers examine their own teaching at deeper levels. It may also be that listening to teacher voices can offer clues to when the process does not yield improvement.

Effects of NBCTs on Student Achievement

Since its inception, critics have contended that the National Board adds another layer to an already unwieldy teacher certification process, with no discernible impact on student achievement (as measured by standardized tests). However, at this point at least eight significant studies have examined possible links between NBCTs and student achievement. Four studies revealed that students of NBCTs outperformed their counterparts. The other four produced mixed findings. Each study has its own methodological imperfections, but all can and should inform both policy and practice.

The “Positive” News

In one of the first studies linking NBCTs to student learning, Lloyd Bond and colleagues found that on 13 dimensions of accomplished teaching NBCTs outperformed a match sample of teachers who did not gain certification. Bond’s research employed a blind study with trained assessors who observed classroom teaching, interviewed students, and collected work samples. It revealed that students of NBCTs produced higher quality work in their English/Language Arts classes and demonstrated higher order thinking skills. More than 74 percent of NBCTs’ students demonstrated “deep understandings” of the English curriculum content, as compared with only 29 percent of non-NBCTs’ students. The findings did not mean that *all* NBCTs were more effective in producing higher quality work in their students. However, they were more likely to do so.

Podgursky has portrayed the Bond study as “tell[ing] us only that teachers who were certified by the National Board were more likely to display the types of behaviors the National Board favors.” His criticisms focused on inadequate student achievement data (insufficiently objective and with few controls in place for prior achievement) and biased sampling (oversampling of high-scoring NBCTs and low-scoring non-NBCTs).

Bond responded with a stinging essay, published by the National Board, stating that his sample was chosen to “enrich and inform” how the National Board process captures teachers who can elicit a “depth of student understanding of concepts and principles targeted in instruction.” Bond described how teachers who are certified by the National Board are far more likely to teach higher levels of thinking, and how their students, in the work samples collected, demonstrate higher levels of learning. Bond’s response carefully posits that standardized tests are not the only worthwhile student achievement assessments.

Labor economists Dan Goldhaber and Emily Anthony, in a 2004 large-scale study, found that National Board Certified Teachers were far more likely to improve student achievement. Over the course of a year, NBCTs in the study produced the equivalent of 1.5 more months of learning than their non-NBCT counterparts.

Goldhaber and Anthony drew on more than 600,000 student observations and more than 32,000 teacher observations that included “valued-added” pre- and post-end-of-year test scores in math and reading (from 1996 to 1999). Goldhaber and Anthony carefully looked at the student achievement effects generated by “current” and “future” NBCTs (those who became certified after 1999), as well as those who were unsuccessful in achieving certification.

Although in some cases the statistical differences were reported to be small, the researchers found consistently that NBCTs were more effective at raising student achievement than teachers who had pursued but failed to obtain certification. The effects were much greater with younger (e.g., grade 3) and low-income students. However, the researchers did find that unsuccessful applicants were “actually less effective teachers in the year they applied” to the National Board. They also found “mixed findings” about NBCT effectiveness the year after the teacher was certified. Nevertheless, a number of critics admit that the “Goldhaber effect” has been a boon for the National Board.

Drawing on the large number of NBCTs in the Miami-Dade County (FL) Public Schools, researcher Linda Cavalluzzo and her colleagues found that the advanced certification process made a profound difference. As in the Goldhaber and Anthony study, the researchers were able to more effectively take into consideration differences in student attributes that may correlate with National Board Certification. Each of 108,000 student records, assembled from 1999 to 2003, was linked to a subject-area teacher to create a comprehensive data set containing information on teacher characteristics, student background and behavior, and school environment.

In examining the association between teachers and student gains in mathematics in the 9th and 10th grades, the researchers found that NBCTs’ students gained 12 percent of a standard deviation on test scores. In addition, all else being equal, Hispanic and African-American students gained even more. In the end, students whose teachers were Board Certified fared far better than those with teachers who did not certify or had dropped out of the process.

An Arizona State University research team found, in analyzing four years of data from 35 classrooms, that students of Board Certified teachers performed at much higher levels than a matched sample of students taught by non-NBCTs. In three-quarters of the 48 comparisons, the students of NBCTs outperformed their counterparts. Due in large part to small sample sizes, the results were considered statistically significant in about one-third of those cases.

Audrey Vandervoort, the principal investigator, concluded that NBCTs “were able to get in about 25 more days of instruction in the typical 180 day [school year].” In her test score analyses, Vandervoort was not able to take into consideration differences in student attributes that may correlate with National Board Certification, and little is known about the non-certified teachers in the study. However, in addition to their student achievement analyses,

the Arizona researchers sought systematically to discover how principals viewed NBCTs. The results were impressive: 85 percent of principals surveyed said NBCTs in their schools were among the best teachers they had ever supervised, while 75 percent reported observing positive changes in the practices of teachers who sought National Board Certification.

These four studies represent what professionalism advocates consider to be “positive news” for NBPTS. The next three studies reviewed here raise questions about whether the National Board actually identifies effective teachers. In two of these studies, problems with sample size and inadequate controls for changes in the standardized tests indicate the need for careful consideration of these findings. However, they are worthy of investigation for potential lessons learned.

The “Mixed” News

In a study commissioned by the National Board, William Sanders, using his highly publicized value-added methodologies, found that students of NBCTs did not perform any better than students of teachers who engaged in the process and did not achieve certification or those who did not participate at all. Sanders’ study involved test records from two large school districts in North Carolina — Charlotte-Mecklenburg and Wake County — both of which have been promoting National Board Certification for some time. Sanders drew on data from 35,000 student records and 800 teachers in examining mathematics and reading test scores for grades 4 through 8 from 1999 to 2003. However, Sanders’ report offered little information on the actual number of teachers studied in each of the grade levels or the subjects examined. His study also contained limited information on the teachers with whom the NBCTs were compared, and how teachers were identified for placement into each group.

In concluding that students of NBCTs “do not receive better quality teaching than students of other teachers,” Sanders made short shrift of his own data indicating that NBCTs outperformed non-NBCTs on 27 out of 30 measures. While these differences were not statistically significant, the pattern suggests a possible positive effect. Sanders also chose not to elaborate methodologically on the differences in his control and treatment groups, other than National Board status. While these methodological considerations did not concern some critics, others like Kate Walsh of the National Council for Teacher Quality recognized a problem. In an electronic newsletter, she wrote:

On style, Sanders does seem to relish delivering the bad news. He doesn’t seem too concerned with making the usual qualifications, conditions, and caveats cherished by most academics, stating flatly and repeatedly that NB teachers are no better and no worse than all other teachers. Case closed. However, the strength of his conviction in the face of his actual data should cause some degree of uneasiness. For example, why doesn’t he point out that NB teachers were almost always better than non-NB teachers on 27 out of 30 measures, even if the individual results weren’t significant? The accumulated consistency of these positive findings suggests something besides mere random chance.

Another study, drawing on North Carolina data, also found little effect of NBCTs on student learning. At first glance this study could suggest “more bad news” for the National Board. Researchers from the University of North Carolina, Greensboro, and the College of William and Mary found little if any statistical difference between the math and reading test scores of NBCTs and those of highly and least effective non-NBCTs. The study’s sample was drawn from four North Carolina school districts. In addition, overall student gains were used to create a Teacher Achievement Index, which was then used to compare the teaching practices of *highly effective* and *least effective* teachers across the entire study sample. Interviews, reviews of student assignments, a Teacher Sense of Efficacy survey, and classroom observations supplemented the test score data.

Classroom observers found no differences among the three teacher groups in their questioning techniques, student engagement (time-on-task), and management strategies. In the observers’ overall ratings on several teacher effectiveness categories, *highly effective* non-NBCTs were rated significantly highest in classroom management, classroom organization, positive student relationships, and encouragement of student responsibility. On the other hand, NBCTs as a group tended to score higher than *highly effective* and *least effective* non-NBCTs in planning and on the Teacher Sense of Efficacy survey. They also scored significantly higher than these teachers on the “cognitive challenge” rating of their student reading comprehension assignment.

The researchers went to great lengths to design a study that not only examined test score results but also the teaching practices of NBCTs and non-NBCTs, irrespective of the student test scores they produced. But the researchers had a difficult time finding and sustaining adequate sample sizes for their study. For example, the research team sought to include all 5th-grade teachers from four school districts (two urban and two rural), but only three could provide matched test data. The ensuing test score analysis, designed to measure gains of the teachers’ students from the 4th to the 5th grade, could only be performed on 307 teachers, *of which only 25 were NBCTs*.

In its report, the research team was frank about the sampling difficulties and warned readers not to read too much into their findings. The team reported that it had been limited by too few participants, which led to problems in trying to “measure teaching practices in a fine-grained enough manner to detect significant differences between teachers.” In addition, the school districts did not (or could not) provide all requested information and often could not accurately link teachers with the student achievement data. For example, they found that the teacher of record during student testing was often the teacher *administering the test*, not the teacher *who taught the students math and/or reading*.

In addition, Doug Harris and Tim Sass, drawing on the “universe of public school teachers and students in Florida over a five-year span (1999-2004),” investigated whether NBCTs were more effective than other teachers, as well as whether the assessment process improved teaching for NBCTs and fellow teachers in their schools. They used different statistical tools than either Goldhaber or Sanders and included elementary, middle, and high school teachers in their sample. Their findings were definitely “mixed” at best.

The large database enabled the researchers to focus on teachers in grades 3-10 and draw on the math and reading

results of two different standardized tests — both the state’s high-stakes criterion-referenced test (FCAT-SSS), derived from the Sunshine State Standards, and a norm-referenced test (FCAT-NRT) designed to compare students to those in a national sample. Harris and Sass also assessed the student achievement effects of NBCTs who served as mentors in their schools.

Harris and Sass generally found few differences in student achievement gains between NBCTs and non-NBCTs. In their preliminary analyses they also discovered that NBCTs were no more or less effective with high- or low-performing students. The data suggested that teachers did not improve as they went through the National Board process; in fact, in some cases they became less effective. In addition, they found that being fully licensed and holding an advanced degree appear to be more positive predictors of student achievement than National Board status.

The researchers sought to control for other factors that affect student achievement, including unmeasured student characteristics and peer influences. However, in applying their statistical adjustments they may have biased their findings. For example, in using school-fixed effects the researchers had to omit much of their teacher sample. Also, the researchers sought to determine the effectiveness of NBCTs over time, using longitudinal estimates of individual teachers’ performances. They attempted to do so by examining the effectiveness of NBCTs in their pre-certification, certification-attempt, and post-certification years. However, as revealed in a footnote of their report, they were not able to assemble longitudinal data for most of their analyses.

Notwithstanding the methodological issues raised in the study, Harris and Sass’s negative findings could raise serious questions. It is important to note, however, that the students of NBCTs performed consistently better in reading than students of non-NBCTs on the FCAT-SSS — which is the criterion-referenced test based on the state’s curriculum. In other words, on the test tied most closely to what teachers are expected to teach, students of NBCTs outperformed their non-NBCT counterparts.

The researchers also sought to determine whether more NBCTs in a school yields “positive spillover” effects on student achievement. The short answer appeared to be “no.” They found that having more NBCTs in a school does not seem to have much effect. However, they also found that, while NBCT mentors do not consistently produce higher student gains than other NBCTs, the more NBCT mentors a school has and uses, the higher their students achieve. This finding held for both math and reading. Despite the concerns raised by their report, the researchers did conclude that National Board Certification “provides a positive signal of teacher productivity in general.”

Finally, Tom Kane and colleagues reported mixed findings from a very innovative study. Using a random-assignment methodology, the researchers compared results generated by NBCTs to those of non-certified candidates and other non-applicants teaching in the same schools and grade levels in the Los Angeles area. The researchers used scale scores from the National Board assessments to determine if a more precise score was more or less likely to be related to student achievement gains. They also examined whether the 10 sub-scores from the individual portfolio and assessment center exercises were predictive of student achievement gains. The random-assignment data were collected

during the 2003-04 and 2004-05 school years, with longitudinal data assembled during the 1999-2000 through 2001-02 school years. A large number of National Board candidates in the district — not part of the randomization — were included in the study as well. The study drew on students in grades 2 through 5, using the Stanford 9 achievement test, and then the California Achievement Test.

Several methodological issues surfaced. For example, the district switched standardized tests. In addition, the researchers had to contend with high student mobility — e.g., on average, teachers lost about 15 percent of their students from the beginning to the end of the year. As a result, in their non-experimental sample, the researchers found a statistically significant difference among candidates and non-candidates in terms of the proportion of their students with missing math scores. Finally, the National Board candidates were more likely to teach students who came to them with stronger test scores.

The researchers reported several interesting and provocative findings: First, in the experimental sample, they found that those who achieved certification produced greater student achievement gains (by 0.2 standard deviations in math and language arts) than those who did not achieve. But the students of NBCTs did not fare any better than those of the non-candidates. Also, they found similar results, albeit to a lesser extent, when examining the non-randomized sample of teachers. Students of NBCTs scored better than those of unsuccessful candidates — and the students of non-applicants landed somewhat in the middle of the two groups.

In addition, the researchers discovered that the ways the National Board weighs each of the 10 components “[may] not maximize its ability to predict teacher impacts on students’ math and reading achievement.” They also found that candidates who achieved certification only after several attempts did not produce the higher student achievement gains generated by “first-time” NBCTs. Finally, higher NBCT scale scores were related to greater gains in student achievement in math — although not language arts. Granting that their findings were mixed, the researchers concluded that National Board “scores show considerable promise in predicting future student outcomes.”

Effects on School Improvement

Six years ago, Yankelovich Partners conducted a survey of 4,600 NBCTs. Yankelovich found that 90 percent of those surveyed reported that the National Board process helped them with their “credibility” with other teachers and 81 percent reported that new leadership opportunities emerged because of earning the certificate. Other researchers have described how undergoing the National Board process can encourage collaboration among teachers. However, these self-report studies, while helpful, do not provide much policy guidance or assistance in explaining the impact NBCTs might have in school reform. Two recent research projects do address this issue.

Gary Sykes and colleagues applied sophisticated research tools to the results of state- and school-level surveys in Ohio and South Carolina and to follow-up case studies in 14 schools. Their goal was to determine the organizational impact of NBCTs and how their leadership responsibilities are fulfilled or not. It is one thing for NBCTs to be good teachers; it is another for their knowledge and skills to be used and spread. Sykes and colleagues note:

NBCTs cannot improve schools by themselves: their actions would be dependent, at least in part, on the actions and perceptions of others around them, including those with administrative oversight.

For the most part, the researchers uncovered positive findings. They found that “all NBCTs are involved in leadership activities within their schools” and that their involvement in leadership activities increases over time. They also found that NBCTs had sought to become Board Certified because they wanted to improve their teaching and student learning. In addition, the NBCTs planned to stay in teaching longer than the other teachers. For example, 62 percent of Ohio NBCTs planned to stay in teaching “as long as they are able,” compared to 37 percent of all Ohio teachers. South Carolina findings were similar, with 50 percent of the NBCTs and 35 percent of a statewide sample of teachers planned to teach as long as possible. “Late starters,” or those more recently certified, were less likely to report they were going to leave teaching and education.

In both states, NBCTs were more likely to report moderate to high influence over school-wide policy, often involving decisions usually reserved for the administration. “Early start” NBCTs (those who were certified earlier) reported significantly more influence than “later starters,” including more involvement in district leadership activities.² However, at the school level, taking into consideration years of experience, educational level, and gender reveals that NBCTs had no more influence than non-NBCTs. In explaining this finding, Sykes and colleagues suggested that “NBCTs are found in schools where influence is higher than average” — meaning they tend to teach

²Interestingly, Kane and colleagues found that “early-start” NBCTs, compared with those who were “late-starters” produced higher student achievement gains. Sykes and colleagues found “early starters” more likely to lead.

in schools where professionalism is expected and administrators trust and need teachers to lead. This makes sense. As noted previously, NBCTs tend *not* to teach in low-performing schools, where most teachers tend to be young and/or under-prepared and administrators may exert more control over all faculty actions.

The scholars' most intriguing findings revealed more about "spillover effects" that had surfaced in other studies. To address this complicated issue, Sykes' team administered surveys to NBCTs and their colleagues at about 1,500 schools and then used new statistical techniques to reliably measure who influences whom. They found that NBCTs assist other teachers, on average, about 0.58 more than non-NBCTs in their school. The researchers claimed that "an effect of 0.58 suggests that if there are 10 NBCTs in a school, an additional six teachers or so will receive help with instruction that will reflect the experience of NBCTs (assuming no teacher receives help from more than one NBCT)."

The investigation revealed that NBCTs reported increased confidence in their teaching and leadership abilities, but they were often "reluctant to differentiate themselves from their colleagues." This means that teaching's long-standing egalitarian culture continues to hamper the potential of NBCTs to guide their peers. Many teachers, even NBCTs, are not ready to lead. It may also be that colleagues and administrators do not understand the National Board process and its potential for driving school improvements. The researchers discovered that many teachers and administrators believe that NBCT achievement is more due to effort than excellence in teaching, perceptions that put a damper on NBCTs' leadership potential. The case studies also revealed that in some cases NBCT leadership potential was limited because "good teachers" would sometimes seek certification and not obtain it — and vice versa. This outcome tended to undermine the credibility of the process. The next study reveals even more about these issues and how NBCTs can help improve their schools.

Daniel Humphrey and his research colleagues also found that NBCTs sought to become National Board Certified because they wanted to improve their teaching and their students' learning. The researchers, in conducting a national survey, found that 95 percent of the NBCTs sought advanced certification to improve student learning; 88 percent did so to increase their "credibility" as teachers. Not surprisingly, 90 percent also sought certification for the financial rewards offered. Most of them wanted to "reinforce their own sense of professional efficacy," but "did not link Board Certification to larger or more expansive professional objectives" (with the exception of earning more money). Only 44 percent sought to become National Board Certified so they would have "the opportunity to influence changes at [their] school." This means that many teachers, including NBCTs, teach in schools where both they and their administrators do not expect them to lead.

The researchers found that NBCTs are not likely to be used systemically to help turn around low-performing schools. Only 38 percent of the NBCTs reported that their principal "uses NBCTs as a resource for school improvement," while slightly more than half (58 percent) asserted their administrators make "an effort to include [them] in roles beyond the classroom." Extensive case studies in lower-performing (but improving) schools in California, Ohio, and North Carolina noted a number of similar obstacles that NBCTs face in spreading their teaching skills to

others in their building, including: (1) the lack of administrator support for and knowledge of the National Board Standards and assessment process; (2) too little time for teachers in general to work with and observe one another; and (3) the critical need among NBCTs for professional development in the area of adult leadership.

For most of the schools studied and teachers surveyed, most NBCTs reported that their principals do not know much about how the certification process can be used for professional development. However, the national study identified one outlier, in North Carolina, where educators are learning how to cultivate NBCT leadership and apply the knowledge and skills of expert teachers to spur school improvement and increase student achievement. In this rural school, a principal and a growing cadre of NBCTs (now more than 50 percent of the faculty) have created a rapidly improving community of learners, with 85 percent of students meeting grade-level standards.

D. F. Walker Elementary, located in Edenton, a small town in the state's poorest region, is now a North Carolina School of Distinction and recently met most of its Adequate Yearly Progress (AYP) targets under No Child Left Behind. The school was just named the 2007 North Carolina School of Character. The National Board Standards underpin the school's teacher evaluation and professional development processes. The principal and assistant principal — *who are also NBCTs* — work hand-in-glove with teachers to create a professional learning community where teachers are expected to individualize instruction for students. Professional practice is made public as teachers watch and review one another's teaching. Grade-level and team meetings, perfunctory in many schools, are forums for debate about effective teaching strategies. One teacher described the culture of questioning at D. F. Walker that has bubbled up and been encouraged by NBCTs and the certification process:

Where some other staffs may just accept 'We're going to do it this way,' here you're going to *tell* me why. . . . You're going to give me multitudes of reasons why it's good for these kids for us to do this program or this activity or curriculum. . . . Textbooks don't tell me what to teach, the standards do. I don't think we would have questioned [teaching practices] like this five years ago.

At D. F. Walker, teachers are expected to become NBCTs and are well supported in their quest. The superintendent, the school board, and community leaders have come to understand and embrace what it means for teachers to achieve National Board Certification. Board Certification is valued and celebrated. While NBCTs are seen as "first among equals," all teachers in the school are expected to improve and to lead their colleagues, and the National Board process is the major tool for doing so. D. F. Walker serves as an "existence of proof" that NBCTs *can be* an instrument of reform — but many other factors need to be in place for them to become successful reformers.

Making Sense of the Evidence

Several years ago, David Berliner, one of the nation's most respected educational psychologists, argued persuasively that educational researchers do the *hard-to-do* science, while the so-called hard scientists who design bridges, send rockets to the moon, or develop new drugs actually do the *easy-to-do* science. Berliner, in his essay, notes that educational researchers “do [their] science under conditions that physical scientists find intolerable.” He describes how complex interactions between teacher qualification and other variables — like high student mobility, number of new students entering class mid-year, or unemployment and divorce rates — can befuddle even the most accomplished education researchers.

These factors can clearly confound efforts to determine whether National Board Certified Teachers are more effective in raising student achievement than those who seek certification and do not attain it. Consider the following eight methodological and conceptual issues raised by these and other National Board research studies and reviews:

1. Most all of the research draws on very different datasets of varying quality and size. Even when researchers like Goldhaber and Sanders use the same testing database in North Carolina, they rely on very different samples (statewide versus two districts), time frames, and similar but still different statistical tools. They may have used different data from different tests. For example, while Sanders reported that the state's standardized tests changed during the years of his study, he did not describe how he controlled for this change, if at all.
2. Some of the standardized tests on which NBCTs are being judged may not be sensitive to the value “added” by the NBCTs. Teachers who are National Board Certified tend to teach higher achieving students, and many of the assessments, like the one in North Carolina, have ceiling effects. As a consequence, NBCTs may not be able to demonstrate as much gain (because their students enter their classroom already achieving at high levels) as non-NBCTs teaching different student populations.
3. Varied approaches to statistical analysis clearly yield varied results. Goldhaber and Sanders used different types of value-added analyses. When Harris and Sass used school and student effects to control for unobserved aspects of students' backgrounds, they had to discard much of the teacher sample from the comparison group, which in turn could have explained more of the variation in teacher effectiveness among NBCTs and non-NBCTs.

4. Most researchers do not fully consider that there are many effective teachers who are *not* National Board Certified. The advanced certification process is a voluntary one — meaning that other accomplished teachers, who may “land” in a comparison group sample, could earn certification status if they tried. In this circumstance, the effect of NBCTs on student achievement would be underestimated because they are being compared to teachers who, if they had chosen, could have achieved the same status.

5. In school districts like Charlotte-Mecklenberg and Wake County — where Sanders conducted his analyses — NBCTs are expected to lead and spread their expertise. If there are National Board “spillover effects,” as some researchers have claimed, then one should find in the Sanders dataset less difference in the student achievement gains generated by NBCTs and non-NBCTs.

6. The nature of the test being used to link student and teacher performance may also explain the different results from different researchers. For example, in the Harris and Sass study, students of NBCTs outperform their counterparts on Florida’s criterion-referenced test but not the norm-referenced one. Norm-referenced tests are not designed to measure what teachers are able to teach effectively (only to measure how much students learn in comparison to a national norm group). Harris and Sass, in their study’s conclusions, remind their readers that “learning about test differences is an important avenue for future research” when one considers assessing the effects of NBCTs as well as other educational interventions.

7. The limited impact of NBCTs on student achievement may have more to do with dysfunctional school organizations and poor working conditions than less-than-effective teaching. Dr. W. Edwards Deming, legendary for his role in reinvigorating Japanese industries after World War II, has drawn on a wide variety of private sector data in developing his “85-15 rule.” According to Deming, 85 percent of workers’ performance is determined by the system in which they work, and the remaining 15 percent by their individual effort. Both the Sykes and the Humphrey studies speak boldly to how the National Board process helps teachers learn to teach differently, but also how administrators and teaching colleagues can undermine the effectiveness of NBCTs, or at least limit the spread of their expertise.

8. Finally, the National Board assessments, which were changed in 2001 to streamline the process and focus more on content knowledge, may need to be improved to uncover more differences between those who will certify and those who will not. It may be that the streamlined assessments are not robust enough to detect different teaching effects, based on current standardized tests. Perhaps if the NBPTS assessment center exercises focused more on content-specific pedagogy, as opposed to mostly knowledge of content, then the National Board process might yield more teachers whose students performed better on standardized tests.

These eight explanations are not meant to discount any of the research studies discussed here — only to better define the complex methodological context under which their respective findings must be considered. Each study should be taken seriously, in context, by policy-makers as well as those who are charged with leading the National Board.

Recommendations

These analyses suggest several recommendations for policy-makers and leaders of the National Board to consider. They come to light not only from an intensive examination of the research evidence but also the careful consideration of the wise words of NBCTs themselves. For example, at a recent meeting of the National Academies, Valdine McLean, one of our nation's most outstanding high school science teachers, who is both a Milken winner and an NBCT, recounted:

The [NBCT] process pushed me to teach special needs students in ways that I had not. The portfolio process pushed me to analyze and design lessons to help these students make progress. The video analysis of my teaching was an incredible and humbling tool. I learned how to more carefully rethink how I presented lessons and ask my students more powerful questions. I learned a great deal about differences in my teaching of chemistry in first and third periods. It was very dramatic — like night and day! The processes showed me my “teaching reality” and the gaps of where I wanted to be with my students. As teachers we are too busy to stop and reflect — we have the wagon train to keep moving down the road and often we don't inspect the wagons until a wheel falls off. The National Board process helped me ensure that my teaching wagon was in good condition at each road mile — not just the final destination.

For Policy-makers

First, the overall effects of NBCTs on student achievement appear to be positive, and policy-makers should continue to find ways to encourage teachers to achieve what could be the “gold standard” of teaching. While studies are not conclusive or without flaws, the weight of the evidence favors the National Board assessment process as an instrument to improve teaching quality. Compared to weak evidence on the effects of current teacher evaluation processes, university-based degrees, and school-district-driven professional development, the National Board assessment process is much more of a *sure bet*. NBCTs uniformly give the National Board process high marks as the most powerful professional development they have experienced. Teachers report on the positive impact of the assessment process, even if they do not meet the standards and gain certification.

Second, policy-makers should craft specific school policies and programs that cultivate and spread “highly accomplished” teaching for high needs schools, or the overall effects of NBCTs on student learning inevitably will be diminished. Policy-makers must look at how the educational system undermines the promise and potential of NBCTs as well as other accomplished teachers. Administrators often do not know how to utilize teacher leaders, and school organizations tend to isolate teaching expertise. Several studies show the potential “spillover effects” of

NBCTs who can help other teachers improve. Others do not. Several studies suggest strongly that policy-makers create new training programs for administrators on how to utilize NBCTs, utilize trained NBCTs as mentors and teacher educators, and invest in increasing the numbers of NBCTs inside high-need schools.

Third, policy-makers should support more careful studies of National Board effects — and include teacher-based explanations of current and future research on the National Board assessments. Policy-makers deserve clearer explanations of the positive, mixed, and negative news concerning the National Board process and its effects on teacher learning, student achievement, and school improvement. Independent panels need to be created to review studies and help vet them publicly in an effort to go beyond the typical teaching quality debates played out at professional conferences and in the mass media. Most importantly, policy-makers should invest in research reviews that involve NBCTs themselves, whose knowledge of teaching and the assessment process can add considerably to the analytical process. If NBCTs are going to be the leaders envisioned by the 1986 Carnegie treatise, then they must be part of the debate over the efficacy of their own certification process and their profession.

For the National Board

First, the National Board should make more public the evidence on how NBCTs improve the standardized test results of the students they teach and how their efforts may be undermined by — or not relevant to — what is measured. While the National Board process was not designed to improve results on standardized basic skills tests, policy-makers, practitioners, and the public all need to know more about the relationship between NBCTs and test results. Most NBCTs teach subjects and grade levels where student standardized test results *cannot be ascribed to individual teachers*. In fact, given the limitations of current standardized tests (e.g., the lack of properly scaled tests in different grade levels and subject areas), value-added student achievement data are typically available for no more than about 30 percent of elementary school teachers and perhaps 10 percent of high school teachers. But there are a number of NBCTs for whom standardized tests could be part of the National Board's measure of accomplished teachers.

In fact, more research is needed to better explicate how tests do or do not measure what NBCTs do for their students. The results of this research could pave the way for the National Board to improve their assessments and allow for more specific use of standardized test data where appropriate and relevant. In fact, as part of the 200- to 400-hour portfolio process, many NBCTs actually draw on standardized test data in explaining the impact of their teaching. The National Board should commission research that systematically mines these data from the teacher portfolios to better understand how NBCTs may or may not promote higher student achievement gains. Additional research should focus on defining how NBCTs' assessment scores differ by student learning results.

Second, the National Board should make more explicit how, and under what conditions, candidates and NBCTs

learn how to teach differently. The qualitative research is clear: NBCTs as well as applicants who do not gain certification learn a great deal from the process. They uniformly appreciate the quality of the professional development experience — because it homes in on how they teach and forces them to reflect on why their students learn or do not learn. For NBCTs this is the pearl beyond price. Much more needs to be known about how the National Board process increases a teacher’s hunger for professional growth, transforms professional development practices in schools (like North Carolina’s D. F. Walker Elementary), and sparks the redesign of university-based advanced degree programs. Without such investigations, the cost benefits of the National Board process will remain too much of a mystery.

Third, the National Board should help make more explicit how NBCTs may or may not teach consistently to the standards they have formally met — and work with schools on processes for maintaining high levels of proficiency. Becoming an NBCT means that teachers have demonstrated through an extensive portfolio process and a day-long subject matter exam that they can teach to the five propositions in their content area and grade level. This does not mean they will do so on a regular basis. Just like board certified cardiologists who do not perform to the highest standards every day in their hospitals, neither do all NBCTs perform to the highest standards every day in their schools. More research like that generated by Sykes and colleagues needs to be conducted to better understand the role that the school organization can play in encouraging and sustaining highly accomplished teaching among NBCTs and their colleagues.

Fourth, the National Board should examine its current assessments, many of which have conceptual and psychometric origins in the mid-1990s, and evaluate their utility in measuring highly accomplished teaching for the 21st century. The assessment process may not be fine-grained enough to distinguish between those who gain certification and those who do not, especially when student performance is gauged by the current standardized tests used by recent researchers. But I am not recommending that the National Board process be changed to better determine the effects of NBCTs on student achievement as measured solely by multiple-choice basic skills tests. Instead, revisions also need to focus on measuring how teachers help students solve problems, create new knowledge, and develop global awareness — skills today’s students will need to be successful in 21st century society. Student results are the coin of the realm.

In one sense, the National Board assessment process, which places a premium on teachers who understand how and why students learn, is timeless. However, new technologies can not only more readily engage 21st century learners, but also offer new databases for teachers to mine in their quest to determine what motivates students and what helps them learn. Rapid advances in digital technology are changing the ways students engage in learning and redefining the skill sets needed to be successful in the new century — and National Board assessments need to match these imperatives and even pave the way for better student learning measures to be developed and used.

Conclusion

The research presents a mixed picture of the National Board. Overall, however, it is clear that the assessment process has become a boon for teachers' professional development, and that students of NBCTs tend to perform better on both standardized tests and more in-depth measures of academic learning. Even when researchers find "mixed effects" of NBCTs on student achievement (as measured by current standardized tests), they also tend to find that as a group these teachers are more likely (than non-NBCTs) to "cognitively challenge" their students. This unique teacher assessment process was designed to capture how teachers think about their teaching and how they adapt their lessons to diverse learners, and the National Board can point to evidence that both of these objectives are being met to some degree.

The National Board process is expensive, compared to the simplistic paper-and-pencil exams generally used for licensing teachers. Expecting teachers to pass a \$2,500 advanced certification test that requires many months' preparation — and expecting school systems to support them in this effort — is much different than the expectations attached to a \$500 sit-down exam. Expecting teachers to be able to demonstrate that they understand student assessment data and teach adaptive lessons to diverse learners is much different than expecting them to demonstrate knowledge that primarily relates to subject matter. Ultimately, we get what we pay for. If teachers take the time to develop more sophisticated teaching and assessment strategies, they will want to use them, and their students will benefit.

In public education many tensions exist: between costs and quality; between public regulation and professional self-governance; between controls that ensure competence among practitioners and those that create self-interested monopolies; and between those who envision a public education system that offers opportunities for all students to achieve at the highest levels, and those who envision a more limited mission and reach. These tensions often play out in rancorous debates among researchers, policy mavens, and politicians, where teachers and teaching-quality solutions are viewed in terms of a zero-sum game. Teacher union officials, administrators and school boards, Democrats and Republicans, and right wing and left wing think tanks often engage in rhetorical battles over the definition of good teachers, how they are prepared (or not), and how they should be judged and compensated. The current debate over whether to professionalize teaching or deregulate it serves as a profound backdrop to the debates over the efficacy of the National Board for Professional Teaching Standards. As Lorraine McDonnell noted more than 15 years ago, "The greatest obstacle to states in their struggle to balance popular control and [teacher] professionalism may well be the inability to resolve the questions of who should evaluate teachers and how they should be evaluated."

Over the next decade, the teaching profession will be profoundly shaped by certain decisions: whether school reform and teaching policies will focus on a prescriptive, narrow school curriculum delivered by under-prepared, inexpensive teachers who have limited teaching knowledge — or whether such policies will support a more ambitious school curriculum developed and led by well-prepared, well-paid, and well-supported teachers who know a great deal about content, teaching, and the specific students they teach. The path we choose will likely depend on how well the teaching profession itself can communicate to the larger public about the choices we face in our education system and the kinds of schools and teachers every student deserves. Public opinion polls have revealed that most Americans want highly prepared teachers for all of society’s children, but the public remains largely uninformed about the policies being promoted that undermine the development of a true teaching profession in this country.

The National Board — envisioned and designed to professionalize teaching — clearly has served as a catalyst for change. The mission the Carnegie Forum articulated 20 years ago holds equally true today:

An essential ingredient of successful education reform is creating a profession equal to the task, a profession of well-educated teachers prepared to assume new powers and responsibilities to redesign schools for the future.

However, the jury is still out on whether the National Board can play a central role that both advocates and skeptics can embrace. Some of the criticism — especially the vehement and vocal variety — comes from antagonists who simply do not want to see America professionalize its teachers, for reasons of money or politics. If the nation’s schools are staffed with more teachers who can pass the National Board assessments and emerge as leaders in their schools and communities, then current policies are more likely to be questioned and challenged — and by those most intimately aware of the everyday impact of such policies on the nation’s students. It must be said that some critics have a vested interest in a less prepared, itinerant, and compliant teacher workforce.

But many other skeptics have raised legitimate concerns about the National Board process’s costs and benefits. First and foremost of these concerns is whether NBCTs are more likely to promote student learning, especially of the kinds demanded by our 21st century economy and democracy. Other concerns include whether the National Board process can spread teaching expertise and if not — why. The dilemma for the National Board is to isolate those criticisms that deserve serious deliberation and create the kind of coalition needed to take both the assessment process and NBCTs themselves from where they are to where they can go.

Within the context of research and National Board Certification, the glass is more than half full — and worthy of filling to the top. Doing so will require a great deal more understanding of the process and much less rancor among the researchers and policy analysts who dominate the discourse. The debate over professionalizing teaching — versus simply deregulating it — must shift to a more substantive, less vitriolic one. Getting both current advocates and skeptics involved in the next phases of development and much needed investigations will be critical. More importantly it will also be essential to involve more teachers like Robyn Hilger, NBCT and State

Teacher of the Year from Oklahoma, who writes about the impact of the National Board Certification process on her professional growth:

I had to refocus not on what I wanted the students to learn, but rather what the students needed to know. This was a huge and much needed paradigm shift for me. I also noticed that while my lessons were well-planned, my assessments were not. I lacked authentic student self-assessment and consistent evaluation measures. It is difficult to see your shortcomings pointed out in such an obvious way. In fact, sometimes I just couldn't believe that I had been so blind. However, this was a critical step in moving my teaching to the next level. As painful as it was to see those weaknesses, it was through their identification that I saw the most growth in my teaching.

The National Board must be equally courageous in identifying and assessing its own weaknesses, because it is teachers like Robyn Hilger (and Jenny Cabrello) that Maria deserves, every day and in every one of her classes.

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