

**TRANSFORMING TEACHING AND LEARNING
THROUGH NATIONAL BOARD CERTIFICATION**

NATIONAL BOARD FOR PROFESSIONAL TEACHING STANDARDS

**Supporting Effective Educator Development (SEED) Grant
CFDA Number: 84.367D**

Absolute Priority 3:
Advanced Certification and Advanced Credentialing

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Introduction

The National Board for Professional Teaching Standards (National Board), along with its strategic partners, proposes *Transforming Teaching and Learning through National Board Certification* for the 2013 Supporting Effective Educator Development (SEED) competition. This initiative is designed to: (1) increase the number of highly effective National Board Certified Teachers (NBCTs) working in high-need schools, especially in Science, Technology, Engineering, and Mathematics (STEM)–related instruction, and (2) develop the pipeline for highly effective NBCTs to serve in career ladder positions that promote teacher effectiveness and systemwide advancement. The initiative will establish collaborative processes for continuous improvement in the partner sites that will be sustained beyond the grant period, resulting in models that will have national significance. Through this initiative, more than 3,500 NBCTs and NBCT instructional leaders will improve teaching and learning for more than 500,000 students.

National Board Certification requires teachers to demonstrate that their teaching practice promotes student learning through assessments of content knowledge and reflective analyses of videos of their teaching and samples of student work. The National Board’s work has been shaped by teachers, and teachers achieve this advanced certification through a rigorous peer-reviewed and performance-based process. National Board Certification assures policymakers and parents that teachers—similar to their counterparts in medicine and other fields—have met the profession’s highest standards.

There are now more than 100,000 NBCTs working in all 50 states. Nearly half work in high-need schools. While currently a small percentage of the nation’s teachers, NBCTs are the largest identifiable group of teachers proven to have a reliable and measurable impact on student achievement. Years of research confirm this impact. Most recently, Harvard University’s

Strategic Data Project (SDP) found students of NBCTs in Los Angeles Unified School District made learning gains equivalent to an additional two months of instruction in mathematics and one month in English language arts (SDP, 2012b). SDP found similar results in Gwinnett County Public Schools, Georgia (SDP, 2012a). Given the accruing evidence of NBCT effectiveness, increasing the number of teachers who have achieved the profession's most advanced certification is essential. It is even more important to concentrate the number of highly effective NBCTs in high-need schools so that students are taught, year after year, by teachers with proven abilities to advance student achievement.

To move from highly effective individual teachers to systems that support widespread highly effective teaching and learning requires more than just increasing the numbers of such teachers. The basic structure of schooling must be changed so these teachers have opportunities to provide instructional leadership without necessarily leaving the classroom. If effective instruction—as measured by student achievement gains—is the ultimate goal of schools and districts, then teachers who have demonstrated such ability should be given the chance to improve their colleagues' effectiveness. Creating career ladder opportunities for highly effective NBCTs builds school cultures that support teaching and learning. It also creates a real and meaningful value proposition for teachers to pursue National Board Certification, attracted by the prospect of increased responsibility and differentiated work that draws upon their expertise.

Accordingly, the National Board and its partners have designed a unique initiative to expand the pool of highly effective NBCTs serving in high-need schools and develop improved pathways for these educators to serve as instructional leaders in such schools. First, the National Board will work with teams representing both labor and management in two large urban school districts (Albuquerque and San Francisco) and four states (Kentucky, Nevada, New York, and

Washington). Second, the National Board and the six sites will form a Networked Improvement Community (NIC), a dynamic application of improvement science developed by the Carnegie Foundation for the Advancement of Teaching (Carnegie), which is also a partner in this proposal. With a rich history of success in the healthcare field, the NIC supports continuous improvement for all sites through a collaborative process of disciplined inquiry. Finally, this initiative aligns to the elements agreed upon in the “Transforming the Teaching Profession” vision statement signed at the 2012 Labor-Management Collaboration Conference (see Appendix F; U.S. Department of Education [ED], 2012b). The leaders of the organizations responsible for the vision statement—the American Federation of Teaching (AFT), the National Education Association (NEA), the Council of Chief State School Officers (CCSSO), the Council of the Great City Schools (CGCS), the National School Boards Association (NSBA), and the American Association of School Administrators (AASA)—will serve as the advisory board for this initiative, ensuring that it will have impact that is both national and sustainable (see letters of support in Appendix D).

Absolute Priority 3: Advanced Certification

This initiative addresses Absolute Priority 3: Advanced Certification and Advanced Credentialing by (1) increasing the number of highly effective NBCTs in high-need schools and (2) increasing the number of highly effective NBCTs in instructional leadership roles serving in high-need schools. Accomplishing these goals will result in improved teacher effectiveness and increased student achievement. This initiative also addresses Competitive Preference Priority 1: Supporting Practices and Strategies for Which There is Strong Evidence of Effectiveness; Competitive Preference Priority 2: Improving Efficiency; and Competitive Preference Priority 3: Promoting STEM Education. Proposed activities meet the specific priorities, requirements,

definitions, and selection criteria in the SEED Notice Inviting Applications (NIA) in evidence-based, innovative, and nationally significant ways.

Competitive Preference Priority 1: Strong Evidence of Effectiveness

National Board Certification, the profession's advanced certification for teachers, has strong evidence of effectiveness in its ability to identify highly effective teachers who promote their students' academic achievement. Studies of the effectiveness of National Board Certified Teachers (NBCTs) cumulatively demonstrate that their students grow more in their learning than do students of unsuccessful applicants and students of other teachers. In 2008, a comprehensive review of 11 existing studies by the National Research Council (NRC) found that, "the evidence is clear that National Board certification distinguishes more effective teachers from less effective teachers with respect to student achievement" (p.179).

The NRC's conclusion is based on studies meeting What Works Clearinghouse (WWC) standards or standards with reservations and other compelling studies that lack the information needed to meet WWC standards. All of the studies mentioned were reviewed by WWC-certified reviewers against WWC standards. Those meeting standards are summarized here.

The one experimental study that examined the impact of NBCTs on student achievement was conducted by Cantrell, Fullerton, Kane, and Staiger (2008) with teachers and students in Los Angeles Unified School District. For each National Board Certification applicant meeting certain criteria at the beginning of the academic year, the researchers identified a teacher in the same grade level, calendar track, subject, school, and level of experience. The applicant and their matching teacher formed a random assignment unit. There were 99 applicant/non-applicant pairs, and student rosters were randomly assigned to the teachers in each pair. At the end of the academic year, 30 of the applicants obtained their certification, 30 failed to meet the certification

requirements, and 40 teachers withdrew their applications.¹ The difference between the achievement of students of the successful National Board Certification applicants and the achievement of students of non-applicants was calculated to be .046 standard deviations for mathematics and .06 standard deviations for reading (each contrast based on approximately 1,148 students). Neither of these impacts was significant, partly due to the low power for the study. (There was only a 9 percent chance of detecting a significant effect if it existed; the standard in educational research is 80 percent.) However, the contrast between successful applicants and unsuccessful applicants was calculated to be .213 and .194, both of which are statistically significant.² This latter finding indicates *strong evidence* that students with NBCTs outperform students of non-certified teachers.

Several additional studies provide *moderate evidence* of effectiveness. Goldhaber and Anthony (2007) used 1996–97 through 1998–99 data on all public school teachers and students in North Carolina to examine the impact of NBCTs, National Board Certification applicants, and non-applicants. The standardized mathematics and reading achievement of students of teachers in these three groups did not differ prior to exposure to their teacher. Thus, the study meets standards with reservations. The relevant impact estimates are the weighted average of the current NBCT versus non-applicant contrast and future NBCT versus non-applicant contrast. In Table 2 in the study, the two values for reading in column 1 average to .27 standard deviations, $p < .001$, and the two values for mathematics in column 7 average to .35 standard deviations, $p < .001$. Both contrasts remain significant after the adjustment for clustered data is applied.

¹ Cantrell and colleagues do not explicitly mention the numbers of accepted applicants, failed applicants, and applicants that withdrew. The numbers of teachers are inferred from the note following Table 3 in the study.

² This impact estimate is not mentioned in WWC’s “Quick Review” of this study. This impact estimate is the combination of the estimates for NBCTs versus non-applicants and the estimate of unsuccessful applicants versus non-applicants (see Table 6 in the study, “with controls” column). This is a procedure that the authors did as well (see pages 26 and 27).

Harris and Sass (2007) conducted a study much like that done by Goldhaber and Anthony (2007) using data on all Florida students in grades 3–10 linked to their NBCT or their non-NBCT. There were no differences in students' achievement at baseline. However, at the end of the academic year, students of NBCTs outperformed students of non-NBCTs by .012 and .002 standard deviations in the mathematics portions of the Sunshine State exam and the Normed Reference Test, respectively. (Neither difference was statistically significant.) For reading, the differences in scores among students of NBCTs versus non-NBCTs were .019 and .001 standard deviations for the reading portion of the Sunshine State test and the Normed Reference Test, respectively. (The former estimate has $p < .10$, while the latter is not significant.)

Other research studies on impacts of National Board Certification exist, including many that were part of the NRC's report (e.g., Cavalluzzo, 2004; Chingos & Peterson, 2011; Clotfelter, Ladd, & Vigdor, 2007a, 2007b; SDP, 2012a, 2012b; Smith, Gordon, Colby, & Wang, 2005; Stone, 2004; Vandervoort, Amrein-Beardsley, & Berliner, 2004). A list of these studies and their characteristics is found in Appendix E. These other studies do not meet WWC standards for two reasons. First, several previous studies (e.g. Humphrey, Koppich, & Hough, 2005) noted that NBCTs tended to teach in higher performing schools and have higher performing students, a finding that is not the case today. For example, in Kentucky and New York, both site partners in this initiative, more than 70 percent of NBCTs serve in high-need schools. This selection issue in historical studies tends to make the baseline comparison criterion difficult to meet when conducting quasi-experimental studies. Second, in teacher effectiveness research, there exists a tradition of reliance on controlling for school, teacher, and student effects (including baseline scores) statistically. The tradition of intervention research, however, attempts to control for those various factors through selection (i.e., creating similar samples) rather than at the back end.

Though the studies referenced in the previous paragraph do not meet WWC’s evidence standards, the consistent findings from these studies suggest that NBCTs have positive impacts on the achievement of their students. These other studies also speak to the diverse districts and states in which National Board Certification and NBCTs have been studied, increasing their generalizability and applicability to the site partners in this initiative. This initiative will build from the evidence base on this advanced certification through empirically-proven processes for candidate recruitment and support as well as evidence-driven approaches to instructional leadership to achieve its objectives (see Project Design and Services, p. 15).

A. Significance

A (1) Significance on a National Level

The ability of board certification to identify highly qualified teachers suggests that it offers a potential policy lever for increasing teaching quality throughout the system if it were used in ways that have not yet been tried on a large-scale systematic basis, such as by using board certification in hiring, promotion, and assignment decisions; systematically using board-certified teachers as mentors or as teacher leaders; or by targeting incentives to encourage board-certified teachers to work in the more difficult schools. (NRC, 2008, p. 229)

The hallmark of any true profession is that its most accomplished practitioners inform standards of entry, practice, and advancement (Mehta & Doctor, 2013). National Board Standards and Certification, like advanced certification in fields such as medicine and architecture, have been created by the profession. They provide a performance-based, peer-reviewed, valid, and reliable process through which teachers can prove that their practice meets the profession’s highest standards (Bond, Smith, Baker, & Hattie, 2000; NRC, 2008).

Today there is widespread agreement that the United States must do more to improve student achievement and that effective teachers are the most critical in-school factor for doing so (Barber & Mourshed, 2007; Rivkin, Hanushek, & Kane, 2005; Rockoff, 2004). The “Transforming the Teaching Profession” vision statement called for the nation to “create a

profession that attracts great people into our schools and classrooms—and keeps them in the profession” (ED, 2012b). Given its stewardship of the profession’s standards for accomplished teaching and its proven advanced certification process for assessing teacher practice against those standards, the National Board is uniquely positioned to be a catalyst for this transformation. Through this initiative, the National Board and its partners seek to promote educator effectiveness across the career continuum; foster new career ladder roles and opportunities for NBCTs as instructional leaders; and promote labor-management collaboration in staffing and strengthening high-need schools. The diversity of site partners and contexts represented in this initiative will ensure that results and innovative practices can be replicated and scaled at a national level.

Concentrating Highly Effective Teachers in High-Need Schools

Across the nation, states and districts are grappling with the challenge of staffing high-need schools with highly effective teachers. In these schools, teacher turnover can be high, professional culture weak, and student achievement persistently low (Borman & Kimball, 2005; Ferguson, 1998; Jacob, Vidyarthi, & Carroll, 2012; Kain & Singleton, 1996). As the previous section on evidence confirms, individual NBCTs have a strong impact on increasing student achievement, learning, and growth (see Competitive Preference Priority 1, p. 4). Increasing the number of highly effective NBCTs in high-need schools is a compelling strategy for boosting student achievement. In addition, there is growing evidence that concentrating highly effective NBCTs in high-need schools multiplies this impact (National Board, 2012). For example, when 15 staff members pursued National Board Certification at Loma Linda Elementary School in Gadsden, New Mexico, test scores increased by 9 percent in mathematics and 5 percent in reading on New Mexico’s statewide assessments, raising the state ranking for the school from an

F to a B. By creating tipping point concentrations of highly effective NBCTs in high-need schools, this initiative develops models that build on such examples and can be scaled nationally.

Creating Career Ladder Roles for Highly Effective NBCTs

We must create career and leadership opportunities to enable teachers to grow their roles and responsibilities without leaving the classroom. (ED, 2012a, p. 2)

Myriad states are advancing policies to support instructional leadership, exemplifying the growing recognition of the importance of career ladders in the field. For example, in the federal Race to the Top competition, nine states proposed using evaluations to identify effective teachers to serve as mentors, coaches, and leaders; two states proposed reforming teacher leadership standards or licensure that included teacher leadership; and twenty states proposed providing additional pay for taking on new roles and responsibilities. This initiative will create new pipelines into instructional leadership for highly effective NBCTs in high-need schools. By demonstrating how NBCTs can become instructional leaders, supporting a variety of system priorities such as STEM instruction, Common Core State Standards (Common Core) implementation, and improved educator evaluation, this initiative will advance the development of career ladder roles for teachers.

Strengthening Labor-Management Collaboration

In the long run, the most promising path to transforming American education is student-centered labor-management collaboration. (ED, 2012b, p. 3)

Improved labor-management collaboration is central to improving teacher effectiveness and student achievement. It is also the most promising approach to sustaining change because it will be manifest in both practice and policy. This initiative embeds structures for labor-management collaboration at every stage of planning and implementation. State and district leaders and their union counterparts compose the leadership teams directing activities at each partner site, alongside members of local NBCT networks (see Project Design and Services, p. 15,

and letters of support in Appendix D). The collaboration that will occur in the planning, implementation, and ongoing sustainability of the initiative will strengthen locally-based efforts for school improvement among both district and state partners. The NIC, discussed below, will be an environment for shared problem solving and collaboration. The diversity of contexts and conditions across the partner sites will ensure that lessons regarding labor-management collaboration will have pertinence for other districts and states. This initiative focuses on supporting labor-management collaboration to address the human capital challenges that high-need schools face.

Using a Networked Improvement Community as an Engine for Improvement

Another distinctive feature of this initiative is the role of the NIC in fostering cross-site collaboration using an evidence-based approach to continuous improvement. The NIC provides tools for planning and implementation that will accelerate knowledge development and diffusion among site partners. Applying the NIC methodology to the human capital challenges confronting high-need schools will produce innovative and nationally significant results.

A (2) Development and Advancement of Theory, Knowledge, and Practices

This initiative will contribute to theory, knowledge, and practices in teacher effectiveness, instructional leadership, school-based professional learning, and labor-management collaboration by creating and sustaining authentic exemplars that can be examined and replicated in other districts and states. Defining how these components interact systemically to improve student achievement will be critical for successful education reform.

Teacher effectiveness. The benefits of National Board Certification are firmly established. NBCTs exhibit more effective assessment practices than peers (Sato, Wei, & Darling-Hammond, 2008), elicit deeper and more complex thinking and writing from students (Helding & Fraser,

2005; Smith et al., 2005), and excel at student engagement (Helding & Fraser, 2005). In Hillsborough County, one site in the Measures of Effective Teaching project (Bill & Melinda Gates Foundation, 2013), students of NBCTs scored higher than students of non-NBCTs on the value-added results of subject-specific district exams. Furthermore, NBCTs outperformed their peers on evaluations that used principal and peer observations and student achievement data (National Board, 2012). This initiative will build on the sector's understanding of how educator effectiveness can be defined and measured—and educator expertise can be systematically developed—using National Board Standards, processes, and certification.

Instructional leadership. Research indicates there are correlations among teacher leadership, school improvement, and student achievement. The effect of teacher leadership, however, has largely been measured indirectly (Johnson, 2009; Leithwood & Mascall, 2008; Marks & Louis, 1997; Poekert, 2012; Smylie, Lazarus, & Brownlee-Conyers, 1996; Supovitz, Sirinides, & May, 2009). Certain structural and cultural characteristics are more likely to support and sustain teacher-led professional learning as a mechanism for teacher and student growth. They include time during the day for collaboration, shared decision-making, trust among colleagues, and an orientation toward growth and development (Achinstein, 2002; Hargreaves & Dawe, 1990; Leithwood & Jantzi, 2008; Little, 1982, 2003; Smylie, Mayrowetz, Murphy, & Louis, 2007). The success of teacher leadership in improving teaching and learning is influenced directly by the extent of district, state, and school policy alignment and the extent to which collaborative networks are present (Anagnostopoulos, Sykes, McCrory, Cannata, & Frank, 2010; Desimone, Smith, & Phillips, 2007; Leithwood & Jantzi, 2008; Phillips, Desimone, & Smith, 2011; Xie & Shen, 2012).

This initiative will investigate instructional leadership development and success across six settings to inform the knowledge, theory, and practices that lead to improving teaching and increasing student achievement. The diversity of policy structures and practices among partner sites will reveal the effect of systemic supports on the interactions of leadership, teaching effectiveness, and student growth. Moreover, this initiative should yield findings on how leadership opportunities promote teacher retention, particularly in high-need schools and among NBCTs (Ingersoll, 2001; Johnson, 2009; Liu, 2007; Margolis, 2008; NRC, 2008; Pucella, 2011).

This initiative will address the growing need within the teaching force for differentiated career growth opportunities (Berg, 2005; Markow, Marcia, & Lee, 2013). In so doing, it will connect to larger, field-building efforts already underway in states, districts, and the nonprofit sector. For example, the recently developed Teacher Leader Model Standards have informed some states' work on new teacher leadership credentials (Poekert, 2012; Teacher Leader Exploratory Consortium, 2011). Furthermore, the findings will inform the National Board's own work on the development of accomplished-level teacher leader standards and credential.

School-based professional learning. Professional development is often criticized as being scattershot, of poor quality, and disconnected from authentic problems of practice. It therefore often does “not meet the threshold needed for strong effects on practice and student learning” (Wei, Darling-Hammond, Andree, Richardson, & Orphanos, 2009, p. 34). The most effective professional development is job-embedded, content-focused, student-based, context-specific, and sustained (Garet, Porter, Desimone, Birman, & Yoon, 2001; Guskey, 2003; Wei et al., 2009).

The creation or improvement of instructional leadership roles at partner sites will improve school-based professional learning. Several studies have demonstrated that NBCTs are

well suited for instructional leadership roles. For example, Loeb, Elfers, and Plecki (2010) argue, “NBCTs bring considerable leadership experience and are willing to be engaged in activities necessary to improve teaching and learning” (p. 223). NBCTs are identified as providing help with instruction more frequently than non-NBCTs (Frank et al., 2008). NBCTs help one another’s professional development in several ways: (1) enhancing reflection on teaching practice, (2) establishing a professional discourse community, (3) raising the standards for teaching performances, and (4) facilitating collaboration (Park, Oliver, Johnson, Graham, & Oppong, 2007). Importantly, site partners will draw upon teachers’ site-specific instructional expertise to guide authentic professional learning in schools (Poekert, 2012; Webster-Wright, 2009; Wei et al., 2009). By integrating current research, effective practices, and systemic resources, this initiative will advance understanding of how sustained professional learning increases student achievement.

Labor-management collaboration. As Koppich (2005) notes, reform-oriented unions face many challenges in improving teacher quality through labor-management relations: “They must persuade longtime members that a new way of doing business does not mean abandoning traditional union values or issues such as salaries and conditions...[and] convince newer members that the union is an important vehicle for educational improvement” (p. 108). This initiative will advance opportunities for labor-management counterparts—along with networks of NBCTs—to develop a shared sense of responsibility for student learning, a consistent theme of previous labor-management collaboration conferences (Futernick, 2007).

A (3) Magnitude of Effect

The proposed initiative will result in measurable improvements in teaching effectiveness and student achievement in high-need schools, especially in STEM disciplines. At its core, the

initiative uses the proven ability of National Board Certification to distinguish highly effective teaching. Comparative estimates show the magnitude of effect of this ability: NBCT effects in elementary mathematics are 0.07 in size, whereas completion of an advanced degree has a slight negative effect of -0.01 (SDP, 2012b; see Competitive Preference Priority 1 on p. 4).

This initiative will have a significant impact on partner states and districts, strengthening the teaching effectiveness of more than 3,500 teachers and improving the achievement of more than 500,000 students. The following table displays the number of teachers and instructional leaders each site partner expects to support throughout the course of this initiative and provides preliminary estimates for the kinds of impact they will have on other teachers and students in high-need schools. These projections will be refined during the site partner planning period.

Table 1. Estimated Direct Impact of SEED Initiative

Site	Number of new NBCTs supported by SEED initiative		Number of new NBCT instructional leaders supported by SEED initiative		Total number of teachers supported by SEED initiative	Number of teachers supported by NBCT instructional leaders	Number of students taught by new NBCTs (over the 3-year period)
	Overall	STEM	Overall	STEM			
STATES							
Kentucky	500	125	82	8	582	400	90,000
Nevada	50	25	25	10	75	250	9,000
New York	100	25	43	10	143	400	15,000
Washington	2,000	500	600	180	2,600	1,500	360,000
DISTRICTS							
Albuquerque	120	40	12	4	132	100	22,000
San Francisco	75	30	44	15	119	660	13,000
TOTAL	2,845	745	806	227	3,651	3,310	509,000

The effectiveness of NBCTs and NBCT instructional leaders who receive their advanced certification through this initiative will be determined through rigorous, transparent, and fair evaluations in which performance is differentiated using multiple measures of effectiveness, based in significant part on student growth³. American Institutes of Research (AIR), the

³ *Student growth* is defined as the change in student achievement for an individual student between two or more points in time, as defined in the SEED NIA.

initiative's independent evaluator, will analyze gains in teacher effectiveness and student achievement (see Project Evaluation, p. 41).

Finally, this initiative will realize outcomes for participating states and districts that include: (1) creation and strengthening of systems for highly effective teachers to earn advanced certification and to become instructional leaders through recruitment, selection, training, and placement; (2) development and improvement of cost-effective and sustainable strategies for placing and concentrating highly effective teachers and instructional leaders in high-need schools; (3) further development and application of labor-management collaborative practices; and (4) creation and development of a NIC supporting the sustainability and ongoing refinement of this initiative's approach and strategies. Thus, the impact of this initiative will not be limited to the site partners, but is designed from the start to have a broader impact, with successes replicated through national networks to other states and districts.

B. Project Design and Services

The purpose of the proposed initiative is to increase student achievement in high-need schools by increasing the numbers of highly effective teachers in those schools. Site partners will do this by strengthening the policies and structures that (1) support teachers in the pursuit of National Board Certification and (2) encourage NBCTs to serve in instructional leadership roles. The activities to achieve these goals are illustrated in the logic model in Figure 1. Each site partner's work will be tailored to support local improvement priorities. The National Board and Carnegie will facilitate knowledge-sharing through a NIC.

B (1) Goals, Objectives, and Outcomes

This three-year initiative aims to improve student achievement through two complementary goals that are supported by targeted, measurable objectives (see Table 2).

Figure 1. Logic Model

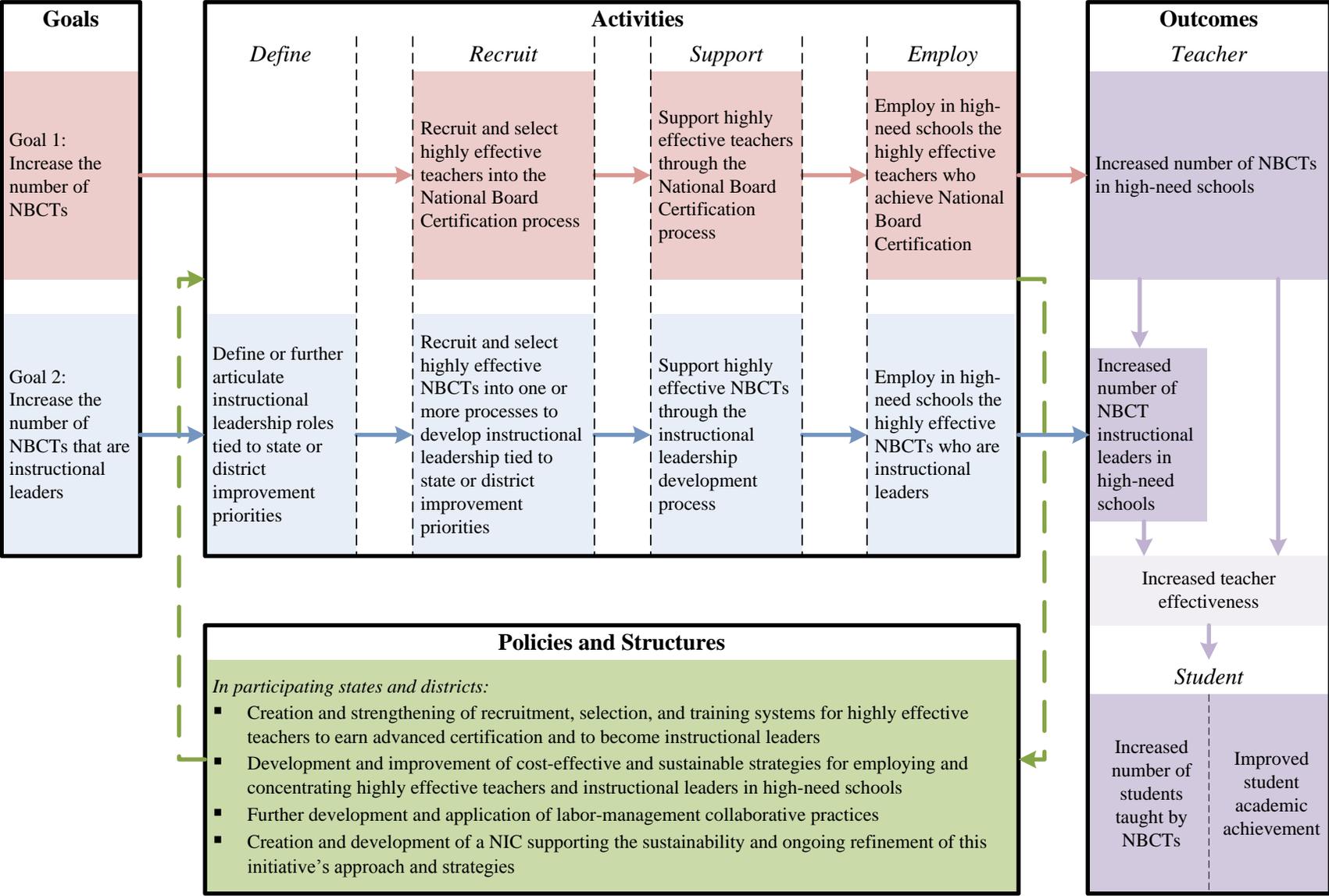


Table 2. Goals, Objectives, Outcomes, and Measures of the Initiative

Purpose: Increase student achievement in high-need schools by increasing the number of highly effective teachers and school-based instructional leaders in those schools, especially in STEM subjects		
Goal 1, National Board Certification (NBC): Increase the number of highly effective NBCTs in high-need schools		
Objectives	Outcomes	Measures
1a. Recruit highly effective teachers	More highly effective teachers begin the NBC process	Number of contacts per non-NBCT Number of non-NBCTs beginning the process
1b. Support highly effective teachers	More highly effective teachers who undertake the process earn NBC	Percentage of teachers who complete the certification process and earn NBC Cost per teacher who completes the process and earns NBC
1c. Employ highly effective NBCTs in high-need schools	More highly effective NBCTs are employed in high-need schools More students in high-need schools are taught by highly effective NBCTs and improve their academic performance	Percentage of NBCTs employed in high-need schools Percentage of students in high-need schools taught by NBCTs Average growth in academic achievement of students taught by NBCTs employed in high-need schools
Goal 2, Instructional Leadership: Increase the number of highly effective NBCTs filling instructional leadership roles in high-need schools		
2a. Recruit and select highly effective NBCTs	More highly effective NBCTs begin school-based instructional leadership development processes	Number of recruiting process contacts per NBCT Number of NBCTs beginning the development process
2b. Support highly effective NBCTs	More highly effective NBCTs successfully complete instructional leadership development processes	Percentage of NBCTs who complete the development process Cost per NBCT who successfully completes the development process
2c. Employ highly effective NBCT instructional leaders in high-need schools	More highly effective NBCT instructional leaders are employed in high-need schools More teachers in high-need schools receive support from NBCT instructional leaders More students in high-need schools, taught by teachers supported by NBCT instructional leaders, improve their academic performance	Percentage of NBCTs who successfully complete the development process and are placed in high-need schools Percentage of teachers in high-need schools supported by NBCT instructional leaders Average growth in academic achievement of students in high-need schools taught by teachers supported by NBCT instructional leaders

AIR will serve as the initiative’s third-party evaluator, conducting both formative and summative evaluation (see Project Evaluation, p. 41).

B (2) A Comprehensive Effort to Improve Teaching and Learning

Education—especially PK–12 teaching—has no shortage of innovative reform strategies. Successful implementation, however, requires clear strategies, a systemic approach, and the active involvement of all relevant stakeholders. This initiative is compelling because of its comprehensive scope, strategic partnerships, and approach to improving teaching and learning.

Partner sites in this initiative include four states (Kentucky, Nevada, New York, and Washington) and two districts (Albuquerque and San Francisco). Implementation will involve participants from each site representing management, labor, and a network of NBCTs. For example, in San Francisco, participants are the San Francisco Unified School District, United Educators of San Francisco, and a network of NBCTs across the district. Partnerships will enable creation of policies and structures to ensure sustainable models of recruitment, selection, support, and advancement that are responsive to local reform priorities.

Two strands of activities will occur in parallel: one for recruitment, selection, training, and support designed to increase the number of NBCTs; the other to increase the number of NBCT instructional leaders. In the latter, an additional first step involves defining the roles in which the instructional leaders will serve.

Instructional leadership role definition. Site partners will define instructional leadership roles targeted to local improvement priorities, such as Peer Assistance and Review coach, mentor teacher, or STEM coach. Roles may be formal or informal; hybrid or full-time.

Recruitment. Site partners will develop effective recruitment processes for National Board Certification and instructional leader candidacy, with a particular focus on the STEM

disciplines and on traditionally underrepresented populations. Recruiting strategies will include information sessions conducted by NBCTs experienced in working in high-need schools. In addition, webinars, Twitter chats, and other social media opportunities will encourage teachers to interact with NBCTs and candidate support providers during the recruitment and application phases of the initiative. The National Board will provide training and recruiting information to the local NBCT network at each partner site and will facilitate their interaction with other site partners. Strengthened incentives to become National Board Certified or serve in an instructional leadership role in high-need schools, such as new salary structures and opportunities for professional growth and collaboration, will aid in recruitment.

Rigorous and competitive selection. Site partners will work to strengthen or develop rigorous and competitive selection criteria for teachers who pursue National Board Certification or instructional leadership opportunities in high-need schools. Those criteria will include evidence of effectiveness derived in part from local teacher evaluation systems (as defined in the SEED NIA). Site partners will have an opportunity to examine the application processes of several district and state programs beyond this initiative in order to build upon existing models. For instance, the Chicago Teachers Union’s application process consists of a detailed candidate profile that focuses on readiness, resilience, effectiveness, and commitment.

Training and support. Site partners will develop or enhance supports for National Board Certification candidates and NBCT instructional leaders, including providing release time and developing and strengthening training programs. See B (3) High-Quality Training and Professional Development on p. 22 for detailed examples of training and support programs.

Table 3, Site Priorities, describes the priorities at each site, with more detail in Appendix H. Site partners will focus on STEM subjects (Competitive Pref. Priority 3: Promoting STEM).

Table 3. Site Priorities

Site	Goal 1: National Board Certification	Goal 2: Instructional Leadership	STEM Focus
KY	<ul style="list-style-type: none"> Develop cadre of NBCT Ambassadors in each of the KEA’s 12 geographic regions, one of whom will be a full-time NBCT Ambassador Cultivate an NBCT presence in rural eastern Kentucky, particularly in STEM subjects, through a partnership with a local university 	Train NBCT instructional leaders to: <ul style="list-style-type: none"> Implement Kentucky’s Professional Growth and Effectiveness System Work as coaches and master teachers in persistently low-achieving schools 	Partner with local institution of higher education to increase number of STEM NBCTs
NV	<ul style="list-style-type: none"> Recruit certification candidates in schools with large numbers of novice teachers Develop a community of NBCTs and candidates to serve as a support network for teachers pursuing certification 	Train NBCTs to: <ul style="list-style-type: none"> Conduct observations as part of the teacher evaluation process Coach administrators to engage in dialogue with teachers on reflective practice 	NBCTs serve as peer evaluators at schools with large numbers of novice STEM teachers
NY	<ul style="list-style-type: none"> Strengthen candidate-support infrastructure to improve certification achievement rate, emphasizing a cohort approach to NBC Support labor-management partnership to develop incentives for becoming an NBCT 	<ul style="list-style-type: none"> Create joint labor-management committees, including NBCTs, to develop instructional leadership roles for system improvement (e.g., STEM coach, literacy coach, and Peer Assistance and Review coach) and trainings and incentives for those roles 	NBCTs serve as STEM coaching and content specialists in high-need schools
WA	<ul style="list-style-type: none"> Establish regional candidate outreach networks to ensure every school and district in the state has access to timely, accurate information about National Board Certification and state professional development programs Build an NBCT Ambassadors program to expand the numbers of NBCTs in high-need schools, particularly teachers from minority populations and in STEM subjects 	<ul style="list-style-type: none"> Convene NBCTs to improve their leadership skills Fund leadership grants for NBCT-led teams to meet school improvement goals in high-need schools Build a statewide online communication portal for all NBCTs 	NBCTs serve as STEM coaching and content specialists in high-need schools
ABQ	<ul style="list-style-type: none"> Expand the NBCT corps by continuing and improving existing support programs Pilot precertification program in high-need schools 	Train NBCTs to: <ul style="list-style-type: none"> Act as support providers for school-based cohorts of candidates Serve on turnaround teams with NBCT peers Design instructional leadership pathways 	NBCTs serve as STEM coaching and content specialists in high-need schools
SF	<ul style="list-style-type: none"> Create a cohort-based support program for certification candidates in high-need schools Leverage resources such as the National Board Resource Center at Stanford University and the SFUSD Support Program to support candidates and increase achievement 	<ul style="list-style-type: none"> Build a cadre of coaching and content specialists who will support key initiatives Design training in adult coaching with New Teacher Center and Partners in School Innovation 	NBCTs serve as STEM coaching and content specialists in high-need schools

One State's Plan: Kentucky

The impact of this comprehensive approach to the alignment of state and district priorities is illustrated by one state's plan for implementation. Kentucky is transitioning to a new teacher and leader effectiveness system, implementing the Common Core, initiating a systemwide focus on STEM instruction, and emphasizing labor-management collaboration. Kentucky was the first state to adopt, implement, and assess the Common Core in English language arts and mathematics. Kentucky recently launched a STEM network in partnership with the P20 Innovation Lab at the University of Kentucky.

National Board Certification. Kentucky will work across its reform priorities to increase the number of highly effective NBCTs in high-need schools. First, Kentucky will expand the Kentucky Education Association's (KEA) state cadre of NBCTs in each of KEA's 12 geographic regions. These NBCTs will serve as NBCT Ambassadors in each region, including one full-time, released NBCT Ambassador per region, to coordinate training and support. NBCT Ambassadors will educate administrators about the value of National Board Certification and how they can encourage more teachers to pursue the process and utilize NBCT expertise. NBCT Ambassadors will also be responsible for targeted, systemic outreach, recruitment, and candidate support for teachers who are ready for National Board Certification. In addition, Kentucky will cultivate an NBCT presence in rural eastern Kentucky, particularly in STEM subjects, through a partnership with a local university to provide support to teachers interested in pursuing National Board Certification (Competitive Preference Priority 3: Promoting STEM Education).

Instructional leadership. Kentucky's work to develop instructional leadership opportunities for NBCTs will focus on two major areas. First, Kentucky will harness the expertise of NBCTs in demonstrating effective teaching practices. To support the state's new

Professional Growth and Evaluation System (PGES), Kentucky will develop a statewide peer mentoring program in which NBCTs serve as virtual peer observers. These NBCTs will be paired with teachers to support the implementation of the PGES, leading to greater teacher effectiveness and more teachers prepared to pursue National Board Certification. Second, Kentucky will promote leadership opportunities for NBCTs in persistently low-achieving schools, including employing NBCTs at the state department of education to provide focused support to these schools. These NBCTs will serve in full- or half-time peer mentoring roles and will use dedicated resources to expand and institutionalize support programs (see Appendix H).

B (3) High-Quality Training and Professional Development

There is growing consensus in the field that five core features determine the effectiveness of professional development. It must be job-embedded, content-focused, student-based, context-specific, and sustained (Garet et al., 2001; Guskey, 2003; Wei et al., 2009). This initiative embeds these core features throughout. The quality, intensity, and duration of the recruitment, training, support, and staffing services will be ensured in three ways: (1) supporting teachers pursuing National Board Certification, (2) encouraging the use of models of best practice in those services, and (3) engaging site partners in focused continuous improvement designed to strengthen the connection between activities and outcomes (i.e., the NIC). The resulting high-quality services created by site partners will contribute to better models that will be created and can be replicated more broadly to other states and districts (see Sustainability, p. 36).

National Board Certification

National Board Certification requires candidates to demonstrate, analyze, and reflect upon their teaching performances as captured on video and in comprehensive, written reflective analyses, in student work samples, and through assessments of content knowledge. Candidates

for National Board Certification report committing 200–400 hours to the process. The typical candidate support program includes an additional 15–45 hours of activities, increasing the intensity of the National Board Certification process.

Building from Models of Best Practice

Several states and districts and their union counterparts around the country have deep experience in recruiting and supporting teachers pursuing National Board Certification and employing them in high-need schools. Likewise, many states and districts have put in place systems of recruitment and support to capitalize on the expertise of highly effective NBCTs to improve teacher effectiveness and student achievement. The site partners will build from these models, eliminating the need to reinvent the wheel and ensuring a high level of quality.

For example, the Washington Education Association (WEA) has developed Jump Start training that engages candidates in the study of National Board Standards and provides opportunities for teachers to examine and analyze their practice against those standards. This support is intended to complement year-long candidate support provided through university, district, or union programs. In the months leading up to submission, WEA supports candidates' investigation of current research and practices in content and pedagogy. As a result of these support systems, candidate achievement rates improve: fully supported first-time candidates achieve at a rate of 65 percent, compared to 45 percent for all candidates nationally. Upon achieving National Board Certification in Washington, NBCTs are connected to the Center for Strengthening the Teaching Profession (CSTP), which provides instructional leadership training aligned to the CSTP Teacher Leadership Skills Framework.

Albuquerque Public Schools (APS) and the Albuquerque Teachers Federation have co-created the APS Mentor Program, which provides beginning teachers individual support for one

year from a designated trained mentor. The APS Mentor Program is directly connected to the APS Peer Assistance and Review Program, ensuring shared expertise and expectations in the development of mentor teachers and coaches. Mentors are selected through a rigorous, competitive application process overseen by a labor-management committee. Once selected, mentors participate in comprehensive mentorship training.

The National Board has begun to replicate these models of best practice. For example, the Jump Start program is now being implemented in Kentucky, Hawaii, and Alaska. These initial instances of replication provide confidence that these models will transfer well to partner sites.

Networked Improvement Community: A Focused Approach to Continuous Improvement

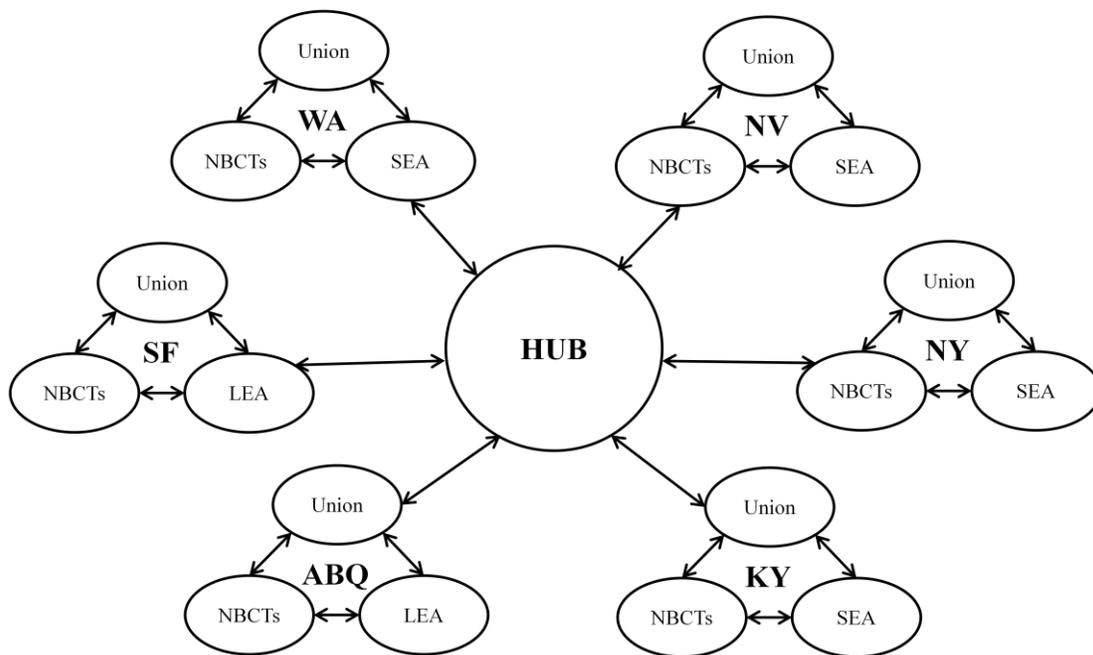
A NIC is a process designed to undertake complex problems that require systemic solutions “integrated with other solutions and pre-existing organizational conditions” (Bryk, Gomez, & Grunow, 2010, p. 15). In education, individuals and groups are often networked through professional learning communities where participants come together to share ideas and to learn from one another. In a NIC, participants work collaboratively on solutions to a common problem through what is called disciplined inquiry that uses “shared, precise, measurable targets” (p. 11). Participants continuously and collectively sharpen those targets through an iterative process designed to lead toward improvements at scale. The NIC is ideal for addressing the complexity of work in schools, districts, and states where there is no single, simple solution to a problem and targeted solutions must focus on a systems approach. A NIC will be created across site partners to address the goals of the initiative.

Participants in the NIC will consider collectively the primary causes that result in too few highly effective teachers and instructional leaders in high-need settings. For example, one cause is that the working conditions in high-need schools often do not attract teachers with advanced

certification. Another is the lack of formalized roles—or incentives for serving in those roles—for instructional leaders in schools and districts. By addressing such root causes, participants in this initiative will work collaboratively toward solutions that can be tested and scaled in the field.

The NIC will serve as the primary process through which the partners in this initiative will establish common targets and measurable goals as well as share knowledge. The process involves developing a shared understanding of key challenges and potential solutions and using common protocols for planning, inquiry, implementation, problem solving, and knowledge development across site partners. Figure 2 presents the NIC structure.

Figure 2. NIC Structure



Designed as a system, the community will be supported by the National Board and Carnegie as the hub. Each partner site is composed of the state or local education agency, the state or local union, and an NBCT network, and is supported by the hub.

Competitive Preference Priority 3: Promoting STEM Education

The National Board has a strong record of promoting STEM education, with more than 15,000 NBCTs already certified in STEM subjects. Since 2005, more than a third of the recipients of the Presidential Award for Excellence in Mathematics and Science Teaching have been NBCTs. More than 20 percent of the 2012–2013 class of the Albert Einstein Distinguished Educator Fellowship are NBCTs. Recent revisions to the National Board’s accomplished standards in multiple content areas ensure that NBCTs are able to help their students meet the new expectations established by the Common Core and the Next Generation Science Standards.

This initiative will increase the number of highly effective NBCTs in STEM subjects and expand the opportunity for such teachers to serve in instructional leadership roles at each of the six partner sites. It focuses recruitment, selection, professional development, and career ladder positions on improving the practices of highly effective teachers of STEM subjects. For example, in New York State, the initiative will provide increased opportunities for NBCTs to serve as STEM coaches and content specialists in high-need schools (see Table 3, p. 20).

Project Design and Services details the recruitment, selection, professional development, and instructional leadership efforts that the National Board and site partners will undertake to increase the number of individuals from underrepresented groups in STEM teaching, and provide increased opportunities for high-quality professional development. For example, in Washington, this initiative will establish an NBCT Ambassador program to expand the numbers of highly effective NBCTs in high-need schools, including minority teachers in STEM subjects. The effectiveness of NBCTs and NBCT instructional leaders in STEM subjects will be determined by rigorous, transparent, and fair evaluations as defined previously (see Project Design and Services, p. 15).

C. Management Plan and Personnel

C (1) Qualifications of Project Personnel

The qualifications of key project personnel are appropriate and adequate to meet the objectives of the proposed initiative (see Appendix A for resumes of key personnel).

National Board for Professional Teaching Standards. Andy Coons, NBCT, (Project Director) is Chief Operating Officer. He served as President of the Tacoma Education Association, where his work contributed to advancing National Board Certification in the district and state. A former middle school mathematics teacher, Coons served on NEA's Commission on Effective Teachers and Teaching, as well as on the board of directors of the Washington Education Association. He is completing his doctorate at the University of Washington.

Joe Doctor (Project Manager) is Vice President of Strategic Initiatives. Doctor spent seven years at the Bridgespan Group, a nonprofit strategy consulting firm, working with nonprofits, school districts, state departments, and foundations to improve education for all students, especially low-income and minority youth. He worked with the Commonwealth of Kentucky to create its Race to the Top proposal to accelerate student performance. Doctor is a doctoral candidate in education leadership at the Harvard Graduate School of Education.

Geneviève DeBose, NBCT, (Hub Leader and Improvement Expert) is Director of Educator Engagement. DeBose, a former Teach For America corps member, spent over a decade teaching in Los Angeles, Oakland, and the South Bronx. A 2011 U.S. Department of Education Teaching Ambassador Fellow, she was named in 2012 as one of *Education Week's* "17 Leaders Who Will Shape Education for the Next Generation." DeBose holds degrees from University of California, Berkeley.

State and District Site Manager is a position to be filled by an NBCT with expertise in state and/or district policy and infrastructure development, as well as expertise in state and district National Board Certification candidate support programs.

Andrea Hajek, NBCT, (District Improvement Expert) is Director of Educator Engagement. She has served as a trainer and content expert for the National Board and developed a candidate support program in Hawaii. Over two decades she has worked with English language learners in California, Florida, and Hawaii. Hajek holds degrees from University of Mar del Plata in Argentina.

Emma Parkerson (Process Improvement Expert) is Program Manager. In the National Board's federally-funded Investing in Innovation (i3) Development project, *Building a Pipeline of Effective Teaching*, she provides strategic oversight and leads implementation of National Board Standards and processes in higher education and districts in three states (New York, Tennessee, and Washington). A graduate of The George Washington University, Parkerson earned her professional certification in project management in 2012.

Ronald Thorpe, Ed.D., (Senior Advisor) is President and CEO. A former teacher and administrator, with a career-long focus on the professional development of teachers, he also held senior roles at the Geraldine R. Dodge Foundation, the Rhode Island Foundation, and the Wallace Foundation. Before coming to the National Board, Thorpe was vice president for education at WNET, the nation's flagship public television station in New York City, where he was a founding partner of the International Summit on the Teaching Profession, hosted by U.S. Secretary of Education Arne Duncan. A graduate of Harvard College, he earned both an Ed.M. and Ed.D. from the Harvard Graduate School of Education.

David Haselkorn (Senior Advisor) is Senior Vice President for Policy and Institutional Advancement. He served as Associate Commissioner for Educator Effectiveness in Massachusetts, leading efforts in educator preparation approval, licensure, and leadership, and directed the statewide taskforce that overhauled the state's teacher evaluation system. Haselkorn led the Great Teachers and Leaders work in the state's winning Race to the Top application.

Carnegie Foundation for the Advancement of Teaching. Paul LeMahieu, Ph.D., (Improvement Expert) is Senior Vice President and manages programs and administration. He previously directed the work of the Carnegie Hub, which supports the networks the Foundation convenes to engage problems of education practice in the field. Previously, he served as director of research and evaluation at the National Writing Project in Berkeley, and is former superintendent of education in Hawaii. He holds a doctorate from the University of Pittsburgh.

Penny Carver, (Improvement Expert) is Senior Fellow responsible for leading the development and execution of the Foundation's strategy to advance the performance of educational systems by accelerating their capacity to improve. Previously, she served as senior vice president at the Institute for Healthcare Improvement (IHI), responsible for new initiatives, programs, and services.

Anthony Bryk, Ed.D., (Senior Advisor) is President of the Carnegie Foundation. The former Spencer Chair in Organizational Studies at Stanford University, he helped found the Center for Urban School Improvement to support reform efforts in the Chicago Public Schools and created the Consortium on Chicago School Research. He is a member of the National Academy of Education and was appointed by President Obama to the National Board for Education Sciences in 2010. In 2011, he was elected as a member of the American Academy of Arts and Sciences. Bryk holds a doctorate from Harvard University.

American Institutes for Research. Trisha Hinojosa, Ph.D., (Lead Evaluator) is a Principal Researcher whose work focuses on designing and running large-scale districtwide, statewide, and nationwide studies examining programmatic impacts on student, school, district, and community outcomes. Hinojosa is the principal investigator for a statewide study in Massachusetts that generates inventories and analyses of state and district professional development and is principal investigator of a federally-funded i3 Development Grant focused on English language learners. She holds a doctorate from DePaul University.

Lawrence Friedman, Ph.D., (Senior Advisor) is a Managing Director at American Institutes for Research with more than 25 years of experience in education reform and innovation, serving as principal investigator for an i3 Development project, *SciGames*, with the New York Hall of Science and for National Board's i3 Development project, *Building a Pipeline of Teaching Excellence*. He serves as senior advisor of READ 180 in the Milwaukee Public Schools, funded under the Striving Readers program of the U.S. Department of Education.

C (2) Management Plan

Hub planning period. During the fourth quarter of 2013, the National Board will host a hub initiation meeting. At this meeting, the National Board, with Carnegie's support, will develop tools to support the network in analyzing the root causes of why there are so few highly effective teachers and instructional leaders in high-need schools. The National Board will develop additional tools to engage site partners in identifying primary and secondary drivers that may lead to an improvement in these two conditions. The hub will create a charter to guide all site partners' efforts in this initiative. The charter both informs and is informed by the site partners' priorities, and is designed to guide the collaborative knowledge creation and improvement objectives of the NIC as a whole. The NIC tools and charter will guide the site

partners in building a framework to facilitate decision making about recruitment, selection, and support of highly effective NBCTs and NBCT instructional leaders. Concurrent with hub planning activities, the National Board's hub leader will participate in a three-month, residential fellowship at Carnegie for training in improvement science.

Participant planning period. The National Board and Carnegie will work with site partners to prepare them for the NIC launch meeting. Leaders from each site partner will attend the learning laboratory, an intensive five-day training on improvement science. In addition, all initiative participants will be trained in NIC methodology during in-person and online meetings. The online modules can be used for training purposes over the life of the initiative and afterward to increase awareness, knowledge, and use of improvement science in education. During the first quarter of 2014, site partners will convene for the participant launch meeting to refine their initial project plans, develop site-specific charters to guide their work, and begin preliminary analyses of root causes and solutions to address initiative goals. Site partners will develop clear, measurable performance targets and objectives.

Maintenance period. Over the next six months, site partners will begin implementation of their project plans, while webinars, conference calls, and one-on-one consultations continue on a biweekly basis with National Board. In this phase of the work, Carnegie will continue to provide technical assistance to the National Board in its role as hub. Site partners will focus on establishing the recruitment and selection mechanisms for NBCTs and NBCT instructional leaders, establish linkages with key stakeholders, and identify and develop the policies and structures required to support candidates and instructional leaders over the course of the initiative and beyond. For example, site partners will plan the budget, staffing, logistics, and training materials required to support teachers pursuing National Board Certification.

In the third quarter of 2014, site partners will share their implementation progress at a second convening. Through collaborative planning and solution-sharing, they will resolve issues and identify the results of initial activities. The hub will support site partners' cycles of inquiry and maintain knowledge management processes to support the network's activities.

Through a series of five meetings, one held every six months, members of the NIC will reflect on their progress and continue to refine their approaches, leading to a sustainable network for continuous shared learning. Over the final six months of the initiative, National Board and AIR, with Carnegie's technical assistance, will support each site partner's development of a sustainability plan. Participation in the NIC will support long-term sustainability in states and districts because site partners will have developed new, focused, and measurable ways of identifying problems and potential solutions. The National Board will lead efforts across the network to disseminate findings during and after the initiative. Table 4 describes the management plan in detail.

C (3) Time Commitments of Project Personnel

The time commitments of key project personnel are appropriate and adequate to meet the objectives of the proposed initiative. Andy Coons, NBCT, will serve as Project Director and will devote 25 percent of his time each year of the three-year initiative. The National Board's Vice President of Strategic Initiatives, Joe Doctor, will serve in the role of project manager and dedicate 100 percent of his time each year of the three-year initiative. The NIC's hub leader and improvement expert, Geneviève DeBose, NBCT, will commit 100 percent of her time each year of the three-year initiative. One new hire will devote 100 percent time to the initiative in each of the three years, serving as the state and district site manager. Two additional improvement experts, Andrea Hajek, NBCT, and Emma Parkerson, will commit 25 percent time in each of the

Table 4: Management Plan

Activity	Resource	2013–14				2014–15				2015–16				
		Year 1				Year 2				Year 3				
		3	4	1	2	3	4	1	2	3	4	1	2	3
Hub Planning Period														
Hub Leader Improvement Science Fellowship	Carnegie													
Hub Planning Activities	Hub													
Establish tools and templates	Hub													
Conduct root cause analysis	Hub													
Develop NIC Charter and other founding documents	Hub													
Determine NIC Measurement Analytics	Hub													
Develop site trainings such as boot camps, webinars, etc.	Hub													
Establish knowledge management procedures	Hub													
Hub Initiation Meeting (3 days)	Hub													
Discuss and approve NIC Charter and other founding documents	Hub													
Determine process framework	Hub													
Synthesize root cause analysis to determine drivers	Hub													
Develop processes to support site certification activities	Hub													
Develop processes to support site instructional leader activities	Hub													
Document and distribute the process framework	Hub													
Prepare for first participant meeting	Hub													
Determine agendas, activities, and expected outcomes	Hub													
Plan logistics	Hub													
Milestone: Hub, training, and process framework established														

Activity	Resource	2013–14				2014–15				2015–16				
		Year 1				Year 2				Year 3				
		3	4	1	2	3	4	1	2	3	4	1	2	3
Participant Planning Period														
Site Leader Learning Laboratory (5 days)	Carnegie, Sites		■											
Site Planning Activities	Sites		■	■										
Develop local charter	Sites		■	■										
Align process framework to local improvement priorities	Sites		■	■										
Develop local project plan using the process framework	Sites		■	■										
Certification activities	Sites			■										
Instructional leader activities	Sites			■										
Participant Training (2 days + online modules)	Carnegie, Sites			■										
NIC Participant Launch Meeting (2–3 days)	Hub, Sites			■										
Provide Support and Guidance at Sites	Hub		■	■										
Milestone: Sites implement process framework towards meeting local goals and objectives				■										
Maintenance Period														
NIC Progress Meetings (2–3 days)	Hub, Sites					■	■	■	■	■	■	■	■	■
Iterative Cycles of Implementation and Review	Hub, Sites				■	■	■	■	■	■	■	■	■	■
Carry out implementation plan at local level	Sites				■	■	■	■	■	■	■	■	■	■
Generate work products, case studies, templates	Hub, Sites				■	■	■	■	■	■	■	■	■	■
Provide Support and Guidance at Sites	Hub				■	■	■	■	■	■	■	■	■	■
Develop Sustainability Plan	Hub, Sites												■	■
Milestone: Sites implement locally and monitor collaboratively					■	■	■	■	■	■	■	■	■	■
Evaluation														
Data Analysis	AIR					■	■	■	■	■	■	■	■	■
Findings Briefings	AIR				■	■	■	■	■	■	■	■	■	■
Annual Reports	AIR									■	■	■	■	■
Annual Performance Data Reports	AIR					■	■	■	■	■	■	■	■	■
Milestone: Evaluation analysis completed and findings disseminated														■

three years. Other National Board roles that will contribute to the initiative include data and knowledge management, accounting, and administrative support.

Through a contractual agreement, two Carnegie improvement experts, Dr. Paul LeMahieu and Penny Carver, will facilitate the National Board's role as the network hub. They will contribute significant time in Year 1, gradually shifting to a consultative role in Years 2 and 3. Also through contractual agreement, AIR evaluators Trisha Hinojosa, Ph.D., and Larry Friedman, Ph.D., will conduct evaluation activities over the life of the initiative.

Three senior advisors, Dr. Ronald Thorpe, Dr. Anthony Bryk, and David Haselkorn, will bring vision and strategic expertise to guide the initiative, ensuring its pertinence to broader currents of education reform and innovation. As in-kind contributions, they will provide their expertise in shaping strategies for implementation, evaluation, dissemination, and scaling.

C (4) Sufficient Resources

The proposed management plan includes sufficient and reasonable resources to carry out this initiative. In total, \$15M is requested to support the activities and deliver the outcomes specified for this initiative (see Budget Narrative). In addition to the personnel resources detailed in this section, the management plan includes tasks and milestones that are supported by funding detailed in the project budget and budget narrative. As the collaborative emphasis of this initiative requires frequent and participant-inclusive meeting time, sufficient planning and financial resources have been allocated accordingly. In addition, resources have been allocated for the purchase of knowledge management software to aid in the digital storage, collection, and dissemination of information across all sites. Implementation and maintenance support for this software package has been included as a contractual expense.

D. Sustainability

D (1) Building Capacity to Yield Long-Term Results

This initiative promotes more integrated, efficient, and effective methods of improving teacher effectiveness that are designed to replace existing policies and practices rather than add new ones. These changes will promote a transformed teaching profession, consonant with the vision statement signed at the 2012 Labor-Management Collaboration Conference (ED, 2012b). The initiative builds capacity and yields sustainable results in three ways: (1) through the capacity built in highly effective NBCTs and NBCT instructional leaders; (2) through the sustainable pipelines and pathways built to encourage more teachers to pursue advanced certification and instructional leadership roles; and (3) through the strong foundation of collaboration, improvement, and evidence creation at the heart of this initiative's work.

Within its partner sites, this initiative will result in new cadres of highly effective NBCTs and NBCT instructional leaders. In Kentucky, for example, each of the 12 geographic regions will have an identified and trained corps of expert teachers and instructional leaders. These teachers and instructional leaders will serve as a critical resource for improving teacher effectiveness and supporting complementary system priorities designed to improve student achievement. The initiative as a whole will result in more than 2,800 NBCTs and 800 NBCT instructional leaders across the six partner sites, a sizable group of individuals with expertise and the readiness to share it widely. Improved professional discourse among teachers and instructional leaders exposed to this program will continue to improve teacher effectiveness and increase student achievement long after the initiative ends (see Park et al., 2007). Thousands of teachers will benefit from this expertise beyond the grant period.

This initiative will also put in place policies and programs that strengthen the pipeline into advanced certification and pathways into instructional leadership. Recruitment, candidate support, and incentive structures supporting teachers to pursue National Board Certification will be strengthened. For example, in many partner sites, the state or local union affiliate will develop or expand their candidate support activities, building from best-practice models like Jump Start. In addition, pathways into specific instructional leadership roles targeted to system priorities will be established and utilized. For example, Nevada will strengthen recruitment, support, and staffing structures for peer coaches in implementing its new teacher evaluation system. These pipelines and pathways will remain beyond the grant period.

Finally, the approaches to collaboration, improvement, and evidence creation will lay a strong foundation that will enable this initiative's work to be sustained and expanded. Policy support and leadership commitment for this initiative will be strengthened through state and local labor-management collaboration in developing and implementing policies (e.g., changes to salary scales and introduction of career ladders). Strong labor-management collaboration is a core feature at every stage of the initiative. The NIC will strengthen participants' capacity to use improvement science for continuous improvement. In addition, the cross-site connections made through the NIC process will support additional collaboration beyond the grant period. The results identified by the third-party evaluation on both implementation and impact will build momentum behind the successes of the initiative and drive sustained local and state support in partner sites for continuing this important work.

D (2) Findings and Products Useful to Other Organizations

This initiative will yield findings and products valuable to other states, districts, and organizations as they work to improve teaching effectiveness by transforming their policies,

developing programs, and strengthening system infrastructure. AIR will measure the impact of site partners' strategies, including performance measures on cost, teacher effectiveness, and student learning growth, as defined in the measurable objectives in Table 2 (p. 17).

In pursuit of the first goal, increasing the numbers of highly effective NBCTs in high-need schools, site partners will develop plans specifying budget, staffing, logistics, and training materials required to support their work, as well as sustainability plans to extend that work beyond the period of federal assistance. The knowledge management and evaluation functions of the NIC hub will capture and analyze these findings. As site partners transition to the maintenance period, the National Board will initiate collaborative creation of products including best practices manuals and case studies to support other states and districts interested in replicating the models developed by the six site partners.

Similarly, to support others working to develop instructional leadership roles, the NIC hub and external evaluation partner will closely study the successes and challenges experienced by each site partner. For example, Albuquerque's work to design and launch school turnaround teams staffed by highly effective NBCT instructional leaders will yield insights into how NBCTs can be attracted to high-need schools, form collaborative teams, and develop their colleagues' teaching capacity in specific subjects. Using this data, the National Board will create support manuals and case studies. In addition, results from this initiative will inform the National Board's development of a new standards-based teacher leader credential.

Finally, this initiative will yield products to support other organizations and individuals in leading transformative change. During the NIC initiation period, Carnegie will develop an online improvement science workshop intended to support practitioners. Afterward, this online workshop will be widely disseminated to teachers and administrators, including more than

100,000 NBCTs, providing a unique resource to spread improvement science throughout the profession. The planning period of the NIC process will yield additional templates with value to other organizations interested in identifying new, focused, and measurable ways of solving problems. The National Board will publicly share these templates along with the aforementioned best practices manuals and case studies.

D (3) Dissemination of Results

The National Board and its partners will disseminate results and outcomes:

- The National Board will disseminate findings through its Web site, on its blog, and in communications with more than 100,000 NBCTs.
 - The National Board’s daily e-newsletter *Accomplished Teacher* has a circulation of over 60,000 subscribers and will serve as a key mechanism for sharing results.
 - In addition, findings will be broadly disseminated through the 35 NBCT network affiliates that host regional convenings of NBCTs.
- The National Board will highlight results and outcomes at its annual national Teaching and Learning conference, which is expected to attract 6,000 participants, including NBCTs and other education practitioners, as well as district, state, and national leaders.
- Site partners from the two districts and four states will share results and outcomes through their Web sites, publications, and other communication vehicles. Additionally, site partners will be invited to guest blog for the National Board.
- Carnegie will highlight results from the initiative, with a particular focus on the role and results from the NIC, on their Web site and through their Network of Networks across all of their NIC hubs.
- AIR will communicate evaluation findings via their Web site and at research conferences.

Additionally, the National Board will engage the initiative’s advisory board to disseminate findings and products from this initiative throughout their respective organizations. As signatories to the “Transforming the Teaching Profession” shared vision statement, these organizations are well-positioned to share the results of this initiative through their pre-existing, national networks. This dissemination will generate interest in other states, districts, and schools, and facilitate their uptake of successful policies and practices.

Competitive Preference Priority 2: Improving Efficiency

The recruitment of new, highly effective NBCTs and the deployment of highly effective NBCT instructional leaders will increase student achievement and reduce teacher attrition, which will result in cost-effective, high-quality services at the state and local levels by making better use of existing resources.

Through the NIC, site partners will develop and share cost-effective processes for increasing the number of highly effective NBCTs in high-need schools. States, districts, and candidates spend substantial funds on National Board Certification. Increasing certification achievement rates improves the cost-effectiveness of this investment by reducing the costs entailed in retaking portions of the assessment. National Board data show that providing candidates with structured supports yields higher achievement rates and fewer retakes, saving certification fees. To expend these resources more efficiently, site partners will use rigorous selection processes to identify the teachers most likely to achieve National Board Certification. These teachers will receive structured support, including an NBCT mentor and cohort of candidate peers, throughout their candidacy (see Project Design and Services, p. 15, for additional information about leading candidate support programs).

By increasing the numbers of highly effective NBCTs and NBCT instructional leaders, this initiative will generate efficiencies of student learning that should reduce expenses for remediation programs, summer school, and other services. If translated into teacher-salary costs, this results in average savings of \$9,330 per NBCT. These ongoing savings are expected to lead to further sustainability and expansion of the program after the period of federal financial assistance. This is doubly so as NBCTs stay in the profession longer (NRC, 2008).

Likewise, highly effective NBCT instructional leaders will realize cost savings by reducing teacher attrition. Research shows that implementation of effective school-based mentoring and induction programs is proven to lower rates of turnover among beginning teachers (Guarino, Santibanez, & Daley, 2006). According to the National Commission on Teaching and America's Future, a departing teacher in a mid-sized urban district costs approximately \$15,000 per teacher (Barnes, Crowe, & Schaefer, 2007). More importantly, beyond these financial costs, high teacher turnover negatively impacts professional culture and student achievement (Ingersoll, 2001; Jacob et al., 2012).

E. Project Evaluation

E (1) Thorough, Feasible, and Appropriate Methods

The logic model (p. 16) depicts in broad strokes the proposed pathways of the initiative, the intended participants, the activities, and the desired long-term outcomes. The evaluation is focused on measurement at each juncture in this model. It will measure, for example, who gets recruited and whether recruitment numbers meet the recruitment goals. It will measure whether and why training was perceived as successful. It will monitor the type of schools in which newly-trained teachers and instructional leaders are placed and the effects of those placements. It will examine the effects of NIC-related activities and supports. Detailed measurement at key

junctures throughout implementation will document the extent to which the initiative is implemented as intended—i.e., the inputs are provided and taken up, and the activities occur—and then help partners and other stakeholders understand what is behind changes that are observed in each of the final outcome measures.

The proposed evaluation is a mixed-methods, multi-site evaluation, including a causal and a quasi-experimental design that reflects and accommodates differences across the processes implemented by the site partners. The evaluation will provide frequent formative feedback and summative information, including causal estimates of effects, enabling the National Board, its partners, and stakeholders to assess the impact of the initiative.

The following research questions have been constructed so that their answers provide frequent formative feedback and summative assessment of implementation and impact. These research questions align with the inputs, activities, and outcomes presented in the logic model.

Table 5. Research Questions (RQ)

1	To what extent do site partners successfully recruit highly effective teachers, support their certification process and employ these teachers in high-need schools?
2	To what extent do site partners successfully articulate instructional leadership roles, recruit highly effective NBCTs, support their preparation for those positions, and employ these instructional leaders in high-need schools?
3	What is the impact of NBCTs who earned the certification through this initiative on the following outcomes? <ul style="list-style-type: none"> – Teacher measures of performance (e.g., value-added measures, evaluation scores) – Measures of academic achievement (e.g., standardized tests, graduation rates) for their students
4	What is the impact of NBCTs who became instructional leaders through this initiative on the following outcomes? <ul style="list-style-type: none"> – Measures of performance (e.g., value-added measures, evaluation scores) of the teachers whom the NBCT instructional leaders support – Measures of academic achievement (e.g., standardized tests, graduation rates) for students of the teachers whom the NBCT instructional leaders support
5	To what extent does implementation of this initiative lead to the following? <ul style="list-style-type: none"> – The strengthening of systems for highly effective teachers to earn advanced certification and to become instructional leaders – The development of cost-effective and sustainable strategies for employing and concentrating highly effective teachers and instructional leaders in high-need schools

	<ul style="list-style-type: none"> – The further development of labor-management collaborative practices – The creation and development of a Networked Improvement Community supporting the sustainability and continued development of the initiative’s processes and strategies
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E (2) Performance Measures

Using a combination of extant and newly collected data, the evaluation will provide precise quantitative measurement of key elements of implementation and outcomes, and qualitative data will provide for deeper investigation into facilitators and barriers to implementation within and across partner sites. The specific measures that AIR will collect data for are outlined in Table 2 (p. 17), showing goals, objectives, and measures for each. This will include measuring the percentage of teacher participants who receive advanced certification and are highly effective, and the cost per such participant. AIR will collect perception data from key stakeholders to gather information on successes and challenges associated with this initiative.

Data Sources

Extant data will be used to measure implementation as well as outcomes and will include implementation plan documents; participation data; financial data, including National Board, Carnegie, and individual site partners’ budget and expenditure reports; data on characteristics of highly effective teachers (participants and nonparticipants); student and school demographic data; student performance data (e.g., standardized scores, graduation rates); and teacher performance data (e.g., value-added scores, evaluation scores). AIR will work with each site partner at the start of the initiative to set up a system for the collection and transmission of extant data.

This evaluation will include **newly collected data**, including surveys and interview and focus-group data. AIR will work with each site partner to establish the most effective and efficient ways to collect new data. Electronic surveys will be administered to key stakeholders in this initiative in the spring of each year. These stakeholders will include district officials, school

administrators, school leaders, highly effective teachers, families, and students. Interviews and focus groups will be conducted with a stratified random sample of these stakeholders. These samples from each partner site will be selected to ensure a broad representation of characteristics of participants and implementation. For example, the evaluators might draw a sample of teachers that includes those who have been successful and those who have been unsuccessful in achieving National Board Certification. Selecting samples that span a range of conditions will allow for deeper exploration into differences between successful implementation models and less successful models, allowing AIR to provide detailed feedback that enables site partners to make specific, targeted modifications to their individual implementation model. Data collection instruments (i.e., surveys and protocols) will be carefully constructed so as to not overburden participants, and these instruments will be linked to one another to ensure that multiple perspectives are collected on all constructs of interest.

Research Designs

AIR proposes several designs for the causal component of this mixed method evaluation. The multiple designs ensure that the evaluation is tailored to each site partner's plan. Site partners have selected their preferred design. In order to best understand how the designs would work, the timeline for implementation for each cohort for the first two research designs is presented below. As can be seen in Tables 6 and 7, Cohort 1 will be in schools (as NBCTs or instructional leaders) for two years. Cohort 2 will have one year in schools. Cohort 3 will not enter into schools until after the project period ends, but they will receive training and support.

One research design is a **randomized controlled trial (RCT)**. This design will be used for both initiative goals. Some locations, such as Kentucky, have agreed to participate in this design. In this design, three cohorts of highly effective teachers (Year 1, Year 2, and Year 3) are

recruited at the beginning of the initiative and randomly assigned to treatment conditions (i.e., receive training and support) in one of the three years. Year 2 and Year 3 participants will act as controls for Year 1 and Year 2 participants, respectively.

Table 6. Timeline for Cohort Implementation for RCT

Cohort	Recruitment	Train/Support	Teaching Year 1	Teaching Year 2
1	Oct.–Dec. 2013	Jan.–Aug. 2014	Sept. 2014– June 2015	Sept. 2015– June 2016
2	Oct.–Dec. 2013	Sept. 2014– June 2015	Sept. 2015– June 2016	
3	Oct.–Dec. 2013	Sept. 2015– June 2016		

A second research design is a **cohort comparison design (CCD)**. In this design, data is collected from all participants each year so that those not yet participating in the intervention provide data to be used for comparison purposes. Recruitment in this design is ongoing, occurring at the beginning of each project year. Historical data on all initiative participants will be gathered, enabling cross-cohort comparisons. Various site partners (e.g., Albuquerque, San Francisco) have confirmed this to be a viable recruitment and research strategy.

Table 7. Timeline for Cohort Implementation for CCD

Cohort	Recruitment	Train/Support	Teaching Year 1	Teaching Year 2
1	Oct.–Dec. 2013	Jan.–Aug. 2014	Sept. 2014– June 2015	Sept. 2015– June 2016
2	Oct.–Dec. 2014	Sept. 2014– June 2015	Sept. 2015– June 2016	
3	Oct.–Dec. 2015	Sept. 2015– June 2016		

A third research design is a **regression discontinuity design (RD)** (Shadish, Cook, & Campbell, 2002). This requires an interval measure for selection, which is likely to be the case for the selection of NBCT instructional leaders. In this approach, those who score closest to the cut score (just above and just below) are considered to be functionally very similar, and comparisons across outcomes for these two groups are methodologically sound.

The RCT design allows for stronger causal inferences to be drawn than do the other two designs. The other two designs, however, can often be more feasibly executed. The evaluation will generate combined effect estimates for each of the outcome measures. One possible method for these combined effect estimates is to standardize outcomes within partner sites and then combine those estimates to create an overall effect size for each outcome measure.

Quantitative Analysis

Quantitative data will be used to answer research questions pertaining to implementation (e.g., demographic characteristics of participants, participation and attrition rates, per teacher cost of implementation) (RQ1, RQ2, RQ5) and to examine changes in outcome measures (RQ3, RQ4). Several analytic methods will be used to synthesize these data to answer these questions.

Rasch analysis. To examine the validity and reliability of quantitative response data, surveys will be examined using the Rasch rating scale model (Wright & Masters, 1982). When the data fit the model, the results are easier to synthesize and interpret than single-item reporting of frequencies and the resulting scale scores can be used in parametric inferential models such as those discussed below.

Teacher and student outcomes analysis. Estimating programmatic impact on teachers and students is of central importance to this evaluation. The evaluation will use value-added scores, teacher evaluation scores (as interval or categorical measures), student standardized test scores, and graduation rates as outcome measures. Outcomes from the site partners carrying out RCTs will be fit with a series of multilevel models that calculate both Intent to Treat (ITT) and Treatment on the Treated (ToT) estimates. ITT estimates can be interpreted as the effect of having been assigned to treatment/services (or in the case of this initiative, signing up to pursue National Board Certification). ITT estimates however do not account for dropout or crossover

status, which are likely in real-world program implementation. Therefore, the research team will also calculate ToT estimates. The ToT models correct for this error in estimation through calculation of programmatic impact for only those participants who actually received treatment. One common way of estimating ToT impacts is through the use of an instrumental variables (IV) approach, in which a probability associated with receiving treatment (completing certification) is used as a treatment indicator in place of a binary condition indicator (also known as a two-stage least squares regression; Angrist, Imbens, & Rubin, 1996). These estimates also are important to the assessment of the initiative's impact because they provide the programmatic effect on the outcome measures in the best-case scenario—perfect subscription.

Analysis of data from the Cohort Comparison design studies will be similar in that AIR will employ a series of multilevel models to account for variation within different levels (student, school, district) as well as covariates that control for known influences on outcome measures (e.g., socioeconomic status, minority status).

In addition to regressions that estimate impacts, the research team will also explore the relationship between level of implementation (as measured through survey construct scale scores), dosage (e.g., percent increase in NBCTs and NBCT instructional leaders at a school) and outcomes. Models examining these factors (i.e., implementation, dosage, and outcomes) will also allow us to examine the *added effect* of having increases in both NBCTs *and* NBCT instructional leaders at low-performing schools (provided this condition occurs).

Cost analysis. Understanding costs associated with implementation is also of key importance for this study. Using data about expenditures such as labor costs, meetings, trainings, materials, communications, staffing, technology, and data systems, AIR will produce per-teacher expenditures associated with recruitment, training, and support. This approach will reflect start-

up costs, investments, and ongoing costs. In addition, AIR will collect information on expenditures supporting the activities of this initiative that were not directly supplied through the grant-funding stream. Consideration of the different types of expenditures and the different funding streams will allow for a complete picture of sustainability costs within the partner sites as well as cost estimates for implementation at new sites.

Qualitative Analysis

The qualitative analysis of the interview and focus-group data will be systematic and consistent across analysts and over time. Several methods, therefore, will be used to increase the accuracy and trustworthiness of the data analysis, including the development and use of written coding structures based on individual site partner initiatives, rigorous training of data analysts, multiple-coder rating of a subset of transcripts, and spot checks of coding of a second subset. Research questions pertaining to implementation (RQ1, RQ2) will in part be answered using qualitative data. Research questions related to NIC activities and cost estimates (RQ5) will also be answered in part using qualitative data.

E (3) Ongoing Feedback and Continuous Improvement

The value of an evaluation is connected intrinsically to the success of its communication and reporting strategies. In this initiative, the goal is to design the communication and reporting strategies (and data collection and analysis schedules to the extent feasible) so that findings and recommendations are reported as soon as appropriate, and so that site partners can seize opportunities and address challenges as they emerge.

AIR will provide briefs summarizing emergent findings midway through each year of the initiative (January 2014, 2015, 2016) and at the end of each academic year (June 2014, 2015, 2016). Providing feedback midway and at the end of each academic year will allow the National

Board and site partners to make modifications as needed to the supports offered throughout the project period. AIR will also provide annual reports on programmatic impacts at the end of the project Years 2 and 3. These year-end annual reports will be completed as early as possible (likely late summer), given the availability of student achievement data. AIR will also work with the National Board to submit the annual performance report data as related to each absolute priority. The timeline in Table 8 below highlights the performance feedback as it links directly to evaluation activities.

Table 8. Timeline of Evaluation Activities

Evaluation Activities	2013-14					2014-15					2015-16												
	O	N	D	J	F	M	A	M	J	J	A	S	O	N	D	J	F	M	A	M	J	J	A
Project set up																							
Finalize site specific evaluation design	x	x	x																				
Assist sites in designing implementation data collection systems	x	x	x																				
Assign treatment and control groups (where necessary)	x	x																					
Instrument development																							
Data Collection																							
Collect pre-intervention data		x																					
Collect extant implementation data				x		x				x		x					x		x		x		
Conduct interviews				x		x				x		x					x		x				
Administer Surveys						x	x						x	x					x	x			
Analysis								x	x							x	x					x	x
Communications																							
Hub Initiation Meeting	x																						
NIC Participant Launch Meeting				x																			
NIC Progress Meetings										x									x				x
Conference calls	x	x	x	x	x	x		x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x
Findings briefs				x		x					x					x				x			x
Annual reports																							x
Annual performance data reports								x								x							x

E (4) Sufficient Resources

The AIR project budget reflects sufficient resources for AIR to carry out the initiative evaluation activities described in this proposal, which effectively and efficiently address the evaluation requirements for the initiative. Further, the AIR team conducting the evaluation offers extensive expertise in the areas of quantitative, qualitative, and mixed-methods research and evaluation studies focused on teacher evaluation and professional development as well as knowledge of current issues in educational policy and practice at the school, district, state, and national levels. Approximately 10 percent of the requested funding will be allocated to

evaluation. This cost includes approximately 30 percent full-time equivalent (FTE) commitment from the project director and 15 percent FTE for the principal investigator in each year of the initiative. Their work will be supported by a highly-qualified and experienced team of researchers and data management personnel in Year 1, including a total of 3,280 hours of labor. Year 2 includes 2,956 hours, and Year 3 includes 3,260 hours of labor. Two researchers will visit each partner site two times each year and the principal investigator and the project director will participate in an initial hub meeting and biannual NIC meetings in order to present findings and recommendations, and help partners put findings and recommendations to use in a timely manner. The costs associated with the work reflect three overarching tasks: instrument development and research design; data collection; and analysis and reporting. Over the course of the three-year initiative, these costs are distributed approximately equally; however, Year 1 contains the bulk of the instrument-development costs, with analysis and reporting costs increasing each year.

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