



Supporting Teacher Learning during the Professional Development Experience: The Case of National Board Certification

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Abstract: Amidst increasing globalized pressures to raise student achievement, nations are heavily investing in various forms of teacher professional development. In the United States, teachers are increasingly electing to pursue National Board Certification, yet few studies have analyzed the experience within the greater complex system of teaching and learning. Viewed from this approach, findings from this study suggest that numerous dynamic forces—relationships, partnerships, structures, and policies—interact in various patterns that can potentially support effective teacher professional development. Implications suggest a need for broader conceptualization, greater cohesion, and more strategic integration of teacher learning in education policy.

Keywords: *professional development, National Board Certification, teacher support, complex systems, politics and education*

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Introduction

Current focuses on teacher learning and professional development is predicated on the notion that the instruction teachers receive will in turn improve the instruction their students receive in the classroom. In this sense, the desire for effective professional development is driven by its potential to indirectly raise student achievement. Since No Child Left Behind (NCLB, 2001) was passed, this potential impact—raising test scores—has been of paramount importance in relation to professional development. In fact, funds from Title II, Part A of the current Every Student Succeeds Act (ESSA, 2015) directly support professional learning with a focus on recruiting, preparing, training, and developing teachers and school leaders through sustained, data-driven, research-based activities.

While some researchers in the field center their work on studying the specific programs, practices, and activities that aim to support learning—the *what* of professional development—others focus on the processes related to the topic, debating the sequence of components in a linear framework to achieve this end of increased student learning (Desimone, 2009; Guskey, 2002). Still others in the field advocate for a shift in the research analysis to use a more cyclical, comprehensive, and recursive approach that takes into account the dynamic complexities of the nested systems in which professional development occurs—the *how* of professional development (Clarke & Hollingsworth, 2002; Cochran-Smith et al., 2014; Keay et al., 2018; O’Leary & Wood, 2017; Opfer & Pedder, 2011; Sanford et al., 2015). Recognizing that certain particularities in the environments, aims, and contexts of professional development inherently differentiate its direct application or replication to other settings, these authors instead aim to conceptualize professional development “as a complex system rather than as an event” (Opfer & Pedder, 2011, p. 378), decontextualizing the teaching and learning to elucidate patterns of how and why they occur.

A key aspect of teacher learning in this complex systems model is analysis of the dynamic processes simultaneously occurring alongside teachers’ professional development experiences in order to aid understanding and interpretation of learning outcomes. While the literature has fairly consistently identified several design factors integral for high quality learning (see Birman et al., 2000; Darling-Hammond & Richardson, 2009; Desimone, 2011), a large-scale study surveying more than 1300 educators across the United States found that teachers overwhelmingly hold negative views of current professional development efforts, stating that they are “not relevant, not effective, and most important of all, not connected to their core work of helping students learn” (Boston Consulting Group, 2014, p. 3). Coupled with the innovative affordances of technology, a heightened focus on differentiated and personalized learning within professional development models has shown potential to remediate such dissatisfaction, allowing teachers to customize their learning experiences to meet their individual needs and expertise (Fox et al., 2015; Gamrat et al., 2014). Consistent with the desires expressed by teachers in the BCG study, this shift towards personalized professional development allows teachers the autonomy and relevance they are seeking, actualizing the flexibility that researchers have long advocated in professional development (Borko, 2004; Darling-Hammond & Richardson, 2009; Garet et al., 2001; Guskey & Yoon, 2009). However, just as integral to addressing these particularities of professional development initiatives is the recognition that these experiences take place among interactive, dynamic contexts. These contexts, supports, and interacting relations of this complex system of learning are unfortunately less detailed in the literature.

A consistent trend across countries in the field of education, including the United States, is this heightened commitment to elevate the standards of the profession and to raise student achievement, especially in the current link between educational attainment and participation in the global marketplace (Hutt et al., 2018; Kennedy & McKay, 2011). In some locations in the United States, such as the states of North Carolina and Washington, great numbers of teachers are seeking National Board Certification (NBC) as professional development that will improve their practice and earn a status that will recognize their expertise (NBPTS, 2019b). Given its personalized nature, requiring the development of a portfolio over a year-long period of analysis and reflection centered on one’s own students and instruction, this structure seems in line with the relevant, sustainable elements teachers desire and research has proven effective (BCG, 2014; Desimone, 2009, 2011). While research offers mixed results on the statistical correlation of NBC on student achievement with numerous variables confounding test scores and growth (see Cowan

& Goldhaber, 2016), in the authors' previous study focused on teachers' own perceptions on the impact of the certification process on their classroom, an overwhelming majority (87.7%) reported a positive influence on student learning (Petty et al., 2016a). However, instead of focusing on the *what* of this professional development, this current study seeks to examine the systems and contexts of *how* such teacher learning might occur, continuing the use of teacher voice to inform the analysis of the interrelation of the conditions, agents, and knowledge in this complex system of professional development.

In particular, the political context surrounding this study fuels inquiry into the complexities of enacting effective teacher professional development. Once a priority of the state of North Carolina, education received ample support and funding under the leadership of Governor Jim Hunt, serving as an example for the nation of having a strategic and comprehensive plan (Darling-Hammond, 2010). More recently, education has been seemingly cast aside by policymakers as the state legislature has made cuts to teacher tenure, incentive pay for advanced degrees, and teacher recruitment programs (Dewitt, 2014). Having slipped to one of the lowest states in the national rankings (Bernardo, 2017), efforts are again being made to raise teacher salaries to more competitive levels and reinstate initiatives such as the Teaching Fellows program (Stancill, 2017). Support for NBC is one such example of reform efforts being subject to the fluctuating agenda of state budgets and policymakers, and inquiries, such as this one probing for teacher perspectives, offer valuable insight into the nuances and ramifications of educational policy on teaching and learning.

Hence, the purpose of this study was to examine NBC more broadly in the dynamic contexts of professional development and teacher learning in the United States, specifically the state of North Carolina. The question we posed to teachers, What support did you receive while pursuing National Board Certification? was designed to consider the varying systems and spheres of influence affecting teachers' pursuit of additional certification in education. This inquiry thus serves as a contribution for analysis and discussion of the patterns and particularities in this complex system of teacher learning. After a review of the relevant literature and summary of the methods employed by this study, we share findings of teachers' experiences having gone through this certification process, detailing the varying supports in districts across the state of North Carolina. We then draw implications from this analysis of NBC to shed light on the various nested and interacting systems of education and policy that might influence high quality professional development and emphasize the big-picture, comprehensive outlook and approach needed for supporting such powerful learning experiences.

Review of Literature

With public education increasingly scrutinized in nations across the world, driven by heightened pressures of globalization, competition in the international marketplace, and student performance on international assessments such as the Program for International Student Assessment (Hutt et al., 2018; O'Leary & Wood, 2017), the role and influence of teachers have been examined, expanded, and increasingly emphasized, resulting in a sizable body of literature extending in many directions. Because research has pinpointed strong correlations between teacher quality and student achievement (i.e., Boyd et al., 2009; Darling-Hammond, 2000), continuous efforts to train and maintain teachers with the most effective pedagogical practices consume the focus of many districts and researchers across the nation. While the volume of studies examining such numerous initiatives is consequently monumental, in this review we will primarily focus on synthesizing the features of such professional development experiences that

the literature suggests foster teacher learning. Then, in conceptualizing professional development with a complex systems approach, we will consider how particular aspects of teacher learning, namely the layered contexts and supports, influence learning. Finally, we will narrow our focus to one particular form of professional development, National Board Certification (NBC), in considering the historical, political, empirical, and organizational factors that affect teachers undergoing that process.

Teacher Professional Development

Focused on improving the content and pedagogical knowledge, attitudes and beliefs, and instructional practices of teachers, and thus, learning outcomes of students (Guskey, 2002), professional development seeks to utilize a systematic approach in undertaking these goals. Although the approach may vary greatly in form—as informally as self-reflections and collaborative conversations, or as formally as structured observations, portfolios, conferences, workshops, professional learning communities, book clubs, self- or peer observations, or even inquiry/action research projects (Borko, 2004; Desimone, 2009, 2011)—the literature on professional development does, however, consistently identify several key characteristics for high quality learning. Research (Birman et al., 2000; BCG 2014; Desimone, 2011) suggests the following attributes: a) to be of sizable duration—Desimone (2011) notes at least 20 hours—sustained over time; b) to be coherent, consistent, and connected to teachers’ own knowledge, other current professional development, and the policies and practices of the teacher’s school, district, and state; c) to be focused on content with specific concept development rather than general teaching practices; d) to be active, hands-on learning that engages the participant with meaningful tasks to aid the learning process; and e) to elicit collective participation and collaboration rather than individual consumption. More recently, differentiation of learning that takes into consideration teachers’ backgrounds in relation to their years and types of experiences has shown to positively impact learning (Fox et al., 2015). Approaches to professional development that solicit and value teachers’ own input and inquiries heighten both morale and professionalism (Flint et al., 2011; Hutt et al., 2018). These elements hint at the complexity of the conditions under which professional development takes place, as numerous systems interact in a variety of capacities.

As such, beyond the characteristics of effective professional development, numerous researchers have sought to examine the process by which learning occurs for teachers and, consequently, affects learning for students. Conceptual approaches have included linear models that attempt to detail the sequence of events for teachers’ learning, change in attitude and practice, and ultimate goals of improved student outcomes (Desimone, 2009; Guskey, 2002). Alternatively, diverging from such a cause-and-effect approach, complexity theorists investigate education, learning, and professional development as a more dynamic, cyclical, and recursive system of actions, mechanisms, and elements from numerous layers and levels of influences (Clarke & Hollingsworth, 2002; Cochran-Smith et al., 2014; Davis & Sumara, 1997, 2007; Keay et al., 2018; Mason, 2008; O’Leary & Wood, 2017; Opfer & Pedder, 2011). Recognizing the nested systems in which interacting agents of the experience itself, the individual teacher, and the school exist, there are multiple pathways of interconnected domains during professional development that mediate the professional growth of teachers (Clarke & Hollingsworth, 2002; Opfer & Pedder, 2011). Examined with this conceptual approach of a complex phenomenon, professional development can be detailed with the contextual specificity of systems but also

decontextualized to look for recurring patterns or common affordances emanating from these particularities.

Unique because of its national recognition that spans local, state, and even federal initiatives, NBC offers an interesting case of professional development to be examined from such a complexity theory approach. Various aspects of the certification process can, and have been, analyzed to explain the content features of the required products that prompt teacher learning. A few previous researchers have also conceptualized the NBC process through a framework of complexity theory to examine the emergence of professional communities (Rhoades & Woods, 2013), which then has the potential to improve instructional practices among an extended network of teachers (Rhoades & Woods, 2015). Along with specifics of what the certification entails, crucial to understanding the contexts of this particular form of professional development is the historical background of the creation of the National Board for Professional Teaching Standards, both of which are explained in the following section. From this explanation, the authors shift the study to a concerted consideration of the supports surrounding the certification process, using data from teachers' self-constructed responses to detail this aspect of their learning. As framed by complexity theory, authors propose that the numerous agents, interacting in various capacities and frequencies, will elucidate the need for a highly intentional, comprehensive, and unified approach to professional development across educational institutions and government leaders.

National Board Certification

Responding to the dismal portrayal of public education in the report *A Nation at Risk* (US NCEE, 1983), the National Board for Professional Teaching Standards (NBPTS) was created in 1987 in order to set forth a plan to develop, retain, and reward accomplished teachers through a system of advanced certification. To be eligible for this esteemed accreditation, candidates must hold a baccalaureate degree, a valid state teaching license, and have taught in a public or private school for at least three years (NBPTS, 2021a). There are 25 certificate areas in which teachers can apply, each with their own set of standards that are developed under the guidance of the Board's Five Core Propositions (NBPTS, 2021b):

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

Board certification is voluntary and gives teachers an opportunity to demonstrate their expertise through a rigorous, performance-based portfolio process as well as a computer-based assessment involving self-constructed responses. Teacher learning and mastery are evidenced by four components: content knowledge, differentiation in instruction, teaching practice and learning environment, and effective and reflective practitioner. Candidates are provided standards in each certification discipline to facilitate understanding of accomplished teaching, incorporating the analysis of video recorded lessons, student work samples, and their contributions to developing connections between the profession and the community (NBPTS, 2021a). As common to other forms of professional development, the goal is to demonstrate a positive impact on student learning.

While there is some debate on the direct impact of NBC on student achievement as measured through test scores (Belson & Husted, 2015; Boyd & Reese, 2006; Clotfelter et al., 2007; Cowan & Goldhaber, 2016; Goldhaber & Anthony, 2005; Harris & Sass, 2009; Rouse, 2008; Smith & Colby, 2011; Vandevort et al., 2004), many researchers have documented the rich learning experiences gained by teachers throughout the certification process. With more than 80 percent of study participants attributing a positive impact on student learning through Board certification, citing evidence of students' academic achievement, of their own improved teaching practice, and/or use of effective assessment strategies, researchers suggest a strong link exists between the NBC process and heightened teacher self-efficacy (Petty et al., 2016a). The positive impact of National Board Certified Teachers (NBCTs) can extend beyond student learning in their individual classroom to improved collegial relations schoolwide, supported by the leadership and collective work that the status distinction promotes (Anagnostopoulos et al., 2010; Gaudreault & Woods, 2012) and the professional networks that the certification process help create (Rhoades & Woods, 2013, 2015). More likely than their non-certified counterparts to help fellow educators, NBCTs provide added value in their willingness to offer instructional support to peers and those in their professional networks or learning communities (Frank et al., 2008). Policy can thus play an instrumental role in shaping the magnitude of professionalized pedagogical and organizational structures in the field of education.

All fifty states offer some sort of support for Board certification, and a significant number of states and school systems offer financial incentives. According to NBPTS, (NBPTS, 2021c) these inducements range from allowances covering the \$1900 certification fee to a sizeable salary increase. North Carolina leads the nation in total number of NBCTs with 23 percent of the state's teachers holding certification (NCDPI, 2021). The state has offered incentives for teachers to pursue certification, such as a 12 percent salary increase for the life of the 10 year certification, and provided supports such as low-interest loans to pay the certification fee and three release days to work on completion of the certification portfolio. With significant changes in education policy at both the federal and state level over the past decade, in this research we continue efforts to voice teachers' perceptions of the effect on the profession in relation to NBC. By asking NBCTs to detail the supports they received—and sometimes sharing what they did not receive—we aim to provide a better understanding of the intersecting contextual factors that contribute to meaningful teacher learning.

Research Design

This study is part of a larger research project in which authors analyze teachers' perceptions and experiences related to National Board Certification. Researchers developed a survey including nine demographic questions, 20 Likert item questions based on the Five Core Propositions, and seven open-ended questions (Appendix). In this particular analysis authors utilized participants' responses to one of the open-ended questions, *What support did you receive while pursuing National Board Certification?*

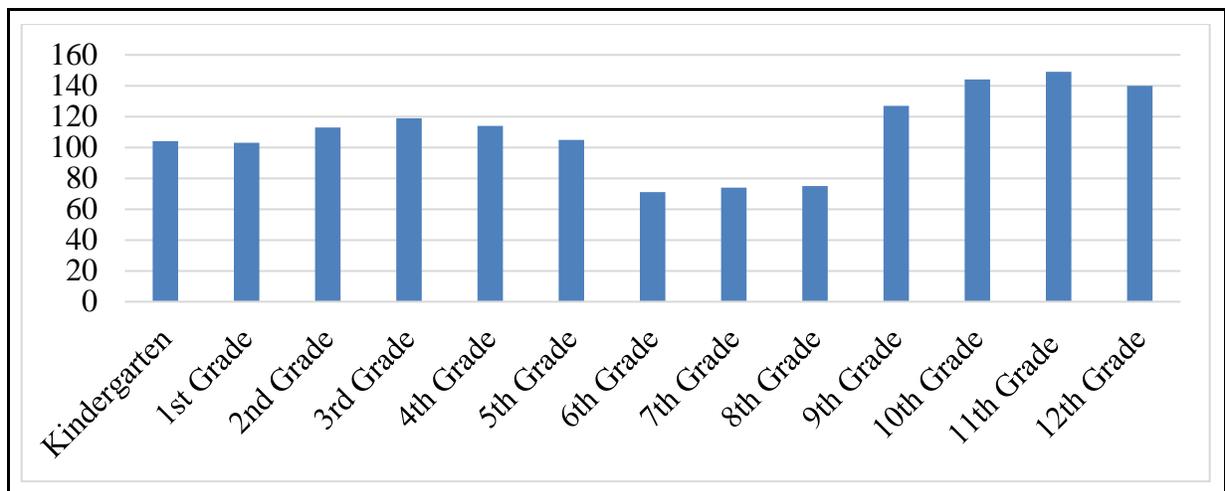
Following Dillman's Total Design Method (Dillman, 2000), authors employed numerous techniques to encourage survey response. To protect participant anonymity, a letter was sent to regional directors of National Board Certification in North Carolina to invite NBCTs from their respective regions to participate in the study. This letter included relevant information about the study: who was conducting it, its purpose, why the individual was asked to participate, the time commitment required, and then the secure link to participate. Two weeks later, regional directors sent a reminder email, and then an additional week later, a follow-up. In this way, researchers

worked to maintain frequent communication with potential study participants while simultaneously assuring these individuals that their responses could not reveal their identity.

Participants

A total of 496 NBCTs who are all currently teaching in North Carolina public schools completed and submitted the survey. Of the 115 school districts in North Carolina, NBCTs in 46 districts participated in the study, representing 40% of school districts in the state. The majority (63%) of participants were from rural schools, 10% of participants reported an urban setting, and 27% identified their schools as suburban. Participants have taught across multiple grade levels (see Figure 1).

Figure 1
Grade Levels Taught by Participants



Most participants (85%) graduated from traditional education teacher preparation programs while 15% entered the teaching profession through lateral entry. The various disciplines of NBC (i.e., Art, English Language Arts, Music) are represented in this sample with the highest relative frequency (34%) of the participants holding a Generalist certificate. The development area for certification is also represented by the participants of this study, with teachers educating the span of ages from early and middle childhood through early adolescence into young adulthood. Participants have taught for 5 to 41 years with the mean years of classroom teaching experience being 18.66 years.

Analysis

The open-ended question was coded using thematic analysis (Braun & Clarke, 2006). To establish trustworthiness through this qualitative process, various levels of analysis occurred (Nowell et al., 2017). Initially, researchers immersed themselves in the data, rereading participant responses before beginning to search for meanings and patterns they could represent through deductive coding. Each researcher evaluated the data independently, making notes about possible codes along the way (Lincoln & Guba, 1985). Next, they compared their analyses and determined inconsistencies. These inconsistencies were discussed in order to establish a codebook (Fereday & Muir-Cochrane, 2006). For example, data points referring to “friend,”

“mentor,” and “co-worker” were identified by the code “relationships”; responses acknowledging a “workday” or “paid leave” were coded “policy”. Authors discussed these codes and revised them as necessary throughout the entire data set. This method of analysis allowed researchers to establish inter-coder reliability (Neuendorf, 2002), with unanimous consensus achieved for each code, as well as to ensure that all data points had been coded.

The initial analysis generated several codes that demonstrated recurring themes emanating from the source of the support described by the participant. These emerging themes were united and categorized into larger themes by each researcher (Aronson, 1995), then discussed collectively to reach consensus on the final themes for this study. These final themes represented a consistent pattern in responses across participants, emanating from the type and source of support they described. For example, researchers recognized that “relationships” included both “colleagues” available through personal relationships and “mentors” assigned to them through district programs. Considering these important tiers, researchers identified the overarching themes of this study as the following: 1) colleague support, 2) district support, 3) state support, and 4) professional organization/partnership support. Each data point that was coded and then themed was tallied to determine the frequencies of each theme. These frequencies are presented in Figure 2 to assist in the interpretation of the findings (Wade, 1993). Participants’ responses to open-ended questions asked on the survey were further analyzed and included in the findings section to offer the perspectives of the NBCTs on the rationale for choosing to pursue certification.

Finally, in determining themes, authors recognize that as with most research studies, limitations do exist. First, this study focused exclusively on NBCTs from North Carolina, which has the most NBCTs of any state in the nation. The supports that these teachers receive differ from other states, and thus the responses from these teachers could vary from those in other locations. Second, the small sample size, in relation to the total number of NBCTs in North Carolina, is a limitation that confounds the generalizability of this study, even to the population it was intended to represent. Researchers utilized personal contacts and in particular relied on the regional directors of NBC identified by the state Department of Public Instruction to distribute the survey to possible participants. However, response rates varied by region and district, which could be attributed to the relationship between the director and NBCTs as well as the adherence to protocols outlined in recruitment efforts. Third, this study focuses on teachers who have achieved NBC rather than those who went through the process. Responses from those who did not pass NBC could vary from those who did, particularly if the supports (or lack thereof) could have been a contributing factor in their submission process. Finally, the data collected for this study was limited to the qualitative responses to the survey items; as common with this methodology, our findings suggest that additional research utilizing interviews might further extrapolate the relationships among the dynamic and interactive contexts referenced by participants.

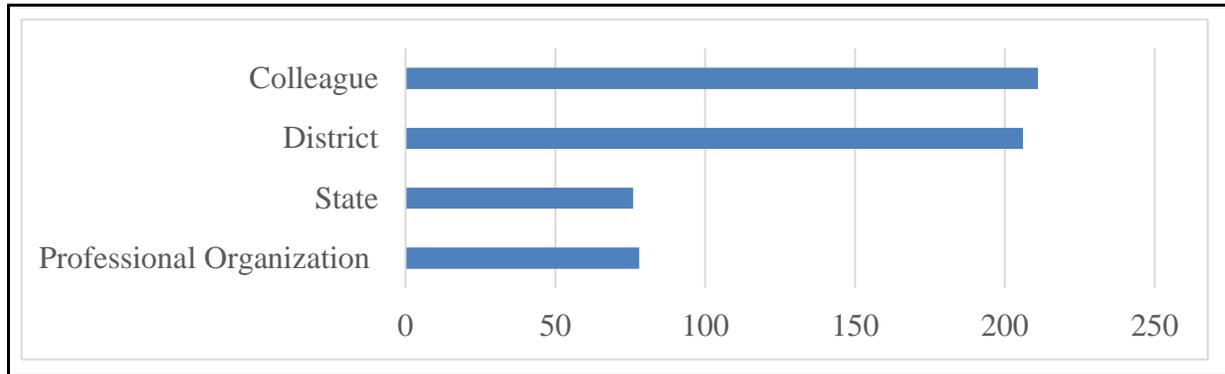
Findings

The participants of this study were asked through an open-ended survey question what support they received while seeking NBC. Their responses varied but fell under the themes of colleague support, district support, state support, and professional organization/partnership support, with specific mention of the North Carolina Center for the Advancement of Teaching (NCCAT), North Carolina Association of Educators (NCAE)/Professional Educators of North

Carolina (PENC), and local colleges/universities. Figure 2 displays the frequencies of each theme identified in the data set.

Figure 2

Supports Received by Teachers During National Board Certification



Support from Colleagues

Support from colleagues was mentioned most frequently by classroom teachers when asked why they chose to pursue NBC. Of the 496 participants, 211 (42.5% of participants) mentioned receiving support from colleagues during the certification process. One teacher said, “We (colleagues) created our own network throughout the US and chatted and collaborated. It was great!” Another described her collaboration with others in more detail:

In my school, there were seven teachers who worked together from October to December. In January of that year, I worked with the other Middle Childhood Generalist to complete the portfolio process. We met after school regularly and on the weekends until the process was completed.

A third teacher commented, “I participated in the process with two other colleagues and we supported each other. There were two other teachers that I knew (one at my school and one at another), who were already certified that answered questions for me as well.” Data repeatedly showed that colleague support was provided for many of the participants of this study. While some participants received support from other colleagues going through the certification process simultaneously, others received support from colleagues who had previously gone through the certification process.

Support from District

Participants also noted that they received support from their school districts. This support came in the form of workshops, support sessions, mentor/mentee pairing, and portfolio reading. Of the 496 participants in this study, 206 (41.5%) mentioned receiving some type of support from their school districts as they were going through the certification process. One participant said,

I was working in County X at the time, and they provided extensive National Board support. They held monthly workshops on each of the portfolio sections and provided a mentor to help us through the process. They also held workshops solely for one-on-one portfolio critique and revision.

Another study participant detailed numerous district supports as such:

I received five days of paid leave and use of a school system laptop to use while going through the certification process. Upon receiving National Board Certification, we received a bonus. We also received \$250 for making copies and a paid mentor.

Additional details of the meaningful supports provided by districts were evident in this teacher's response: "We had monthly meetings for all county NB candidates. We also had an 'away to work' weekend where we could work all weekend long and we had NBCTs to read and offer suggestions for revision." Data such as these reiterate the positive role district supports played in the certification process for these teachers as well as the collaboration with state incentives offered, which are detailed in the next section.

Support from State (North Carolina)

As previously described, the state of North Carolina provides supports for teachers pursuing NBC. Of the 496 teachers surveyed for this study, 76 (15.3%) made some mention of a support that they received specifically from the state of North Carolina. One teacher shared, "At the time (of my certification process) my fees were paid by the state. We also had three work days to work on our (portfolio) entries and readers were provided on one of those days." Another teacher confirmed this stating, "Our state provided 2-3 days we could take to write and work on our portfolio." A third NBCT elaborated her experiences:

When I attempted NBCT status in 1994-1995, Governor Hunt had a lot of programs in place to help teachers to go through what was a then very new process. The state of North Carolina had money to help pay for the cost of the program. There were [sic] some not very useful local support in 1994 and 2002. When I attempted NBCT status in 2001-2002, North Carolina again paid for the cost.

While North Carolina no longer pays for the certification application fee, the state still offers a low interest loan for which teachers can apply, three release days to work on the portfolio components, and a 12 percent pay increase to those that achieve NBC. Other states offer similar incentives for teachers seeking NBC. South Carolina provides an annual \$5000 supplement for the life of the certification while Kansas offers an annual \$1000 bonus (NBPTS, 2021c). Nevada NBCTs receive a 5% salary increase while Florida offers a salary bonus (NBPTS, 2021c). Participants cited the financial compensation as a major motivator for their pursuit of the certification (Petty et al., 2016b), and these responses further detail the value of state policies supporting NBC. The number of NBCTs continues to rise across the United States. Even amidst the pandemic of 2020, an additional 2570 teachers achieved NBC while 2484 Board-certified teachers successfully renewed their certification, bringing the number of NBCTs to over 128,550 across all 50 states (NBPTS, 2021d).

Support from Professional Organizations/Partnerships

Support from NCCAT

The North Carolina Center for the Advancement of Teaching (NCCAT) was established by the state legislature in 1985. NCCAT has several facilities in North Carolina where teachers can attend intensive professional development, to 'advance teaching as an art and a profession'

(NCCAT, 2014). Of the 496 study participants, 78 (15.7%) mentioned the support that they received from NCCAT while they were pursuing NBC. One teacher said,

The North Carolina Center for the Advancement in Teaching was very influential in my pursuit of NBC. They assigned me a mentor that guided me through the process. It also gave me the opportunity to network with other middle school science teachers across the state.

Another participant commented, “I was also able to attend the North Carolina for the Advancement in Teaching for a four-day session that greatly helped me refine and finish up the writing needed for my portfolio.” With even more detail, a third stated,

I attended a week-long session at NCCAT. This time to dedicate on the front end of the process was unbelievably important in fostering my confidence and general knowledge about what I had to do. It helped me develop a reasonable timeline and establish short-term and long-term goals. My mentor from NCCAT provided support throughout the process.

NCCAT continues to be a resource that benefits many teachers from North Carolina.

Support from NCAE/PENC

Just under 10% of study participants ($n=46$) mentioned support that they received from two professional organizations: North Carolina Association of Educators (NCAE) and Professional Educators of North Carolina (PENC). One teacher commented, “I attended sessions through my professional organization (PENC).” Another said, “NCAE had a boot camp in Raleigh for candidates.” A third commented, “I attended several workshops offered by NCAE.” These professional organizations continue to assist teachers who are pursuing NBC.

Support from Institutions of Higher Education

A few study participants ($n=29$) said that they had received support from colleges/universities during the certification process. “I attended National Board sessions at my closest university,” stated one participant. Another said, “I went to one university’s support group meetings one Saturday each month during the process.” Other participants mentioned courses that they took at higher education institutions that prepared them for the NBC process.

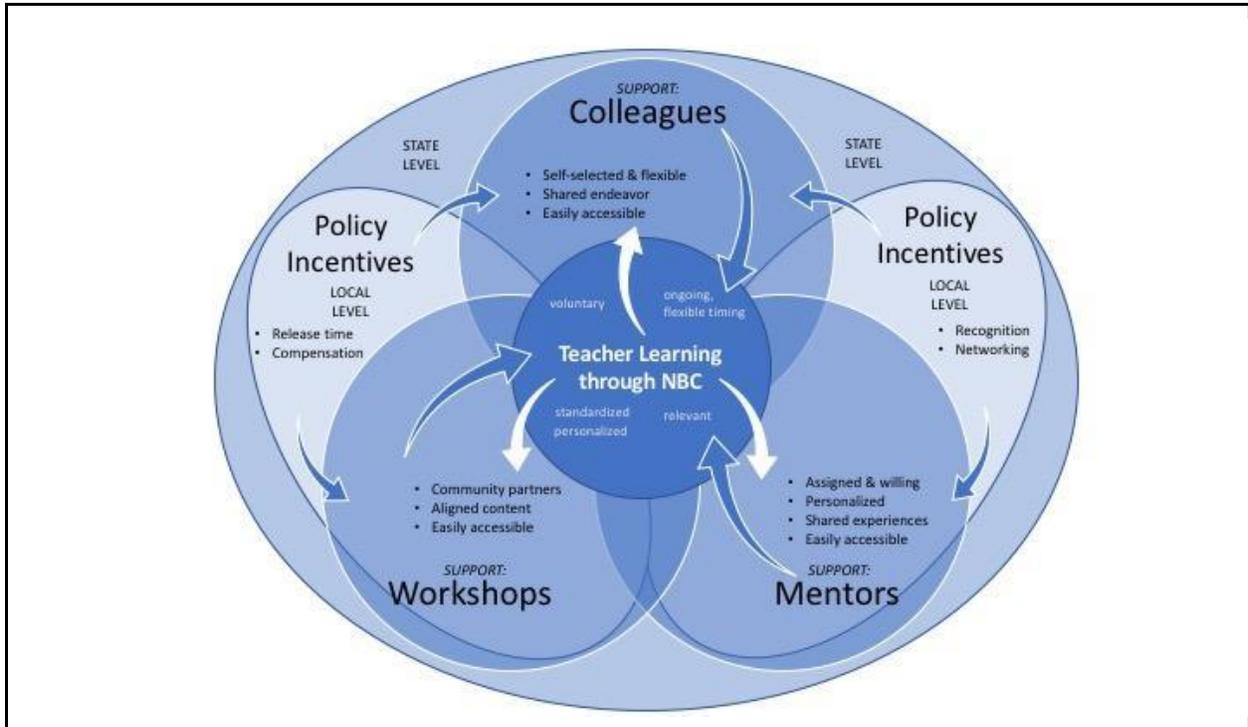
Discussion

These findings reveal important details from teachers’ perspectives of the conditions and contexts influencing their professional development experience of NBC. When considered as a complex system, it becomes apparent that NBC takes place among numerous nested systems and interrelational agents active in the process of teaching and learning. Previous research has provided insight into the relationship between teachers and the experience itself, suggesting positive reciprocal interactions with the process improving pedagogical practices of teachers and their colleagues (Anagnostopoulos et al., 2010; Frank et al., 2008; Gaudreault & Woods, 2012; Petty et al., 2016b; Rhoades & Woods, 2013). Several characteristics of the NBC process seem to align with research findings of effective learning experiences, namely the voluntary participation (Flint et al., 2011), extended duration of time required to complete the process (Desimone, 2011) with submission taking place over the course of a year, and the direct relevance of the work in application to teaching practices taking place in one’s own classroom

(Birman et al., 2000; BCG 2014; Gore et al., 2017). Furthermore, the rigorous portfolio process of analyzing and reflecting upon one’s lessons are practices commonly recognized of effective professional development (Borko, 2004; Darling-Hammond, 2009; Fox et al., 2015). The increasing number of teachers pursuing NBC (NBPTS, 2021d; Will, 2017) speaks to the appeal of this professional development experience. As seen in Figure 3, these characteristics and dynamics of teacher learning through NBC are at the center.

Figure 3

Teacher Learning Through NBC as a Complex System of Supports and Policies



Beyond the interaction between the individual and the activity, the *what* of the professional development, in this study we take a broader look at the complex system of professional development with NBC as a process amidst numerous dynamic forces and contexts, particularly the supports helping facilitate teacher learning. From this data, the relationships among teachers become increasingly significant, as teachers cited this collaboration with colleagues as an influential support both in persisting with the challenge of the task and in sharing their expertise. While this notion of collaboration is consistent with descriptors of professional development (Birman et al., 2001; Desimone, 2011; Gore et al., 2017), participants’ responses offered insight into the intersecting components of autonomy and collaboration. It is noteworthy that participants not only mentioned appeal and appreciation for the support and working in conjunction with other teachers, but also described their self-driven efforts to forge these partnerships. Rhoades and Woods (2013) explain this self-emergence of organization as a product of the complex system of NBC and conceptualize its development of a shared repertoire among candidates. Similarly, in this data, whether virtual or face-to-face, teachers reported allying themselves with a colleague to strengthen their learning during the certification process and honored their joint determination to achieve the higher standards set forth by NBPTS. The

flexibility and autonomy of these decisions in combination with collaboration with colleagues seems to be a condition in this data that supports teacher learning. This support, its characteristics, and interactions are depicted in the top circle of Figure 3.

Additionally, mentorship was another pattern of collaboration evident in the data, as participants credited help they received from more experienced NBCTs as influential to their certification. Whether the mentor was assigned from an outside organization such as NCCAT or provided through the local school district, these pairings offered the one-on-one support participants needed to critique their reflections. Although mentorship has been repeatedly shown to support and retain early career teachers (e.g., Hobson et al., 2009, Ingersoll & Strong, 2011), current challenges such as inadequate resources in districts (Hall et al., 2017) and increasing pressure for evaluative roles (Carver & Feiman-Nemser, 2009; Fransson, 2010), have shown to be hindrances for such beginning teacher support programs. Also, while mentorship is often a focus of teachers and teacher candidates in their early stages of licensure (Henning et al., 2015), the NBC process promotes continued mentorship beyond the first three years of a professional career. This additional layer of support which the NBC process was able to provide for the professional development of teachers shows the intersecting roles of community organizations, district level staff, and school-based mentorship programs. This support, its characteristics, and intersections are depicted in the bottom right circle of Figure 3.

Teacher learning also took place with the classes and workshops offered by local organizations and institutions of higher education. Outside of their own efforts to engage in the reflective practices facilitated by the NBC portfolio process, teachers report gaining valuable development from NCCAT, NCAE, and universities. Such partnerships exist in other states and are even more pronounced, evident by Kentucky's state university system integrating NBC with graduate and doctoral level courses. The national recognition of this certification process aids the collaboration across grade levels, content areas, districts, and groups with its common language and vision of pedagogy and practice outlined through the standards. Previous researchers have suggested that coherence is a vital element of professional development, with learning thriving when it is consistent with teachers' own belief systems (Desimone, 2009), connected to and builds off of their own knowledge and other current professional development (Birman et al., 2000), and is integrated with the policies and practices of the teachers' school, district, and state (Darling-Hammond, 2000). In this case, the availability of resources outside that which teachers' own school and district could provide proved to offer pivotal learning experiences for teachers. A number of variables surround the effectiveness of this support, from the proximity of these partnering organizations to teachers' locations all the way to the policies that allowed for teachers' paid leave to enable these opportunities. This support is then depicted in the bottom left circle of Figure 3.

This latter point segues into a major intersecting domain in the complex system of professional development—the policy and political context of the local/state education. In some locations such as the site of this study, North Carolina, educators are awarded three release days from the classroom in order to work on their NBC. In this study participants voiced a strong appreciation for this policy, as it allowed them the time to fully immerse themselves in their learning. Reflective of the interactive nature of this complex system, this policy influenced some teachers' use of existing supports: some teachers used this time to attend workshops, multiple-day sessions, or collaborate with others to refine their portfolio entries. When combined with the financial incentives offered by the state, a 12 percent salary increase and low-interest loan to help with the application fee, these policies have resulted in the state having the highest number of

NBCTs, almost double the next leading state. Previous authors have found monetary compensation to be a leading motivator for teachers to pursue NBC (Anagnostopoulos et al., 2010; Petty et al., 2016b), and thus this incentive is part of the complex system of incentives and supports influencing teacher learning. These policies are the backdrop of the professional development experience and depicted as such in Figure 3 by the largest oval in which the systems of supports are nested. Policies at the local or district level either reinforced state incentives or even supplemented them to help teachers make use of available supports and resources. Particularly in large districts, participants credited the established programs that assigned them NBCTs as mentors and the additional district-led workshops that facilitated networking and collaboration during the certification process. With NBC a commonly recognized form of professional development supported at both state and district levels and integrated into the work of professional organizations in the area, there is consistency and alignment across these layers of support. Though this data was limited to participants in North Carolina, the leading state of NBCTs, additional incentives have been instituted in other states, including the recent recognition of “National Board Certified Teacher Day” in Louisiana (NBPTS, 2021f). Table 1 details the supports and incentives offered by states with the highest number of NBCTs to show the various intersections across levels of supports from the state, district, and community.

Table 1
National Board Certification Incentives and Supports of States with Most NBCTs

State	NBCTs	Incentives	Supports
North Carolina	23,032	12% pay increase	-low cost loan program -three release days -local partnerships and varied district support
Florida	13,572	varies by district	-varies by district
Washington	11,598	annual bonus of \$5,296	-conditional loans for application fee -Jump Start and Home Stretch support programs
South Carolina	9,284	annual supplement of \$5,000	-district assigned staff person for NBCT -CERRA and professional organizations
Mississippi	4,441	annual supplement of \$6,000	-low interest loan program -four campuses of state university system offer World Class Teaching Program
Kentucky	4,105	annual bonus of \$2,000	-application fee reimbursement -two state universities offer Jump Start support program

Implications for Policy

Just as the provisions of Title II funds allow states the flexibility and autonomy to determine use of professional development, this data suggests that teachers in North Carolina likewise make use of available flex days and personalized choice for learning opportunities through the process of NBC. North Carolina designates Title II, Part A funds to support teacher learning through professional development plans (PDPs) with a partnership model that engages its Department of Public Instruction, community partners such as NCCAT, and school- and

district-level professional learning networks (NCDPI, 2017). This partnership model emerged in this study's data, suggesting some effectiveness of reaching teachers in the classroom. Because Title II, Part A funds are aimed to improve teachers' instruction, particularly of educationally disadvantaged children, states can consider how to incorporate the standards set forth by the National Board across various partners engaged in these professional development efforts.

When states, districts, and professional institutions hold a common vision—national standards—for teaching, there is consistency in the learning these various entities offer to educators. When priorities shift, however, such as a heightened emphasis on student achievement evidenced by test scores as promoted by NCLB (2001) legislation and the Race to the Top competitive grant program launched in 2009, there can be conflict in the policies and structures incentivizing teacher learning, leadership, and performance. For example, in 2012, Charlotte Mecklenburg Schools, the second largest district in North Carolina and seventeenth in the nation, initiated Success by Design, a program aimed at offering highly-effective teachers opportunities to advance their careers—and boost their paycheck—without leaving the classroom by increasing instructional responsibility. Supports for NBC detailed by this study's participants—district workshops, readers, and mentors—are no longer mentioned (CMS, n.d.). With recent policy changes in ESSA (2015) once again allowing states the flexibility to measure teacher quality beyond impact on student test scores, the district might choose to ignore or respond to such changes. This fluctuation in policy hinders the collaboration among entities detailed in this study to support teacher learning yet needs to be addressed by all stakeholders.

Similarly influenced by federal policy, the current teacher evaluation system in North Carolina includes six standards, one of which is directly tied to teacher pay: Teachers contribute to the academic success of their students. If the state utilizes the newly-granted provisions of ESSA (2016) for more autonomy in teacher evaluation systems, other standards (i.e. Teachers demonstrate leadership, Teachers know the content they teach) closely aligned to the Five Propositions might be emphasized more. In this way, teacher professional development and evaluation might be more aligned, with policies and supports, such as mentorship and professional learning communities, all working towards common professional goals. In fact, it is this sort of coherent continuum of the profession that NBPTS advocates in building a “pipeline to accomplished teaching” (NBPTS, 2021e). Recently redesigned in 2016, NBC has already adapted to be more compatible to state licensure processes, including the shift from a ten-year to a five-year cycle of renewal. Coordinating these learning experiences and requirements for teachers would help streamline and professionalize the work of teachers.

Conclusion

With increasing pressures to raise student achievement in countries around the world, the quality of teacher education and teacher learning has come to the forefront of the educational agenda. In the United States, professional development consumes approximately \$18 billion annually of education budgets in accordance with this focus on strengthening the teaching force, yet teachers are overwhelmingly dissatisfied with the learning opportunities presented to them (BCG, 2014). Similarly, researchers in the field lament that these professional development experiences are “woefully inadequate...fragmented, intellectually superficial, and do not take into account what we know about how teachers learn” (Borko, 2004, p. 3). Despite this, teachers are increasingly electing to pursue National Board Certification, which makes it worthy of study not just in the context of *what* the experience offers, but also the *how* with its place in the greater complex system of teaching and learning.

Viewed from this approach, these findings suggest that the numerous dynamic forces detailed in this study—the relationships, partnerships, structures, and policies—interact in various patterns and pathways that can potentially support effective teacher professional development. In this nuanced examination of NBC, driven by the voices of teachers themselves, researchers elucidate the complexities in education and offer some of the most pressing considerations from the perspective of members of the workforce. While these findings may not serve as characteristics to guarantee effective professional development, by describing the overlapping and interconnected relations and patterns in this study, authors point to the need for broader conceptualization, greater cohesion, and more strategic integration of teacher learning in practice and education policy, as called for by other researchers (Darling-Hammond, 2014; Keay et al., 2018). Responding to the call for contextualized research on effective professional development (Fox et al., 2015), authors contribute a new framework of analysis from which to consider NBC and a clearer understanding of the deeper impact that frivolous policymaking in education has on teachers, their learning, their schools, and their students.

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Appendix
Survey of National Board Certified Teachers

- 1) In what state did you achieve National Board Certification?
- 2) In what state are you currently employed?
- 3) Which term best describes your school?
 - a) Rural (school is located in a small town/country)
 - b) Urban (school is located in the city)
 - c) Suburban (school is located within driving distance of a city)
- 4) What grade level do you teach? Select all that apply.
 - a) Kindergarten
 - b) 1st Grade
 - c) 2nd Grade
 - d) 3rd Grade
 - e) 4th Grade
 - f) 5th Grade
 - g) 6th Grade
 - h) 7th Grade
 - i) 8th Grade
 - j) 9th Grade
 - k) 10th Grade
 - l) 11th Grade
 - m) 12th Grade
- 5) How long have you been teaching?
- 6) Which term best describes you?
 - a) Traditional Education
 - b) Graduate
 - c) Lateral Entry Graduate
- 7) What year did you certify?
- 8) What National Board certificate subject area do you currently hold?
 - a) Art
 - b) Career and Technical Education
 - c) English as a New Language
 - d) English Language Arts
 - e) Exceptional Needs Specialist
 - f) Generalist
 - g) Health Education
 - h) Library Media
 - i) Literacy: Reading - Language Arts
 - j) Mathematics
 - k) Mathematics
 - l) Music
 - m) Physical Education
 - n) School Counseling
 - o) Science
 - p) Social Studies – History

- q) World Languages other than English Other:
- 9) Select a development area for the certificate you hold.
 - a) Adolescence and Young Adulthood
 - b) Early Adolescence
 - c) Early Adolescence through Young Adulthood
 - d) Early and Middle Childhood
 - e) Early Childhood
 - f) Early Childhood through Young Adulthood
 - g) Middle Childhood

For questions 9-29, consider your teaching prior to pursuing National Board Certification and after the NB process. Rate yourself both before the certification process and after the certification process using the given scale: strongly disagree, disagree, neutral, agree, strongly disagree.

- 10) I am dedicated to making knowledge accessible to all students. I believe all students can learn.
- 11) I treat students equitably. I recognize the individual differences that distinguish my students from one another and take into account for these differences in my practice.
- 12) I understand how students develop and learn.
- 13) I respect the cultural and family differences students bring to their classroom.
- 14) I am also concerned with the development of character and civic responsibility.
- 15) I have mastery over the subject(s) I teach. I have a deep understanding of the history, structure and real-world applications of the subject(s).
- 16) I have skill and experience in teaching my content area, and I am very familiar with the skills gaps and preconceptions students may bring to the subject.
- 17) I am able to use diverse instructional strategies to teach for understanding.
- 18) I deliver effective instruction. I move fluently through a range of instructional techniques, keeping students motivated, engaged and focused.
- 19) I know how to engage students to ensure a disciplined learning environment, and how to organize instruction to meet instructional goals.
- 20) I know how to assess the progress of individual students as well as the class as a whole.
- 21) I use multiple methods for measuring student growth and understanding, and I can clearly explain student performance to parents.
- 22) I model what it means to be an educated person. I read, I question, I create, and I am willing to try new things.
- 23) I am familiar with learning theories and instructional strategies and stay abreast of current issues in American education.
- 24) I critically examine my practice on a regular basis to deepen knowledge, expand my repertoire of skills, and incorporate new findings into my practice.
- 25) I collaborate with others to improve student learning.
- 26) I am a leader and actively know how to seek and build partnerships with community groups and businesses.
- 27) I work with other professionals on instructional policy, curriculum development, and staff development.

- 28) I can evaluate school progress and the allocation of resources in order to meet state and local education objectives.
- 29) I know how to work collaboratively with parents to engage them productively in the work of the school.

For questions 30-41, please respond Yes or No and Explain as indicated.

- 30) Why did you choose to pursue National Board Certification?
- 31) What support did you receive while pursuing National Board Certification?
- 32) Have you renewed? Yes No
- 33) If not, do you plan to renew? Yes No
- 34) Explain your answer to question 33.
- 35) Does your district financially support the renewal process? Yes No
- 36) If so, how?
- 37) Have you seen evidence of improved student learning in your classroom as a result of going through the NB process? Yes No
- 38) Explain your answer to Question 37.
- 39) What have you learned about yourself as a teacher by going through the NB process?
- 1) 40) Have you experienced leadership opportunities as a result of the NB process? Yes No
- 40) Explain your answer to Question 40.

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