EFFECT OF NATIONAL BOARD CERTIFIED TEACHERS ON STUDENTS' SOCIAL-EMOTIONAL COMPETENCIES

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Abstract

The study examined the effect of National Board Certified Teachers (NBCTs) on social-emotional competencies of fifth and sixth graders in the 2018–19 academic year in Spokane, Washington. The study used archival data and quasi-experimental design with matching to compare social-emotional competencies of students taught by NBCTs and students taught by non-NBCTs. The study examined 10 social-emotional competencies. The results suggest that NBCTs are significantly more effective than non-NBCTs at facilitating students' self-efficacy approximately 2 months after the start of the school year (effect size = 0.21). Results for self-management are in the same direction (effect size = 0.10), however not statistically significant. Findings for the remaining eight social-emotional competencies are not statistically significant, and the effect sizes are small. The results also suggest that NBCTs are effective at developing social-emotional competencies for students who are native English speakers for two social-emotional measures: self-efficacy (effect size = .23) and social awareness (effect size = .16). The study is the first attempt to rigorously examine the effect of NBCTs on students' social-emotional competencies. Although the evidence is encouraging, additional rigorous research is needed to make confident conclusions, particularly for students who are English language learners and from different racial/ethnic subgroups because of the small number of these students in the current study.

Introduction

Educators, policy makers, and researchers agree that children need to develop strong social-emotional competencies (Durlak et al., 2011; Chernyshenko et al., 2018). Social-emotional competencies include intrapersonal (e.g., self-awareness) and interpersonal (e.g., relationship building) skills that enable an individual to successfully navigate educational, professional, and personal contexts (e.g., Berg et al., 2017; Collaborative for Academic, Social, and Emotional Learning [CASEL], 2021b; Kendziora & Yoder, 2016). Well-developed social-emotional competencies have been linked to improvements in academic achievement, high school graduation, employment, and mental health and to decreases in the likelihood of substance abuse, arrest, and public assistance (e.g., Durlak et al., 2011; Hawkins et al., 2005; Jones et al., 2015; Sklad et al., 2012). The COVID-19 pandemic has heightened the need for social-emotional competencies to help students cope with stressors related to the pandemic, such as transition to online learning, isolation from peers, health concerns, and financial stability of students' families. The National Survey of Public Education's Response to COVID-19 found that district leaders were concerned about students' social-emotional needs during the pandemic and, therefore, were expanding supports and programs focused on social and emotional well-being (Pitluck & Jacques, 2021). The survey also highlighted a stronger need for social-emotional student supports in high-poverty districts because these districts serve students from families greatly susceptible to challenges brought on by the COVID-19 pandemic (Vinson & Naftzger, 2021).

With increased focus on social-emotional competencies prior to and during the COVID-19 pandemic, numerous programs have emerged to support the development of students' social-emotional competencies. A 2011 meta-analysis of social-emotional programs, for example, identified 213 school-based programs (Durlak et al., 2011). Because programs vary considerably

in the skills taught, implementation requirements, ages of children served, cost, and other characteristics (Durlak et al., 2011; Jones et al., 2021), selecting the right program for local needs could be a challenge for education leaders.

We propose that the National Board Certification, which is a voluntary national certification founded in 1987, could be a potential avenue for addressing social-emotional needs of preK−12 students. First, to become National Board certified, teachers must demonstrate, through video submission, skills for supporting students' social-emotional development. For example, teachers must demonstrate how they support students in becoming confident and independent (National Board for Professional Teaching Standards [NBPTS], 2016, 2021b). And second, National Board Certified Teachers (NBCTs) are effective mentors (Zhu et al., 2019) who potentially could help other teachers develop or improve teaching of social-emotional skills. Also, access to NBCTs may be attractive—because investment in the National Board Certification is widespread, many states could rely on existing NBCTs for teaching social-emotional competencies in their classrooms and as a support for other teachers. For example, Piedmont City School District in Alabama and Bellevue School District in Washington have approximately 45% of their teaching workforce National Board certified (NBPTS, 2021a). To date, however, research has not examined a relationship between the National Board Certification and students' social-emotional competencies—a gap in knowledge that the current study begins to address.

The study examined the relationship between the National Board Certification and students' social-emotional competencies in Grades 5 and 6 in the 2018–19 academic year in Spokane, Washington. The study's findings suggest that NBCTs are significantly more effective than non-NBCTs at promoting students' self-efficacy (measured the first semester of the school

year), with results for self-management following the same pattern but not reaching statistical significance. On other indicators, for example social-awareness and grit, the results are similar between students of NBCTs and students of non-NBCTs. In the remainder of this paper, we describe how we arrived at these conclusions and present findings for subgroups of students based on race/ethnicity and English language learner (ELL) status.

Defining Social-Emotional Competencies and Social-Emotional Learning

The prevalent framework of social-emotional competencies developed by CASEL identifies five interrelated social-emotional competences: self-awareness, self-management, social awareness, relationship skills, and responsible decision making (CASEL, 2021b). Self-awareness (e.g., recognizing emotions, thoughts, and their influence on behavior; assessing personal strengths and limitations) and self-management (e.g., effectively regulating emotions, thoughts, and behaviors in different situations; setting goals) capture intrapersonal competencies, or an *emotional* component of the social-emotional equation. Social awareness (e.g., empathizing with others, understanding social and ethical behavioral norms, and recognizing available resources and supports), relationship skills (e.g., establishing and maintaining healthy relationships, communicating well with others, negotiating conflict, and seeking and offering help when needed), and responsible decision making (e.g., making constructive choices, evaluating consequences of actions, and considering the well-being of self and others) capture interpersonal competencies or a *social* component of the social-emotional equation (CASEL, 2021b; Green et al., 2021). Research points to environmental supports, such as a safe and welcoming school climate, and positive relationships with parents, teachers, and other adults as important components of social-emotional development (Jennings & Greenberg, 2009; Mahoney et al., 2021; Moradi et al., 2018; Wallender et al., 2020).

The development of social-emotional competencies occurs in four key contexts: classrooms, schools, families, and communities (CASEL, 2021b). Although all these contexts are indispensable at facilitating social-emotional development of children, our research focuses on preK-12 classrooms, specifically Grades 5–6. The adoption of social-emotional standards in preK–12 has been growing across the nation. All 50 states have established social-emotional standards for prekindergarten, and 20 states have social-emotional standards for K–12 (CASEL, 2021a; Jones et al., 2021). The process by which students are taught social-emotional competencies is known as social-emotional learning or SEL.

SEL strategies and programs vary considerably but usually focus on a subset of social-emotional competencies, such as emotional development or prosocial behavior; focus on positive school climate; include instruction embedded in a regular classroom or delivered as a separate curriculum; provide professional development and support to teachers; can be taught by school staff or external providers; and can have an associated cost for access to materials and supports (e.g., Durlak et al., 2011; Jones et al., 2021; Newman, 2020).

SEL is well researched, including by studies that use both experimental and quasi-experimental design and meta-analytic approaches. In the following sections, we summarize the research about the direct impact of SEL on students' social-emotional competencies and the indirect impact of SEL on academic and behavioral outcomes.

Direct Impact of SEL on Social-Emotional Competencies

SEL interventions first and foremost aim to improve social-emotional competencies of students (Sklad et al., 2012). Research shows that school-based universal SEL interventions succeed at achieving this goal across all grade levels. The first large-scale meta-analysis of SEL—based on 213 interventions, 99 of which were randomized controlled trials with the

remainder including at a minimum a control group—found that SEL delivered in school improved students' social-emotional skills by 0.57 standard deviation (*SD*), on average, which was statistically significant (Durlak et al., 2011). The 270,034 students in the study were aged between 5 and 18. Social-emotional competencies included a range of cognitive, affective, and social skills, such as goal setting, conflict resolution, and identifying emotional cues. Related to social-emotional competencies, the study examined the impact of SEL on students' attitudes toward self and others (e.g., self-esteem, attitudes toward school and teachers) and found that SEL improved attitudes by an average of 0.23 *SD*, which was statistically significant.

Meta-analyses published since Durlak et al.'s study further confirm these findings. Sklad and colleagues found that school-based SEL interventions had a positive impact on students' attitudes toward self and social-emotional competencies, with average effect sizes of 0.46 and 0.70, respectively (Sklad et al., 2012). Wigelsworth and colleagues (2016) identified average effect sizes of 0.53 on social-emotional competencies and 0.17 on attitudes toward self, and Taylor and colleagues (2017) found the average effect size of 0.17 on social-emotional skills and attitudes. A recent meta-analysis of prekindergarten interventions found a positive and statistically significant impact of SEL on social-emotional skill development of all preschoolers, with the effect sizes of 0.34 *SD* and 0.44 *SD* for targeted SEL programs delivered to students at risk (Murano et al., 2020). All meta-analyses were exclusively or nearly exclusively based on randomized controlled trials and quasi-experimental studies and included large student samples across many grade levels.

An important finding in the syntheses of SEL research is that the impacts of SEL programs endure over time. The focus of Taylor's meta-analysis was on the long-term effects of SEL. Combining findings from 82 studies (52 randomized controlled trials) that examined outcomes for

K–12 students (n = 97,406), Taylor and colleagues (2017) found that, 56 to 95 weeks after an intervention ended, measures of attitude and social-emotional competencies were 0.13 and 0.23 *SD*s higher, respectively, for students served than for students not served. Both results were statistically significant. Other meta-analyses that examined outcomes for programs that typically ended 1 year prior also found that the impact of SEL on social-emotional competencies and attitudes remained statistically significant, with effect sizes between 0.07 and 0.26 for social-emotional competencies and between 0.07 and 0.11 for attitudes (Durlak et al., 2011; Sklad et al., 2012). Findings by Taylor and colleagues (2017) also show that the long-term impact of SEL was similar for students from different racial/ethnic and economic backgrounds and were sometimes greater for children ages 5 to 10.

Findings from the most recent SEL studies of individual programmatic efforts align with the results reported in the meta-analyses. For example, a randomized controlled trial of the Speaking to the Potential, Ability, and Resilience Inside Every Kid classroom-based SEL program for middle school students found a positive and statistically significant impact of the intervention on social-emotional competencies such as communication, decision making, problem solving, emotional regulation, and resilience, with the effect sizes reported between 0.39 and 0.82 (Green et al., 2021). Other studies have demonstrated a positive effect of SEL on many social-emotional skills, with effects sometimes stronger for younger students (e.g., Carroll, 2020; Haslip, 2018; Low et al., 2019; McClelland et al., 2017; McCormick et al., 2019; Wallender et al., 2020).

Indirect Impact of SEL on Academic, Behavioral, and Mental Health Outcomes

Research on the impact of SEL points to the positive indirect effects on academic outcomes, behavior, and mental health (Sklad et al., 2012). These indirect effects are often

statistically significant but are smaller in magnitude than the direct effects on social-emotional competencies. Durlak et al. (2011) reported an effect size of 0.27 after the intervention and 0.32 at follow-up on achievement outcomes. Sklad et al. (2012) reported an effect size of 0.46 after the intervention and 0.26 at follow-up on achievement outcomes, and the corresponding effect sizes in Taylor and colleagues' (2017) meta-analysis were 0.22 and 0.33. In the Wiglesworth et al. (2016) analysis, the combined effect size across time periods was 0.53. Notably, these findings are based on a small subset of studies included in the meta-analyses—35 studies in the Durlak et al. (2011) meta-analysis and 15 or fewer studies in other meta-analyses.

A recent meta-analysis by Corcoran and colleagues (2018) exclusively focused on the relationship between SEL interventions and academic outcomes. Based on 40 experimental and quasi-experimental studies conducted with preK–12 students, school-based SEL interventions were shown to have a positive impact on reading, mathematics, and science achievement, with effect sizes of 0.25, 0.26, and 0.19, respectively. However, findings from a subset of 19 rigorous randomized studies were mixed, with the effects in reading achievement between -0.14 and 0.73. Likewise, several studies that experimentally examined the impact of an SEL intervention called Social Skills Improvement System Classwide Intervention Program on achievement in reading and mathematics found no discernable effect after the intervention and predominantly nonsignificant although positive results in later grades (DiPerna et al., 2015; DiPerna, 2018; Hart et al., 2020). The authors of these and other studies suggest mediators, such as implementation fidelity, could influence findings but generally recommend additional experimental research before confident conclusions can be made about the impact of SEL on achievement (Corcoran, 2018; Hart et al., 2020; Jones et al., 2021; Jones & Dolittle, 2017; Rimm-Kaufman et al., 2014).

Research findings about the impact of SEL on behavioral outcomes tend to be positive. Studies show that SEL increases desirable and decreases undesirable behaviors. Effect sizes reported in meta-analyses and other research show increases in desirable behaviors, such as getting along with others, cooperation, and problem solving, with effect sizes ranging from 0.13 to 0.39 after the intervention and from 0.12 to 0.17 at follow-up (Durlak et al., 2011; Sklad et al., 2012; Taylor et al., 2017; Wigelsworth et al., 2016). Undesirable behaviors, such as disruptive class behavior, aggression, and substance use, were reduced after SEL interventions, with effect sizes between 0.09 and 0.43 at post-assessment and between 0.14 and 0.20 at follow-up (Durlak et al., 2011; Murano et al., 2020; Sklad et al., 2012; Taylor et al., 2017; Wigelsworth et al., 2016). Likewise, the impact of SEL on mental health has been in the desired direction, with reported reductions in mental health problems, such as depression, anxiety, and stress, between 0.12 and 0.24 after the intervention and between 0.10 and 0.16 at follow-up (Durlak et al., 2011; Sklad et al., 2012; Taylor et al., 2017; Wigelsworth et al., 2016).

The Role of Teachers and Educational Environment in SEL

The important role that teachers play in students' academic success has been well documented. The role of teachers, however, extends beyond teaching academic content. The role of teachers also includes helping students develop interpersonal and intrapersonal skills that fall under the social-emotional umbrella (e.g., Coelho & Sousa, 2017; Farrington et al., 2019; Hamre & Pianta, 2010; Jones et al., 2021; Jones & Dolittle, 2017; Mason et al., 2017; Osher et al., 2020; Schonert-Reichl, 2017; Whalshaw & Anthony, 2008). Farrington et al., (2019), for example, found that the classroom environment and teachers contribute significantly to students' sense of belonging, self-regulation, and delay of gratification and motivation—skills and emotional states reflected in the CASEL social-emotional framework (CASEL, 2021b).

Research points to teacher–student relationships as a key prerequisite for supporting students' social-emotional development because through these relationships students learn and practice social-emotional skills, which in turn create favorable conditions for academic growth (Bryk & Schneider, 2003; Farrington et al., 2012; Farrington et al., 2019; Hagenauer et al., 2021; Jones et al., 2021; Osher et al., 2020; Poulou, 2017; Schonert-Reichl, 2017; Sebastian et al., 2017). Schools play an important role in establishing conditions that enable positive teacher–student relationships. For example, schools that emphasize emotional development alongside academic growth in a safe and nurturing environment are likely to see positive teacher–student relationships (e.g., Jones et al., 2021; Hagenauer et al., 2021; Hammond, 2016; Osher et al., 2016; Osher et al., 2020). Likewise, schools that are culturally responsive to the needs of their diverse student population, for example by providing cultural training to their staff, create favorable conditions for student–teacher relationships and students' social-emotional and academic growth (e.g., Osher et al., 2020; Spencer, 2017).

Given the importance of teacher–student relationships, it is not surprising that teachers are the "engine that drives social and emotional learning" (Schonert-Reichl, 2017, p.1). Teachers are the primary implementers of SEL programs: 55% of 213 SEL interventions synthesized by Durlak and colleagues (2011) were implemented exclusively by teachers, 55% of 77 SEL interventions synthesized by Sklad and colleagues (2012) also were implemented exclusively by teachers, and the percentage of interventions implemented by teachers in the Taylor et al. (2017) synthesis was 39%. Durlak and colleagues and Sklad and colleagues, who disaggregated findings by the type of implementer, found that interventions delivered by teachers had a high and significant impact on social-emotional skills (effect size of 0.62 in Durlak study and 0.71 in the Sklad study). It is important to note that the development of students' social-emotional competencies in a classroom does not rest with SEL interventions. Best teaching practices, for example effective classroom

management, recognize and emphasize the need for classroom environments that promote strong teacher–student relationships and social-emotional skills, which teachers develop by establishing classroom routines, rules of conduct with teachers and peers, behavioral norms, expectations for participation, work completion, and other strategies that teach students how to engage with others and regulate emotions (e.g., Evertson & Weinstein, 2006; Korpershoek et al., 2014).

The Role of NBCTs in SEL

Established in 1987, the National Board Certification is a voluntary advanced certification for educators (NBPTS, 2021c). Research points to NBCTs being more effective than non-NBCTs at improving student academic outcomes (e.g., Cantrell et al., 2008; Cavalluzzo, 2004; Cowan & Goldhaber, 2016; Goldhaber & Anthony, 2007; Harris & Sass, 2009; Manzeske et al., 2017) and to NBCTs being more effective mentors to other teachers than are non-NBCTs (Harris & Sass, 2007, 2009; Zhu et al., 2019). Research, however, has not established if NBCTs are more effective than non-NBCTs at developing students' social-emotional competencies.

We propose that NBCTs have the skills to facilitate social-emotional development in their classrooms more effectively than other teachers because National Board Certification requirements incorporate teaching practices that could improve students' social-emotional development. The hypothesized mapping of the skills that the certification candidates must demonstrate on social-emotional competencies is presented in Table 1. As shown in the table, we propose that the development of students' relationship skills, self-management, responsible decision making, and self-awareness are embedded within the requirements for the National Board Certification. If accurate, then NBCTs may be able to positively influence students' social-emotional development in the absence of SEL interventions or above and beyond the

interventions, which may be a relevant knowledge for states and districts investing or considering an investment in the National Board.

Table 1. Mapping of Knowledge and Skills NBCTs Must Demonstrate on Social-Emotional Competencies Captured in the CASEL Framework

Certification components	Examples of knowledge and skills teachers must demonstrate	Relevance to social-emotional competencies in CASEL framework
Component 2: Differentiation in instruction	Teachers show how they structure instruction, use resources, structure assignment to meet the needs of students with different abilities and from different backgrounds. Teachers show how they foster an equitable and fair learning environment in which children are appreciated, respected, and encouraged to participate, building their confidence and creating trust.	Self-management Relationship skills
Component 3: Teaching practice and learning environment	Teachers demonstrate how they create a supportive and student-centered learning environment based on trust and mutual respect, how they facilitate the inquiry process and equip students with skills that support assuming responsibility for their learning, working collaboratively, showing willingness to take risks, and developing self-confidence.	Self-management Relationship skills Responsible decision making
Component 4: Effective and reflective practitioner	Teachers show that they can use in-depth knowledge about students to plan effective and fair instruction. Teachers will show, for example, how they help students apply feedback from assessments to advance their learning, allowing them to monitor and reflect on their progress to support improvement.	Self-management Self-awareness Responsible decision making

Current Study

With this study, we examined the relationship between National Board Certification and students' social-emotional competencies to answer the following research question: *Are NBCTs more effective than non-NBCTs at developing social-emotional competencies of their students*? We further explored the effectiveness of NBCTs on social-emotional development of students based on race/ethnicity and ELL status, because prior research suggests that NBCT effects differ for students from different backgrounds (e.g., Gnedko-Berry et al., 2020). The primary outcomes

were for students in Grades 5 and 6 in the 2018–19 academic year, with some measurement occurring in the fall semester after approximately 2 months of students being taught by an NBCT and some measurement occurring in the spring semester after approximately 8 months of students being taught by an NBCT, as detailed in the Methods section of this paper.

The study's location was Spokane Public Schools in Washington. Spokane is the second largest school district in the state, serving nearly 30,000 K–12 students and employing approximately 2,000 classroom teachers. Fifty-seven percent of students come from low-income families, 26% are students of color, 15% are eligible to receive special education services, and 10% are classified as ELLs (Spokane Public Schools, 2021a, 2021b). Spokane teachers interested in the National Board Certification benefit from the state and district initiatives intended to support the certification candidates and reward teachers who become fully certified. For example, the state allows teachers to use the time spent toward the National Board Certification on fulfilling requirements for their Washington Teaching Certificate. The state also pays NBCTs an annual bonus of $5,705 (Washington Office of Superintendent of Public Instruction, 2021). At the district level, the Spokane Education Association supports National Board candidates by helping them prepare and submit components of the certification in cohorts with other teachers (Spokane Education Association, 2021).

Several of Spokane's characteristics made it a desirable location for the current study. The district employs enough NBCTs to conduct the study—approximately 20% (NBPTS, 2021a). The composition of the student population in Spokane resembles other mid-size districts, improving the generalizability of the study's findings, and Spokane collects social-emotional and school climate data from students that could be linked to teachers, which was necessary for addressing the study's research question.

Methods

Data

Data for this study was archival from Spokane Public Schools in Washington, from 2018–19 (outcomes) and 2017–18 (controls) school years for Grades 4–6. The data include results of a district social-emotional survey (administered in the fall 2017–18 and 2018–19), a climate survey (administered in the spring 2018–19), Smarter Balanced state assessment results, attendance, and student background characteristics. The data also include teachers' years of experience, NBCT status, and the time of National Board Certification.

Sample

The data from which the analytic sample was drawn included 4,763 students in Grades 5 or 6 in the 2018–19 school year in 34 Spokane Public Schools. We restricted our sample to Grades 5 and 6 because, according to information from the district, students in these grades have a homeroom teacher who teaches multiple subjects per grade, which allowed us to maximize the likelihood that students in the sample were exposed to a similar amount of instructional time by teachers who were NBCTs and non-NBCTs. We did not include fourth-grade students because the baseline year survey data for those students (third-grade survey in the 2017–18 school year) were unavailable.

We further restricted the sample in several ways. First, we limited the sample to 4,054 students who were linked with one school and one homeroom teacher (approximately 85% of the initial sample) from 34 schools. Then, we excluded students of teachers who were in the process of becoming National Board certified because this study focused on fully certified NBCTs who would have had to demonstrate the skills that, as hypothesized, would be associated with advancing students' social-emotional development. We also excluded students taught by non-NBCTs with less than 3 years of teaching experience because teachers with fewer than 3 years of

experience are not eligible for the National Board Certification. These steps led to a sample consisting of 3,614 students (approximately 76% of the initial sample) within 34 schools.

Lastly, we limited the sample to students with outcome and baseline data, resulting in the sample of 1,283 students (approximately 27% of the initial data set), as shown in Table 2. Of these students, 274 students were taught by 25 fully certified NBCTs across 33 schools, and 1,009 students were taught by 87 non-NBCTs across 33 schools. We used propensity score matching to identify an analytic sample of students taught by non-NBCTs who were similar to students taught by NBCTs.

Table 2. Number of Students, Teachers, and Schools for Eligible Pool and Matched Sample

		Eligible pool (before matching)	**Matched analytic sample**
School		33	33
Teacher	Fully certified NBCT	25	25
	NBCT candidate	2	Excluded
	Comparison	87	68
Student	Fully certified NBCT	274	274
	NBCT candidate	18	Excluded
	Comparison	1,009	274

Matching Procedure. To model student selection to NBCTs, we estimated a student's conditional probability of being assigned to NBCTs as a function of pretreatment student and school characteristics using a logistic regression model. The general form of the logistic regression model is as follows:

$$\text{logit}(P(\text{NBCT}_i)) = \beta_0 + B_1 X_i + B_2 Z_s$$

where $\boldsymbol{P}(\text{NBCT}_i)$ is the probability of student *can* in school *s* taught by an NBCT; $\boldsymbol{\beta}_0$ is the intercept; $\boldsymbol{X}$ is a vector of student-level pretreatment covariates; $\boldsymbol{Z}$ is a vector of school-level

pretreatment covariates; $\boldsymbol{B}_1$ is a set of coefficients that represents the association between each student-level pretreatment covariate and the logit of the propensity score; and $\boldsymbol{B}_2$ is a set of coefficients that represents the association between each school characteristic and the logit of the propensity score. All baseline covariates were measured in 2017–18 to ensure that the measurements were not influenced by the treatment (taught by NBCT) that started in 2018–19. For lists of variables that were used for estimating propensity score, see Table 3.

The estimated propensity scores were used to match students taught by NBCTs (treatment group) with students who were taught by non-NBCTs but had a similar probability of being assigned to NBCTs (comparison group) through a combination of exact matching and propensity score matching. We used exact matching on grade level[1] so that comparison students were selected only if they had the exact same grade level as the treatment students. We implemented 1:1 nearest-neighbor matching without replacement. The final analytic sample included 548 students (274 treatment and 274 control) and 93 teachers (25 NBCTs and 68 non-NBCTs), as shown in Table 2. The matching was carried out using the MatchIt package in R (Ho et al., 2007).

[1] To find the best matched samples with the most similar treatment and control groups, we tested several alternative matching models. We first tried more restrictive matching that forces matched pairs to be in the same school and grade level. We also employed matching on classes, not students, by including class-level student characteristics in the propensity score models. In that way, we matched on the same units as treatment assignment (having an NBCT), and the multilevel nature of the data remained intact. However, the results of these alternative models show poor balance statistics on several key variables and yielded a smaller sample size. This result was likely due to the smaller comparison pools within a school or at the classroom level. Given the balance statistics and sample size, we chose a match on students within grade levels as our final matching model.

Table 3. Variables Used for Matching

Treatment indicator [2018–19]
A student taught by an NBCT during 2018–19 = 1, (0 if a student taught by a non-NBCT during 2018–19)
Baseline covariates [2017–18]
Student characteristics
Self-management (SEL)
Learning strategies (SEL)
Growth (SEL)
Grit (SEL)
Self-efficacy (SEL)
Social awareness (SEL)
ELA state assessment (Smarter Balanced)
Mathematics state assessment (Smarter Balanced)
Student attendance rate, calculated as the number of days in attendance divided by the number of days enrolled
Female, coded 1 if a student is female (0 if male)
White, coded 1 if a student is White (0 if non-White)
Black, coded 1 if a student is Black (0 if non-Black)
Hispanic, coded 1 if a student is Hispanic (0 if non-Hispanic)
Asian, coded 1 if a student is Asian (0 if non-Asian)
Multiracial, coded 1 if a student is multiracial (0 if non-multiracial)
Economically disadvantaged student status, coded 1 if a student qualified for free or reduced-price lunch (0 if not)
Student learning disability status, coded 1 if a student is in a special education program (0 if not)
Limited English proficiency, coded 1 if a student is entitled to limited English proficiency resources (0 if not)
School characteristics
School previous year ELA performance
School previous year mathematics performance
Percentage of White students in school
Percentage of female students in school
Percentage of students who are economically disadvantaged in school
Percentage of students in special education in school
Percentage of ELLs in school
Percentage of NBCTs in school
Average years of teaching experience

Baseline Equivalence. The equivalence of the treatment and matched comparison groups of students was assessed by evaluating balance on key baseline measures (e.g., student's pretest score, race/ethnicity). Hedges' *g* was used to calculate the absolute effect size difference for continuous variables (e.g., test scores), and the Cox index was used to calculate the effect size difference for the binary variables (e.g., economically disadvantaged student status). We followed the What Works Clearinghouse (WWC) Standards recommendation that baseline difference between treatment and comparison groups be no greater than 0.25 *SD* for groups to be balanced (WWC, 2022).

Relative to the eligible comparison pool, treatment students include more multiracial students and fewer White students, more students who are economically disadvantaged (operationalized as eligible for free or reduced-priced lunch, [FRPL]), and more students in special education and students with lower state test scores. Furthermore, treatment students attend schools with lower prior year performance and with higher proportions of FRPL students, students in special education, and ELLs.

After the matching, the treatment and comparison groups in our sample were balanced on all pre-intervention background characteristics except for Pacific Islanders (standardized mean difference [SMD] = -0.56), which is not practically meaningful, given that this is a binary indicator with a small number of students ($N = 2$). See Table 4 for a complete summary of these results.

Table 4. Treatment, Non-Treatment, and Matched Comparison Group Characteristics

Baseline covariates	Matched students			All eligible comparison students	
	Treatment mean (N = 274)	Control mean (N = 274)	SMD	Control mean (N = 1,009)	SMD
Student characteristics: Pretest					
Self-management (SEL)	1.22	1.16	0.05	1.33	-0.09
Learning strategies (SEL)	1.45	1.48	-0.02	1.67	-0.12
Growth (SEL)	0.76	0.82	-0.05	0.66	0.08
Grit (SEL)	0.56	0.67	-0.09	0.70	-0.12
Self-efficacy (SEL)	0.59	0.5	0.06	0.83	-0.17
Social awareness (SEL)	0.92	0.93	-0.01	1.03	-0.1
Student characteristics: Control					
ELA state test	2489.92	2487.23	0.03	2511.84	-0.22
Mathematics state test	2489.9	2490.43	-0.01	2513.59	-0.25
Attendance rate	0.95	0.95	0.03	0.95	0.03
Female	0.50	0.47	0.06	0.53	-0.07
White	0.59	0.54	0.13	0.71	-0.31
Black	0.03	0.02	0.21	0.03	-0.01
Hispanic	0.13	0.15	-0.09	0.10	0.17
Multiracial	0.20	0.22	-0.04	0.12	0.4
Pacific Islander	0.01	0.02	-0.56	0.01	-0.35
FRPL	0.65	0.67	-0.06	0.53	0.3
Special education	0.13	0.15	-0.09	0.08	0.28
ELL	0.07	0.08	-0.09	0.06	0.17
School characteristics					
School previous year ELA performance	2488.65	2488.39	0.01	2512.19	-0.49
School previous year mathematics performance	2491.7	2491.8	0	2513.1	-0.45
Percentage of White students in school	0.63	0.62	0.07	0.70	-0.47
Percentage of female students in school	0.52	0.52	0	0.52	0.05
Percentage of FRPL students in school	0.65	0.67	-0.07	0.53	0.46
Percentage of students in a special education program	0.11	0.11	-0.01	0.09	0.31
Percentage of ELL students in school	0.08	0.08	-0.03	0.05	0.26
Percentage of NBCTs in school	0.20	0.19	0.05	0.15	0.31
Average years of teaching experience	12.48	12.67	-0.04	13.68	-0.22

Measures

Independent Variable

NBCT Status. The study's independent variable is whether the student was taught by an NBCT (coded 1 = taught by NBCT, and 0 = taught by non-NBCT).

Dependent Variables

Social-Emotional Learning Scores. We used 2017–18 and 2018–19 data from the Panorama Social-Emotional Learning Questionnaire[2] collected by Spokane Public Schools. The survey is administered approximately 2 months after the start of the school year in October–November (we address the implications and limitations of the data collection timing in the Discussion section). We created student-level construct scale scores using the Rasch Partial Credit (or Rating Scale) model in the WINSTEPS software by jointly scaling 2 years of data. In total, we had data for items comprising six social-emotional survey constructs; therefore, six scores were available as dependent variables from the social-emotional learning survey. A description of the constructs, as well as the validity and reliability information, are displayed in Table 5.

School Climate Scores. In addition to data from the social-emotional learning survey, we used 2018–19 data from the Panorama School Climate Survey[3] collected by Spokane Public Schools. The survey is administered approximately 8 months after the start of school year in April–May. We used only those constructs from the climate survey that fall under the social-emotional umbrella and relate to teacher–student interactions (e.g., student sense of belonging and strength of teacher–student relationships). We created student-level construct scale scores

[2] https://www.rand.org/education-and-labor/projects/assessments/tool/2014/panorama-social-emotional-learning-questionnaire-measures.html
[3] https://www.panoramaed.com/school-climate-survey

using the Rasch Partial Credit (or Rating Scale)[4] model in the WINSTEPS software. In total, we scaled item-level data from seven school climate survey constructs; therefore, seven scores were available as dependent variables. A description of these constructs and the validity and reliability information are displayed in Table 5.

Table 5. Survey Constructs and Their Validity and Reliability Information

Construct/ dependent variable	Description	Validity and reliability properties
Social-emotional competencies from the social-emotional learning questionnaire (measured ~2 months after the start of school year)		
1. Social awareness	Ability to disagree civilly with others of with different perspectives. Level of caring about others' feelings and achievements.	Rasch/person reliability: 0.75, Cronbach's alpha: 0.83
2. Self-efficacy	Confidence in the ability to do, communicate, and retain the information learned in class.	Rasch/person reliability: 0.74, Cronbach's alpha: 0.80
3. Grit	Ability to focus; ability to persevere in difficulty.	Rasch/person reliability: 0.59, Cronbach's alpha: 0.65
4. Growth	Ability to change attitudes and behaviors.	Rasch/person reliability: 0.72, Cronbach's alpha: 0.65
5. Self-management	A varied list of activities related to completing work activities such as coming to class prepared, avoiding procrastination, and being polite to others.	Rasch/person reliability: 0.79, Cronbach's alpha: 0.87.
6. Learning strategies	Ability to plan out work before beginning it and change direction on schoolwork if a strategy is not working.	Rasch/person reliability: 0.71, Cronbach's alpha: 0.80
Social-emotional competencies from the school climate survey (measured ~8 months after the start of school year)		
1. Belonging	Level of respect given by students and teachers at the school and overall self-reported sense of belonging.	Rasch/person reliability: 0.72, Cronbach's alpha: 0.76
2. Engagement	Intrapersonal measures of engagement inside of class and engagement with school material outside of class.	Rasch/person reliability: 0.77, Cronbach's alpha: 0.81

[4] Most Panorama constructs use different rating scales for each item within a construct; therefore, the partial credit model was used for those constructs. However, items in some constructs, for example self-management, all use the same rating scale; therefore, the rating scale model was used in those instances.

Construct/ dependent variable	Description	Validity and reliability properties
3. Rigorous expectations	Expectation level established by the teacher. Emotional supports for students when dealing with learning challenges.	Rasch/person reliability: 0.57, Cronbach's alpha: 0.72
4. Teacher–student relationships	Nurturing and caring atmosphere that the teacher creates.	Rasch/person reliability: 0.73, Cronbach's alpha: 0.80

Control Variables

Outcomes Pretest. The outcome analysis controlled for students' 2018–19 social-emotional competencies by including a composite score of the six 2017–18 social-emotional constructs (Cronbach's alpha = .85) collected through the social-emotional learning survey in the 2017–18 fall semester. We also used this same composite score as a control variable for the dependent measures taken from the climate survey because the climate survey was not administered in 2017–18. The correlation coefficients between the social-emotional composite measure and the climate survey outcomes range from 0.26 to 0.36. Although the correlations are lower than desired, the analysis used additional control variables to account for group differences at baseline.

Student Achievement. To control for academic performance in mathematics and English language arts, we used the prior year's (2017–18) Smarter Balanced standardized student test scores. The tests are a summative assessment of students in Grades 3–8. This assessment is administered annually in the spring semester.

Student Background Characteristics. We controlled for student, classroom, and school characteristics based on recommendations in education research and the relationship between variables in our sample. For example, if two variables were highly correlated, we included only one variable in our modeling to avoid multicollinearity. At the student level we controlled for

student grade; gender; minority status; special education; ELL; and economic disadvantage, operationalized as eligibility for FRPL.

Classroom and School Characteristics. We controlled for the following classroom- and school-level variables: class- and school-level prior year SEL outcomes; class- and school-level prior year mathematics and ELA test scores; class-level percentage of students who qualify for FRPL.

Analysis

With the outcome analysis, we examined the effect of NBCTs on students' social-emotional competencies approximately 2 months after the start of the school year (fall semester) and students' perceptions of climate that are related to social-emotional competencies after approximately 8 months after the start of the school year (spring semester) in 2018–19. Using the analytic sample (matched students within grade), we ran three-level regression models with students nested within classes and schools, controlling for school, classroom, and school characteristics. The general modeling approach was performed separately for the six social-emotional outcomes and seven climate outcomes. The estimating equation is:

$$Y_{ics} = \beta_0 + \beta_1(\text{NBCT})_{cs} + \beta_2(\text{Prior Year Outcomes})_{ics} + B_3X_{ics} + B_4Z_{cs} + B_5W_s + \mu_s + r_{cs} + e_{ics}$$

where Y_{ics} is the outcome measure for a student *i* in class *c* and school *s*. The variable NBCT is equal to 1 if a student was taught by a fully certified NBCT and equal to 0 otherwise. The coefficient of interest, β_1, represents the marginal effect of being taught by an NBCT. We controlled for 2017–18 school year outcomes (Prior Year Outcomes), which helps remove residual within-school bias associated with the propensity score and improves precision of estimation (Hong & Yu, 2008). The vectors *X, Z,* and *W* are composed of the student-,

classroom-, and school-level controls, respectively.[5] μ_s, r_{cs}, and e_{ics} are the random variations not explained by the model.

We also conducted a series of subgroup analyses to examine possible effect heterogeneity of the NBCT impacts on student social-emotional competency outcomes. Using the same model, we examined NBCT impacts on subgroups based on race (i.e., White, multiracial, and Hispanic)[6] and ELL status.

Results

We first present results for the main findings based on the full study sample, followed by results for student subgroups. We used standardized coefficients as effect sizes, which can be interpreted as the number of *SD*s that the outcome will change if taught by an NBCT.

Table 6 shows the results of being taught by an NBCT on social-emotional competencies measured approximately 2 months after the start of the school year. The results suggest that NBCTs positively impacted students' social-emotional competencies in one area. Compared to students taught by non-NBCTs, students taught by NBCTs reported significantly higher self-efficacy in the first semester of the school year (effect size = 0.21, $p = 0.008$). This statistically significant effect held after applying the Benjamini-Hochberg adjustment for multiple comparisons across the six social-emotional learning outcomes.

For the additional social-emotional competency areas measured soon after the start of the school year (i.e., students' self-management, learning strategies, growth, grit, and social

[5] Although the propensity score matching was the primary method that was used to control for differences between treatment and comparison students, covariates that exceeded .05 SMD between the two groups were included as additional controls in the respective outcome model (see Tables 3 and 4). We selected the key covariates based on the importance of the variable and the model fit statistics. We tried to make the model as simple as possible to avoid singularity issues. We dropped many classroom- and school-level variables that were not statistically significant and do not explain much variance.

[6] We did not include subgroups for Asian and Black students due to the small sample sizes, which were 24 and 12, respectively.

awareness), the estimated average effects are not statistically significant ($p < .05$). However, of the five competency areas, the result for self-management is worth noting. Although the result for self-management did not reach the conventional level of statistical significance of $p < .05$, the estimated effect size is positive and modest in magnitude (effect size = 0.10, $p = 0.137$).

Table 6. Estimates of the Effects of Being Taught by NBCTs on Social-Emotional Learning Outcomes (Measured ~2 Months After the Start of the School Year)

Self-management	Learning strategies	Growth	Grit	Self-efficacy	Social awareness
0.10	0.05	-0.08	0.07	0.21**	0.08
(0.07)	(0.07)	(0.09)	(0.08)	(0.08)	(0.08)

Note. Standard errors are presented in parentheses.

$N = 548$ (full sample)

**$p < .01$

Student-level covariates: prior year social-emotional learning measure, prior year state test on ELA and mathematics, female, minority, limited English proficiency status, special education status, FRPL status.

Class-level covariates: prior year social-emotional learning measure, prior year state test on ELA and mathematics, proportion of students who are economically disadvantaged.

School-level covariates: prior year social-emotional learning measure, prior year state test on ELA and mathematics.

Table 7 shows the effects of being taught by NBCTs on social-emotional competencies included in the school climate survey for the full sample. Results show no statistically significant effects of being taught by NBCTs approximately 8 months into the school year.

Table 7. Estimates of the Effects of Being Taught by NBCTs on Social-Emotional Learning Outcomes (Measured ~8 Months After the Start of the School Year)

Valuing of school	Teacher–student relationships	Safety	Rigorous expectations	Engagement	Climate	Belonging
0.00	-0.02	-0.11	0.08	-0.10	-0.08	-0.10
(0.09)	(0.12)	(0.10)	(0.09)	(0.10)	(0.10)	(0.10)

Note. Standard errors are presented in parentheses.

$N = 548$ (full sample)

Student-level covariates: prior year social-emotional learning measure, prior year state test on ELA and mathematics, female, minority, limited English proficiency status, special education status, FRPL status.

Class-level covariates: prior year social-emotional learning measure, prior year state test on ELA and mathematics, proportion of economically disadvantaged students.

School-level covariates: prior year social-emotional competency measure, prior year state test on ELA and mathematics.

Subgroup analyses were conducted to explore the differential effect of NBCTs for students based on English proficiency and racial/ethnic group. Table 8 shows the effects of being taught by NBCTs on social-emotional outcomes for students who are ELLs and students who are White, multiracial, or Hispanic (sample sizes for additional racial groups were too small for including in the study).

Subgroup analysis based on race/ethnicity revealed no statistically significant differences for those students taught by NBCTs relative to students taught by non-NBCTs. For student outcomes based on ELL status, there were two statistically significant findings. Non-ELLs taught by NBCTs reported greater self-efficacy (effect size = 0.23, $p = 0.004$) and social awareness (effect size = 0.16, $p = 0.033$) than did non-ELLs taught by non-NBCTs. ELLs taught by NBCTs reported lower social awareness than did ELLs taught by non-NBCTs (effect size = -1.20, $p = 0.007$).

Table 8. Estimates of the Effects of Being Taught by NBCTs on Social-Emotional Learning Outcomes, by ELL Status and Racial and Ethnic Subgroups (Measured ~2 Months After the Start of the School Year)

	Self-management	Learning strategies	Growth	Grit	Self-efficacy	Social awareness
ELLs	0.31	-0.20	-0.38	-0.45	-0.05	-1.20 **
(*N* = 43)	(0.33)	(0.28)	(0.30)	(0.40)	(0.25)	(0.38)
Non-ELLs	0.12	0.09	-0.04	0.08	0.23 **	0.16 *
(*N* = 505)	(0.07)	(0.08)	(0.09)	(0.08)	(0.08)	(0.08)
White	0.05	0.03	-0.17	-0.05	0.16	0.07
(*N* = 312)	(0.09)	(0.09)	(0.12)	(0.11)	(0.09)	(0.09)
Multiracial	0.13	0.01	0.00	0.24	0.23	0.20
(*N* = 115)	(0.17)	(0.19)	(0.21)	(0.16)	(0.17)	(0.20)

	Self-management	Learning strategies	Growth	Grit	Self-efficacy	Social awareness
Hispanic	0.15	0.12	-0.03	-0.09	-0.02	0.03
(*N* = 75)	(0.19)	(0.21)	(0.26)	(0.23)	(0.23)	(0.27)

Note. Standard errors are presented in parentheses.

*$p < .05$; **$p < .01$.

Student-level covariates: prior year social-emotional learning measure, prior year state test on ELA and mathematics, female, minority, limited English proficiency status, special education status, FRPL status.

Class-level covariates: prior year social-emotional learning measure, prior year state test on ELA and mathematics, proportion of economically disadvantaged students.

School-level covariates: prior year social-emotional competency measure, prior year state test on ELA and mathematics.

Table 9 shows the effects of being taught by NBCTs on social-emotional outcomes captured in the school climate survey by ELL status and racial/ethnic subgroups. Results indicate that there were no statistically significant differences when comparing outcomes for those taught by NBCTs relative to those taught by non-NBCTs.

Table 9. Estimates of the Effects of Being Taught by NBCTs on Social Emotional Learning Outcomes, by ELL and Race Subgroups (Measured ~8 Months After the Start of the School Year)

	Teacher–student relationships	Rigorous expectations	Engagement	Belonging
ELL	0.04	-0.13	0.09	0.35
(*N* = 43)	(0.33)	(0.30)	(0.55)	(0.54)
Non-ELL	-0.01	0.13	-0.05	-0.13
(*N* = 505)	(0.12)	(0.09)	(0.10)	(0.10)
White	0.02	0.05	-0.15	-0.02
(*N* = 312)	(0.13)	(0.12)	(0.12)	(0.12)
Multiracial	0.07	0.29	0.01	-0.19
(*N* = 115)	(0.21)	(0.19)	(0.21)	(0.20)
Hispanic	-0.08	0.01	0.32	0.18
(*N* = 75)	(0.26)	(0.23)	(0.26)	(0.28)

Note. Standard errors are presented in parentheses.

**$p < .01$.

Student-level covariates: prior year social-emotional learning measure, prior year state test on ELA and mathematics, female, minority, limited English proficiency status, special education status, FRPL status.

Class-level covariates: prior year social-emotional learning measure, prior year state test on ELA and mathematics, proportion of economically disadvantaged students.

School-level covariates: prior year social-emotional learning measure, prior year state test on ELA and mathematics.

Discussion

The current study is the first to rigorously examine the effect of NBCTs on students' social-emotional competencies. Using quasi-experimental design with matching, we examined the effect of NBCTs on social-emotional competencies of fifth and sixth graders in the 2018–19 academic year in Spokane, Washington. We examined 10 outcomes—six outcomes measured about 2 months into the school year (social awareness, self-efficacy, grit, growth, self-management, and learning strategies) and four outcomes measured about 8 months into the school year (belonging, engagement, rigorous expectations, and teacher–student relationships).

The results were not statistically significant for nine of 10 outcomes. However, students taught by NBCTs reported significantly higher self-efficacy than did students taught by non-NBCTs in the first semester of school year, with the effect size of 0.21 *SD*. This effect size suggests that an average student would be ranked at approximately the 58th percentile instead of the 50th percentile if a student was taught by an NBCT.[7] The result of 0.21 *SD* reflects findings from a recent meta-analysis by Taylor et al. (2017) that reported the effect size of 0.17 *SD* for social-emotional outcomes across 36 rigorous SEL interventions. Although the effect sizes in other meta-analyses were higher, for example 0.57 in Durlak et al. (2011), the analysis by Taylor et al. includes studies that are more recent and use a rigorous design, and most studies in the analysis by Taylor et al. use valid and reliable measures, which are more likely to produce credible findings (Lipsey et al., 2012).

The result for self-management was in a positive direction, with the effect size of 0.10 *SD* but did not reach the level of statistical significance. Nonetheless, we highlight this relationship because the effect size is notable in educational interventions (Kraft, 2020). Furthermore, the

[7] We used the WWC improvement index procedure to compute the percentile ranks (WWC, 2022).

concepts of self-management and self-efficacy are closely related—both concepts are used to capture similar competencies, such as ability to achieve goals, feel motivated, and control behavior (American Psychological Association, 2009; CASEL, 2021b). The effect size of 0.10 *SD* for self-management suggests that an average student would be ranked at approximately 54th percentile instead of 50th percentile if a student was taught by an NBCT.

One reason why we found a significant result for self-efficacy and a notable result for self-management but no significant results for the eight remaining outcomes could be the timing of surveys. Teachers may concentrate on self-efficacy and self-management early in the school year to set behavioral expectations and to help students build independence, self-reliance, and motivation that they will need for the rest of school year. Therefore, measuring these skills in the fall semester, which was the case in the current study, might have worked well for detecting differences between teachers. NBCTs also could be better prepared to facilitate self-efficacy and self-management. A connection to self-management, which is closely related to self-efficacy, appears in three components of the National Board Certification (see Table 1).

An additional consideration is the SEL programming and supports offered by the district. The district provides positive behavioral interventions and supports (PBIS; Center on PBIS, 2021), SEL curriculum, and culturally responsive staff training among other supports (Spokane Public Schools, 2021c). These supports could have balanced the impact of NBCTs and non-NBCTs, which would have contributed to nonsignificant results for most outcomes. Taking districts' SEL supports into consideration, the relationship between NBCTs and students' self-efficacy and self-management should be interpreted as above and beyond the existing SEL supports.

We examined the impact of NBCTs on student subgroups based on ELL status and race/ethnicity, including White, multiracial, and Hispanic students, and identified several statistically significant findings among the groups of ELLs and non-ELLs. ELLs taught by NBCTs reported lower social awareness than did ELLs taught by non-NBCTs, with the effect size of –1.20 *SD*. We refrain from drawing conclusions based on this result, because the sample size for this subgroup was only 43 students, and the standard errors were large, indicating that the sample did not represent the population well. The sample size for non-ELLs was 505 students, and results show that non-ELLs taught by NBCTs reported greater self-efficacy (effect size of 0.23 *SD*) and social awareness (effect size of 0.16 *SD*) than did non-ELLs taught by non-NBCTs. The findings, however, are challenging to interpret considering prior research, which found no relationship between the behavioral outcomes, including attendance and in- and out-of-school suspensions, ELL status, and teacher National Board status (Manzeske et al., 2017). The relationship between teacher National Board status, ELL status, and academic achievement is mixed, with a few positive estimates among the majority null findings (e.g., Cowan & Goldhaber, 2016; Manzeske et al., 2017). Additional research is needed to draw confident conclusions about the relationship between the National Board Certification and outcomes for ELLs.

It is important to consider the study's limitations when interpreting results. We did not examine classroom practices of NBCTs and non-NBCTs to identify what, if anything, NBCTs do differently compared to other teachers to support social-emotional development of their students. Although connections to social-emotional student development are present in the certification components, until tested, these connections remain hypothetical. Collection of classroom data was not feasible within the current study but would be a welcome direction for future research.

The timing of outcome data collection—some in the fall and some in the spring semester—is also a limitation, because it did not allow us to examine a full set of outcomes at one time period, ideally in the spring semester after students had one full academic year of being taught by NBCTs. Because the study is a quasi-experimental, the impact estimates are susceptible to selection bias, even with careful matching on baseline characteristics that we conducted. Finally, small sample sizes for student subgroups prevented us from making conclusions about the differential effects that NBCTs could have for different groups of students.

Despite the study's limitations, we conclude that the findings are encouraging, and we hope the findings will motivate additional research because the current study is the first to begin to explore the role of NBCTs in social-emotional student development. We also believe that the study's findings will be relevant knowledge for education agencies that invest in the National Board Certification. It may be useful for education leaders to know that NBCTs could have a positive impact on students' social-emotional development. Furthermore, because NBCTs are effective mentors (e.g., Zhu et al., 2019), districts and schools may choose to deploy them to support other teachers in creating classroom conditions favorable for social-emotional student development.

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