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Longitudinal Effects of Teacher Perceived School Organizational Support on Student Social-

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By

Maedeh Golshirazi

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Professor Frank C. Worrell

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Abstract
Longitudinal Effects of Teacher Perceived School Organizational Support on Student Social-Emotional Competencies
By
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Over the last decade, a growing body of literature documents that improving youths' social-emotional competencies can lead to better educational and developmental outcomes (Durlak et al., 2013; Taylor et al., 2017). Therefore, psychologists and educators have become increasingly interested in exploring the ways in which those behaviors and attitudes could be facilitated and taught at schools and other institutional contexts. To date, many studies have shown that successful implementation of social-emotional learning (SEL) programs depends on how school staff work together to offer effective SEL instruction and to foster a positive school climate, as well as themselves modeling social-emotional competencies (Jennings & Greenberg, 2009; Jones et al., 2013, 2018). The emphasis is that SEL efforts are most successful when they also occur within supportive contexts and build adult competencies (Jennings & Greenberg, 2009; Jones et al, 2018). However, to the best of my knowledge, no research has examined the direct impact of the workplace environment on student social-emotional competencies. In this study, I address this gap by examining whether the degree to which teachers' perceptions of the supportiveness of their own schools as workplace are associated with development of students' social-emotional competencies. In particular, I examined the direct impact of the teacher perceptions of school organizational support on student social-emotional competencies, including self-control skills, interpersonal skills, and executive functioning (i.e., attentional focusing, inhibitory control, cognitive flexibility). Additionally, I examined the moderating role of student and school sociodemographics on such relations. Participant were 18,170 students from 1,310 schools, in a nationally representative sample within the US.

The key finding is that teacher perception of school support (TPS) brought diverse benefits for student social-emotional competencies, but the impact varied considerably by student's grade, types of social-emotional domain, student race/ethnicity, family SES, and school poverty. Results of crossed random effect modeling suggested that TPS was positively associated with all three domains of social-emotional competencies. The impacts of TPS on student self-control and attentional focusing were stronger for later grades.

Notably, the positive relation of TPS to student social-emotional competencies was moderated by student race/ethnicity, family SES and school poverty. The positive association between TPS and all three domains of social-emotional competencies was stronger among White students than Hispanic students. The positive association between TPS and self-control skills was stronger among White students than Asian students. Additionally, compared to Black students, the positive association between TPS and student attentional focusing was stronger for White students. Furthermore, the positive prediction from TPS to student attentional focusing and interpersonal skills was stronger for students from a high SES background. Finally, the positive

association between TPS and student self-control, interpersonal and attentional focusing were stronger among students who attended schools with a lower concentration of poverty.

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Longitudinal Effects of Teacher Perceived Organizational Support on Student Social-Emotional Competencies

Traditional conceptions of the education process have typically focused on teaching factual material to students as well as supporting habits of mind for acquiring, analyzing, remembering, and applying such content. In the 1990s, this narrow focus was expanded to include the notion of supporting and enhancing students' social and emotional competencies. In subsequent decades, the concept of social-emotional learning gained currency through the efforts of teachers, researchers, and child advocates (Collaborative for Academic, Social, and Emotional Learning [CASEL], 2013, 2015; Jones & Bouffard, 2012).

In the model developed by CASEL, social-emotional learning (SEL) refers to "the process through which all young people and adults acquire and apply the knowledge, skills, and attitudes to develop healthy identities, manage emotions, achieve personal and collective goals, feel and show empathy for others, establish and maintain supportive relationships, and make responsible and caring decisions" (CASEL, 2020, p. 1). According to the CASEL model, five basic skills, also referred to as competencies, are acquired as part of the social-emotional learning process: self-awareness, self-management, social awareness, relationship skills, and responsible decision-making (CASEL, 2003).

Over the last decade, research has increasingly demonstrated the association of students' social-emotional competencies in school to their long-term adjustment such as positive social relationships, high school graduation and college attendance, mental health outcomes, and absence of arrests, clinical disorders, and substance abuse (Domitrovich et al., 2017; Durlak et al., 2011, 2015; Taylor et al., 2017). Therefore, psychologists and educators have become increasingly interested in exploring the ways in which those behaviors and attitudes could be facilitated and taught at schools and other institutional contexts. Although teaching these competencies was originally considered the province of early childhood education (Bierman, 1988; Denham & Burton, 2003), increasing focus on the lifelong development of these skills led to SEL study in older children and young adults (Durlak et al., 2015).

To date, most researchers interested in how children's social-emotional competencies are supported in schools have focused either on explicit instruction in social-emotional skills or on the use of certain teaching practices such as cooperative learning or project-based learning. Additionally, some research has examined how schoolwide strategies (e.g., special assemblies, restorative discipline) can be used to create a school climate in which students feel respected, supported, and engaged (CASEL, 2013, 2015; Domitrovich et al., 2017; Dusenbury et al., 2015; Thapa et al., 2013). These works suggest that social-emotional competencies can be influenced by the classroom and overall school context.

Given the importance of establishing a supportive classroom and schoolwide environment, it is crucial to understand what kinds of experiences and knowledge teachers need in order to best support children's social-emotional learning. To date, research has shown that successful SEL implementation depends on school staff working together to offer effective SEL instruction and to foster a positive school community, as well as their own modeling of social-emotional competencies for students (Jennings & Greenberg, 2009; Jones et al., 2013, 2018).

A particular challenge here is that teaching is one of the most stressful occupations in the United States (Gallup, 2014). It is generally known that teachers working in stressful conditions experience a diminished sense of well-being and job satisfaction; these psychological factors in turn affect job performance and ultimately affect student outcomes (Bolger & Nir, 2012; Celep et al., 2012; Greenberg et al., 2016; Johnson & Birkeland, 2003; Johnson et al., 2012). However, to

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the best of my knowledge, no research has examined the direct impact of the workplace environment on student social-emotional competencies. In this study, I examine whether the degree to which teachers' perceptions of the supportiveness of their own school as a workplace are associated with development of students' social-emotional competencies.

A second goal is to examine whether supportive workplace environments are especially effective in fostering social-emotional competencies among at-risk students, particularly students of color and those from low socioeconomic status (SES) backgrounds. Barriers that prevent many students of color and other marginalized groups from developing social-emotional competencies include poverty, exclusionary discipline practices and policies, lack of trauma-informed practices, implicit bias in school staff, and educator stress and burnout (Simmons et al., 2018). In addition, school-level poverty influences both students' and teachers' mental health and performance. Students in high-poverty urban schools often deal with issues related to trauma, community violence, child abuse, and poverty. Teachers working in such schools can experience stress, burnout, secondary traumatic stress, and compassion fatigue from supporting students in crisis (Abraham-Cook, 2012; Greenberg, 2016; VanBergeijk & Sarmiento, 2006), all of which can undermine their ability to support their students' academic and social-emotional competence (Greenberg, 2016).

Although there is no single solution to eliminating the barriers that pose obstacles to the development of social-emotional competencies among many students of color and other marginalized youth, research has suggested reducing educators' stress as one important strategy (Simmons et al., 2018). When the organizational climate of a school promotes supportive and cohesive personal relations, teachers are more able to cope with stress and create healthy and caring programs for students (Greenberg, 2016). In particular, research indicates some evidence of the benefits of school-level interventions aimed at promoting a participatory environment, open communication, and supervisor/peer support (Greenberg, 2016). However, few studies have examined the impact of teachers' perceptions of school organizational support on students' social-emotional competencies with respect to underserved students.

In summary, this study aims to address the following research questions:
1. To what extent are teachers' perceptions of school organizational support related to student social-emotional competencies, including self-control skills, interpersonal skills, and executive functioning (i.e., attentional focusing, inhibitory control, cognitive flexibility), adjusting for student and school sociodemographic characteristics? Does this relation remain constant, prospectively, in teachers of classrooms ranging from first to fifth grade?
2. Does teacher positive perception of school organizational support reduce the gap in the development of social-emotional competencies between marginalized students (i.e., students of color, students from low-SES family backgrounds) and their advantaged peers, adjusting for school-level sociodemographic characteristics?
3. Does teacher positive perception of school organizational support reduce the gap in the development of social-emotional competencies between students in high-poverty urban schools and those attending more affluent schools, adjusting for student-level sociodemographic characteristics?

In this section, I offer a brief outline of the literature on social-emotional competencies and their acquisition (SEL). Then, I describe the integrated conceptual framework that has informed the current research, with a focus on existing research on organizational support theory,

as well as the prosocial classroom model. I also review empirical evidence in support of this integrated framework.

SEL and Social-Emotional Competencies

There are a plethora of terms and conceptual frameworks used in the field of SEL to capture the broad and interrelated areas of social-emotional competencies and their acquisition. These frameworks are similar and overlapping in some ways but are not all the same. Despite this variation, most SEL frameworks refer to interconnected sets of intrapersonal and interpersonal social-emotional skills (Domitrovich et al., 2017), and some also include cognitive competencies and executive functioning (Jones & Bouffard, 2012). Intrapersonal skills are those that are needed for effective functioning as an individual (e.g., self-control, emotional regulation, and positive mindset), whereas interpersonal skills are those that are needed to interact successfully with others (e.g., social skills, perspective taking, social problem solving; Domitrovich et al., 2017). The framework that I find most appropriate for this study is the *organizing framework for SEL* proposed by Jones and Bouffard (2012), because it focuses on both development processes and the social contexts in which they arise. It also includes cognitive regulation in addition to emotional processes and interpersonal skills as key social-emotional competence domains.

Organizing Framework for SEL

The framework proposed by Jones and Bouffard (2012) is a developmental-contextual model that views development as taking place in a nested and interactive set of contexts (e.g., family, peer system, classroom, school, and cultural and political contexts; Bronfenbrenner & Morris, 1998). At the center of the framework are the core social-emotional competencies, which are grouped into three conceptual categories: emotional processes, social/interpersonal skills, and cognitive regulation. Emotional processes include emotional knowledge and expression, emotional and behavioral regulation, and empathy and perspective-taking. Social/interpersonal skills refer to understanding social cues, interpreting others' behaviors, navigating social situations, interacting positively with peers and adults, and other prosocial behavior. Cognitive regulation includes attention control, inhibition of inappropriate responses, efficient use of working memory, and cognitive flexibility or set shifting.

These three domains of social-emotional competencies are related to proximal and distal outcomes, including behavioral adjustment (e.g., taking others' perspectives and getting along well with other children), emotional health and well-being (e.g., lower levels of depression and social isolation), and academic achievement. Researchers have identified several pathways that explain the association between social-emotional competencies and academic outcomes, including work-related and interpersonal skills (Cooper & Farran, 1988; Jones & Bouffard, 2012; McClelland et al., 2000, 2006). Work-related skills, such as listening and following directions, participating cooperatively in groups, working independently, and engaging in mastery behaviors (e.g., the ability to plan, organize, and complete tasks) help students engage in school, which in turn enhances their academic outcomes (e.g., Cooper & Farran, 1988; Jones & Bouffard, 2012; McClelland et al., 2000, 2006; Yen et al., 2004). Interpersonal skills include aspects of self-regulation and social competence that are needed for developing compliance, cooperation, and positive relationships (Jones & Bouffard, 2012). Students who struggle to understand their emotions and those of others may not have adequate social skills, may have challenges with their interpersonal skills, may face more difficulty navigating the classroom environment, and may perceive the classroom setting more negatively (Raver et al., 2007). Therefore, they may frustrate peers and teachers and may receive less support from teachers and peers, which may in

turn lead to their liking school less and avoiding school more often (Berndt & Keefe, 1995; Jones & Bouffard, 2012; Ladd et al., 1999). In addition, students' work-related and interpersonal skills can affect teachers' classroom management efforts and their ability to provide learning opportunities for all students in the classroom (Jones & Bouffard, 2012; Raver et al., 2007).

Moreover, Jones and Bouffard (2012) have indicated that the links between the social-emotional competencies and students' outcomes are influenced by several environmental factors and systems, such as the school, community, family, and peer contexts. In this study, I focus primarily on the school context. This framework demonstrates that school culture (also referred to as school climate) as well as implementation of SEL are the two aspects of the school context that play a vital role in the development of students' social-emotional competencies.

According to the National School Climate Council (2007), school climate refers to patterns of school members' (e.g., students, teacher, and parents) experiences of school life and reflects norms, goals, values, interpersonal relationships, teaching and learning practices, and organizational structures. School climate shapes the quality of the interactions among administrators, teachers, and students, which in turn influences the focus and quality of SEL teaching and learning within the school (Jones & Bouffard, 2012). In fact, positive school culture sets schoolwide expectations for behaviors (e.g., expressing kindness toward others), builds caring relationships among students and between adults and students, provides school-level strategies that foster a sense of community, and establishes policies that increase the use of effective teaching practices by teachers. These regularities can create a positive school climate that fosters natural opportunities for students to connect with others, to learn and emulate behaviors they come to value, and to learn, practice, and refine social-emotional competencies (Catalano et al., 2004; Domitrovich et al., 2017; Jones & Bouffard, 2012).

Theoretical and Conceptual Framework

Although theories about SEL reference the importance of teachers in developing effective practices for helping students acquire social-emotional competences, they typically provide little guidance regarding the ways in which the school as a workplace affects teachers' motivation and ability to develop these practices. To guide the conceptualization of my proposed study, I have integrated two theoretical frameworks: organizational support theory (Eisenberger et al., 1986) and the prosocial classroom model (Jennings & Greenberg, 2009). In this section, I first explain the key points of each model. Then, I discuss the proposed integrated framework as a conceptual model that guides my proposed study.

Organizational Support Theory

According to organizational support theory, "employees develop global beliefs concerning the degree to which the organization values their contributions and cares about their well-being" (Eisenberger et al., 1986, p. 503). These beliefs represent the employees' perceived organizational support (POS). Organizational support theory specifies different processes underlying the relationship between POS and its consequences. First, POS helps to determine the organization's readiness to reward efforts made on its behalf (Rhoades & Eisenberger, 2002). Second, according to social exchange theory, employees who perceive organizational support feel obligated to reciprocate toward the organization. Felt obligation refers to the responsibility perceived by an employee to add value to the organization in return for the perception of support from the organization (Baran et al., 2012; Kurtessis et al., 2017; Rhoades & Eisenberger, 2002). Employees who perceive higher POS engage in additional effort and motivation, resulting in enhanced in-role and extra-role job performance that are helpful to the organization (Baran et al., 2012). Third, POS helps to fulfill employees' socio-emotional needs for approval, esteem,

affiliation, and emotional support, resulting in greater identification and commitment to the organization as well as greater psychological well-being among the employees (Baran et al., 2012, Fuller et al., 2003; Kurtessis et al., 2017, Rhoades & Eisenberger, 2002).

Baran and colleagues (2012) have argued that the socio-emotional need-fulfilling role of POS may be more important for enhancing employee well-being and buffering the potential negative effects of employee stressors, whereas the felt obligation resulting from POS may be more important for such outcomes as performance and citizenship behaviors that are beneficial to the organization. However, a recent meta-analysis study shows that POS leads employees to engage in organizational citizenship behavior because they feel a positive orientation toward the organization rather than because they feel obligated to reciprocate the organization's support. In other words, employees who perceive higher organizational support tend to go outside of their roles to help the organization because they *want to* more than because they feel they *ought to* (Kurtessis et al., 2017).

Additionally, a meta-analysis study identified coping strategies as an additional mechanism through which POS may affect employee wellbeing (Baran et al., 2012). POS can provide informational and instrumental support, which may increase the number of coping strategies available to employees (Baran et al., 2012). Informational support refers to the provision of necessary clarification or advice, whereas instrumental support involves the provision of necessary resources and assistance (Cohen & Wills, 1985). By providing information and instrumental support, POS may allow employees to cope more effectively with occupational stressors. This mechanism could explain findings that relations between stressors and negative outcomes are generally weaker among employees who have high POS (e.g., Byrne & Hochwarter, 2006; Jawahar et al., 2007).

Consequences of POS. Researchers have demonstrated the impact of POS on various organization and individual outcomes (Baran et al., 2012; Kurtessis et al., 2017; Rhoades and Eisenberger, 2002). For instance, Kurtessis and colleagues (2017) grouped outcomes of POS into three categories: positive orientation toward the organization (e.g., affective commitment and job involvement), subjective well-being (e.g., reduced occupational strain, job satisfaction, positive mood, and job-related affect), and behavioral outcomes (e.g., organizational citizenship behavior, and counterproductive work behavior). POS enhances employees' positive orientation toward the organization and work by eliciting increased felt obligation, trust, affective commitment, and expectation that effort on behalf of the organization will be rewarded. These favorable orientations toward the organization and the work lead to a more pleasant work experience and increase employees' interest in the work itself (Kurtessis et al., 2017).

POS also enhances employees' wellbeing, which involves mood, emotions, and evaluation of satisfaction (Diener et al., 2009). POS has been found to be negatively associated with job stress, burnout, and work-family conflict. Furthermore, POS increases job-related affect, such as positive mood and job satisfaction, job self-efficacy, and organization-based self-esteem (Baran et al., 2012; Kurtessis et al., 2017; Rhoades & Eisenberger, 2002). POS not only aids wellbeing directly but can also serve as a buffer between workplace stressors and employees' wellbeing. For example, Jawahar and colleagues (2007) found negative direct associations between POS and two aspects of burnout (emotional exhaustion and depersonalization). They also indicated that POS moderated the relation between role conflict and emotional exhaustion. That is, people with low POS experienced a stronger relation between role conflict and emotional exhaustion than those with high POS. Similarly, POS was found to have a buffering effect on the relation between workload and two well-being outcomes, affective distress and

blood pressure (Ilies et al., 2010). These studies suggest that POS may offer social-emotional support, which helps to buffer negative influences of the workplace on employee well-being.

Moreover, researchers have shown that POS leads to greater affective organizational commitment and provokes the norm of reciprocity (Baran et al., 2012). By meeting social-emotional needs, provoking felt obligation, POS increases effort in standard job activities, resulting in enhanced in-role job performance and extra-role performance, organizational citizenship behaviors, and reduced withdrawal behaviors (Kurtessis et al., 2017).

POS appears to be a construct that lends itself well to interdisciplinary research. POS has been studied intensively in a variety of organizational contexts over the past two decades, but there has been little research on its effects in the educational realm (for an exception, see Erdogan et al., 2004). Although POS represents workers' view of the organization as a mesolevel variable, it can connect higher-level variables such as organizational structure to individual variables such as teacher wellbeing. Therefore, POS may present a fruitful construct in educational studies targeting teacher wellbeing and student outcomes.

In the next section, I describe the prosocial classroom model, which demonstrates the processes by which teachers' wellbeing and social-emotional competence can influence student academic and SEL outcomes.

Prosocial Classroom Model

According to the prosocial classroom model (Jennings & Greenberg, 2009), teachers' social-emotional competence and wellbeing establish a cyclical process that influences teacher and student outcomes. Jennings and Greenberg propose that teachers' social-emotional competence and wellbeing have reciprocal relations with four important classroom-level factors, including teacher–student relationships, classroom management, SEL implementation, and classroom climate, all of which in turn affect students' social, emotional, and academic outcomes.

According to this model, teachers with stronger social-emotional skills have more positive relationships with students, engage in more effective classroom management, and implement SEL curricula more effectively. These three factors foster a positive and healthy classroom climate, which in turns contributes to positive student outcomes (i.e., academic and social-emotional outcomes)—ultimately feeding back into teachers' social and emotional competence and relationships with students. In contrast, when teacher social-emotional skills are low, all phases of the cycle are more negative, resulting in less effective practices and teacher burnout. Additionally, the model specifies the elements of the school climate (e.g., supportive working environment, collaboration among staff) that contribute to teachers' social-emotional competence and well-being.

Integrated Framework for Understanding Perceptions of Support and Student SEL

In Figure 1, I illustrate how this integrated framework can be used to understand the processes by which teachers' perceptions of school organizational support affect school, teacher, and student outcomes. The model includes six main parts: (a) teachers' perceived organizational support (POS); (b) the processes that explain the impact of POS on teacher and school outcomes (i.e., fulfilling the social-emotional need, coping strategies, felt obligation); (c) teacher wellbeing and social-emotional competence; (d) student outcomes (i.e., SEL and academic outcomes); (e) the mediators of teacher social-emotional competence to wellbeing and student outcomes (i.e., healthy teacher-student relationships, effective SEL program implementation, effective classroom management, and classroom climate); and (f) family, school and community context factors that moderate these relationships. In Figure 2, I depict the particular aspects of this

framework on which I focus in the present research. I focus on two areas: (a) the direct association between teachers' perceived organizational support and students' social-emotional outcomes, and (b) the impact of family and school sociodemographic characteristics on such relationships. I now turn to a review of the empirical evidence in support of the integrated framework presented in Figure 1.

How Do Schools Support Social-Emotional Competencies?

School-wide SEL focuses on the school community as the primary change agent and "aims to integrate SEL into daily interactions and practices at multiple setting levels in the school using collaborative efforts that include all staff, teachers, families, and children" (Oberle et al., 2016, p. 278). Creation and maintenance of an appropriate school climate is a core component of effective school-based SEL.

According to the National School Climate Council (2007), school climate consists of five dimensions, including (a) safety norms and practices; (b) teaching and learning practices, such as strategies promoting social, emotional, ethical and civic learning, support for academic learning, and support for professional relationships; (c) interpersonal relationships, including respect for diversity, connectedness/engagement among all members of school community, social support, and leadership effectiveness; (d) physical aspects of the institutional environment as well as resources and supplies; and (e) the attitudes and relationships among school staff members that support working and learning effectively together (Thapa et al., 2013; Wang & Degol, 2016).

Among these different dimensions of school climate, the quality of interpersonal relationships within the school is one of the most robust predictors of students' behavioral, psychological, and social outcomes. According to Jones and Bouffard, "relationships are the soil in which children's SEL skills grow" (2012, p. 9). In the school context, students' relationships with their teachers and peers help them to develop self-regulation (Eisenberg et al., 2010), which refers to the ability to manage thoughts, emotions, and behaviors (Karoly, 1993; Smith-Donald et al., 2007). Initially self-regulation develops in the contexts of relationships in which more mature individuals such as educators or peers scaffold student behaviors. Gradually as students learn appropriate social rules and self-management strategies, they are able to engage in self-regulation without outside scaffolding (Jones & Bouffard, 2012). Students attending schools in which their peers are kind, helpful, and accepting experience a more positive adjustment to school, which in turn predicts fewer psychosomatic symptoms and better physical health outcomes (Ravens-Sieberer et al., 2009). Furthermore, high-quality relationships with peers have been associated with reduced aggression, victimization, and behavioral problems (Elsaesser et al., 2013; Meyer-Adams & Conner 2008).

The impact of the school climate is not limited to the student outcomes. It also substantially influences teachers' work, particularly the way that they facilitate student social-emotional development. SEL efforts are most successful when they also occur within supportive contexts and build adult social-emotional competencies (Jennings & Greenberg, 2009; Jones et al., 2018). Next section, I discuss teacher social-emotional competencies and school organizational climate as two pivotal factors that facilitate teacher's effective teaching of SEL.

What Are the Conditions that Facilitate Teachers' Effective Teaching of SEL?

Teachers play a vital role in student social-emotional learning. Researchers have identified several factors that facilitate teachers' effective support of SEL, such as teachers' own social-emotional competencies and organizational school climate.

Teachers' Social-Emotional Competencies

Although SEL frameworks assert that it is critical for educators to have strong social-emotional competencies themselves in order to effectively facilitate and teach social-emotional competencies to students, relatively few studies have been conducted on this topic (Jennings & Greenberg, 2009). As noted earlier, the prosocial classroom theoretical model indicates that teachers' social-emotional competencies establish a cyclical process that, when positive, contribute to their own effectiveness in the classroom and result in better outcomes for students. When teachers lack social-emotional competencies, they experience challenges at their workplace that can result in burnout and reduced effectiveness, which ultimately impact students' social-emotional competencies and academic outcomes (Jennings & Greenberg, 2009).

For example, using a sample of 1,129 preschool teachers, Buettner and colleagues (2016) found that teachers who had better emotional regulation skills and more frequently used problem-focused coping strategies were more likely to support children's negative emotions by using expressive encouragement and positively focused reactions. Additionally, teachers with higher social-emotional competencies were better able to cope with stressful situations, more emotionally available, more sensitive to cues from children's negative emotions, and more apt to intervene when children present negative emotions. Conversely, research by Schussler and colleagues indicates that teachers who lack self-awareness are more likely to misinterpret the intentions of others, thereby perpetuating negative interaction cycles among educators and students (Schussler et al., 2010; Schussler et al., 2015). In other words, greater social awareness may result in improved emotional regulation among teachers, which may predict increased relational capacities and better teaching practices. When teachers are aware of and reflective about their typical responses to challenging behaviors, they are less likely to react to student behavior with anger and hostility, such as coercive cycles with students (Schussler et al., 2015).

Furthermore, managing and regulating their own emotions may help educators focus on student needs and maintain constructive engagement during emotionally challenging situations (Brackett et al., 2010). Therefore, instead of controlling students' negative behaviors through coercive measures, educators may move toward a more proactive classroom management approach through establishing warm and supportive relationships with their students and encouraging prosocial and cooperative behaviors (Jennings & Greenberg, 2009). In such environments, educators positively influence students' social-emotional skill development by modeling these skills, managing stress in order to respond to situations effectively, creating positive interactions with students, and building community (Carlock, 2011; Jennings & Greenberg, 2009; Jones & Bouffard, 2012; Maurer & Brackett, 2004; Roeser et al., 2012).

School Professional and Organizational Climate

Several studies have focused on the professional and organizational climate of the school as a major determinant of teachers' attitudes and practices. Particularly, scholars have highlighted that teachers' relationships with administrators, colleagues, and parents play a significant role in teacher well-being, satisfaction, and commitment to remaining in the teaching profession (Johnson & Birkeland, 2003). For example, educators who have positive relationships with their colleagues, students, and students' families have more access to social support from those individuals to help them cope with occupational stress and behavioral management situations (Spilt et al., 2011). Johnson and colleagues (2014) showed that when administrators collaborate with teachers, grant them autonomy, and create teacher leadership positions, teachers are more likely to feel successful and stay on the job. The level of support that educators receive also affects their commitment to the work team and to the profession in general (Celep et al., 2012).

Empirical studies have also shown the impact of school professional and organizational climate on teacher wellbeing and practices. For example, using a sample of 2,565 teachers affiliated with 153 elementary schools, Bolger and Nir (2012) found that POS affected teacher satisfaction indirectly through teacher empowerment. Moreover, a supportive environment can help teachers cope more effectively with job demands and provide classroom environments that foster the development of student academic and social-emotional outcomes. Johnson and colleagues (2012) found favorable working conditions predicted higher rates of academic growth, as measured by standardized tests.

Although the impacts of a supportive workplace environment on teachers' well-being, their practices, and student academic outcomes are well documented, less is known about the direct relation between the workplace environment and student SEL outcomes. In particular, the literature lacks substantial evidence indicating the impact of the school organizational support of its teachers as a means to promote their students' social-emotional competencies. I aim to address this gap by investigating the association between teacher perceptions of school organizational support and student social-emotional competencies, taking into consideration student and school sociodemographic characteristics.

Student and School Sociodemographic Characteristics and Social-Emotional Competencies
Socioeconomic Status (SES)

From an ecological perspective, children's academic outcomes, including those that are cognitive as well as social and emotional, are affected by their family life, the schools they attend, the neighborhoods in which they live, and the resources that are available to them (Bronfenbrenner, 1979). The empirical literature has thoroughly documented the impact of SES on youth mental health and academic achievement. For example, Bradley and Corwyn (2002) demonstrated that SES status at birth (household income and parent education/occupation), is a risk factor for later conduct problems. A few studies also highlight the relation between SES and social-emotional competencies. For instance, using a sample of 477 Tanzanian children, aged 4–13 years old, Jukes and colleagues (2021) found an association between parental socioeconomic status (SES), and parental education and students' social-emotional competencies.

SES may not only affect access to financial resources but may also shape their experiences, opportunities, and social networks (Karus et al., 2012). Students of color and those from low-SES backgrounds may encounter many risk factors at home and school that negatively predict social-emotional competencies. Furthermore, those students living in high-poverty settings are particularly likely to have experienced trauma, community violence, child abuse, and poverty (VanBergeijk & Sarmiento, 2006), with potential impacts on their ability to regulate emotions and establish healthy social relationships. In sum, the harsh realities of living in a low SES environment place children born and raised there at a higher risk of developing behavioral, social, academic, and mental health issues (Yoshikawa et al., 2012).

School Poverty

Over the past few decades, it has become clear that both individual and ecological factors influence the development of child well-being and psychopathology. For instance, schools located in high-poverty urban neighborhoods are likely to be overcrowded, understaffed, and lacking in educational resources (Darling-Hammond & Friedlaender, 2008; Oakes, 2004). Therefore, disadvantaged schools often struggle to establish a safe and supportive school climate due to the multiplicity of family- and community-related stressors placed on the school setting and staff (McCoy et al., 2013).

The combination of individual child and school disadvantage can present the classroom teacher with substantial challenges in establishing a safe classroom climate to support student academic and social-emotional development. For instance, Bierman and colleagues (2010) found that the effects of SEL intervention were moderated by the school environment, with effects stronger in less disadvantaged schools as measured by the percentage of students who qualified for free/reduced lunch. They also argued that it may have been much easier for teachers at less disadvantaged schools to implement the intervention with sustained and high fidelity. Thus, I examine whether the impact of teacher perceptions of school organizational support on student social-emotional competencies differs by school-level poverty as well as student-level SES.

Student Race/Ethnicity

A few studies have investigated how SEL outcomes vary across students from different racial and ethnic backgrounds. For example, Hough and colleagues (2017) found that Black students and Hispanic students report less social-emotional competence than White peers within the same schools. Examining four competencies (i.e., self-management, social awareness, growth mindset, and self-efficacy), they found that Black students reported particularly low levels of self-management and social awareness, whereas Hispanic students reported particularly low levels of growth mindset and self-efficacy. This finding reveals that different subgroups perform differently on the SEL constructs, which raises important questions about these disparities. Although the development of social-emotional skills begins in infancy and is influenced by family, community, and neighborhood contexts (e.g., poverty, trauma), which may vary across racial/ethnic groups (Berliner, 2009; Hough et al., 2017; Nucci, 2017), a vast literature shows that students' experiences within a particular school differ by race/ethnicity. Such experiences include acculturative stress, discrimination experiences, well-documented disparities in disciplinary practices, and different teacher expectations for success in racial minority students (Gregory & Fergus, 2017; Hough et al., 2017; Jagers et al., 2018; Tenenbaum & Ruck, 2007).

Acculturative stress has been defined as the sociocultural pressure experienced by an individual exposed to two conflicting cultures as he or she attempts to negotiate differences between their home (heritage) and host (e.g., US.) cultures (Berry, 1997; Berry et al., 2006; Chavez et al., 1997). Schools in the United States tend to prioritize the norms and practices rooted in white, middle-class American culture. Therefore, to succeed, low-income and immigrant students must become acculturated or at least familiar with these norms and practices (Jagers et al., 2018). The result can be acculturative stress. Such stress arises from multiple aspects of the acculturation process, such as learning new cultural rules and expectations, dealing with experiences of prejudice and discrimination, and managing the mismatch between home and host culture (Berry, 1997; Suárez-Orozco & Suárez-Orozco, 2001). Associations between (a) acculturation stress and (b) low self-esteem, risk for substance use; internalizing symptoms; and conduct problems (Gil et al., 1994, 2000; Hurwich-Reiss & Gudiño, 2016; Romero & Roberts, 2003; Sirin et al., 2013) are well documented.

Additionally, students of color may experience discrimination based on their racial or ethnic identity. Experiencing discrimination is associated with social-emotional health outcomes, such as substance use as well as decreased self-esteem and increased depressive symptoms over time (Fuller-Rowel et al., 2012; Greene et al., 2006; Niwa et al., 2014). Students' responses to discrimination and micro-aggressions may also meet with punitive responses by school staff (Jagers et al., 2018). Latinx/Hispanic, Native American, and Black youth are more likely than other students to be referred to school administrators for discipline problems and more likely to be punished by out-of-school suspension and expulsion (Finn & Servoss, 2014; Gregory &

Fergus, 2017; Wallace et al., 2008). Such different experiences could explain why Black students evaluate their schools' culture and climate differently than do their White peers. For example, in a huge sample spanning over 1000 schools, Black students reported a school culture and climate average score that was 0.14 standard deviations lower than peers in the same school, even adjusting for other student sociodemographic characteristics (Hough et al., 2017).

To address these challenges that racial/ethnic minority students experience within schools, many districts are undertaking multifaceted reforms, such as a multi-tiered system of support, restorative justice, and provide SEL opportunities (Gregory & Fergus, 2017). However, most SEL programs lack a consideration of how race and ethnicity factor into the acquisition of social-emotional competencies (Jagers et al., 2019). To address this gap, Jager and colleagues (2019) have introduced a new approach, called *transformative SEL*, which focuses on SEL in the service of equity and excellence — "aimed at redistributing power to promote social justice through increased engagement in school and civic life" (Jagers et al., 2021, p.13). This form of SEL emphasizes the development of identity, agency, belonging, curiosity, and collaborative problem solving, which form the core social-emotional competencies identified in the CASEL framework: self-awareness, self-management, social-awareness, relationship skills, responsible decision making (Jagers et al., 2019). For example, communal values and a positive ethnic-racial identity are included as key components of self-awareness. Supporting the development of these assets may buffer youth from the negative impacts of internalized, interpersonal, and institutional oppression and provide pathways for constructive and collective responses (Jagers et al., 2018).

In addition to addressing student SEL directly, these researchers also emphasize the importance of addressing the ways in which the school climate and school support for teachers affect teachers' social-emotional competencies (Jagers et al., 2018). However, to date, few studies have been conducted to examine the ways in which teacher's positive perception of workplace support enables them to better facilitate the development of social-emotional competencies among students from underrepresented groups.

The Current Study: Research Goals and Questions

In summary, it is clear that school climate can affect students' perceptions, their emotional connection to the school, and their social-emotional skills development (Taylor et al., 2017; Wang & Degol, 2016). Yet researchers have also shown that SEL efforts are most successful when they occur within supportive contexts that also build adult competencies (Jennings & Greenberg, 2009; Jones et al., 2018). Various studies have focused on organizational aspects of the workplace as major determinants of teachers' attitudes and practices. For example, positive work environments promote teachers' sense of self-efficacy, which contributes to increased satisfaction and commitment (Chan et al., 2008) and predicts higher rates of academic growth among students (Johnson et al., 2012). Still, less is known about the association between teachers' perceptions of the working environment in the school and student social-emotional competencies. I aim to address this gap by examining the following research questions:

1. To what extent are teachers' perceptions of school organizational support related to student social-emotional competencies, including self-control skills, interpersonal skills, and executive functioning (i.e., attentional focusing, inhibitory control, cognitive flexibility), adjusting for student and school sociodemographic characteristics? Does this relation remain constant, prospectively, in teachers of classrooms ranging from first to fifth grade?

2. Does teacher positive perception of school organizational support reduce the gap in the development of social-emotional competencies between marginalized students (i.e., students of color, students from low-SES family backgrounds) and their advantaged peers, adjusting for school-level sociodemographic characteristics?
3. Does teacher positive perception of school organizational support reduce the gap in the development of social-emotional competencies between students in high-poverty urban schools and those attending more affluent schools, adjusting for student-level sociodemographic characteristics?

Methods

Data Set

For this study, I used an existing dataset from the Early Childhood Longitudinal Study, Kindergarten Class of 2010-11(ECLS-K:2011) conducted by the National Center for Education Statistics (NCES). A detailed description of the ECLS-K sample design and data collection can be found on the ECLS-K website (http://nces.ed.gov/ecls). The ECLS-K data collection began in the fall of 2010 when participating children entered kindergarten and followed them through the 2015–16 school year when most were in fifth grade. Participating students were assessed with respect to multiple indicators on nine occasions: fall and spring of kindergarten, fall and spring of first grade, and spring of first, second, third, fourth, and fifth grade. For this study I used the five waves of spring data from first through fifth grade.

In conducting ECLS-K: 2011, NCES used a multi-stage sampling design to select a cohort of students that was nationally representative of students entering kindergarten in the US in the 2010-2011 school year. The ECLS-K sampling frame was split into three separate, but nested stages. First, NCES randomly selected approximately 1,700 primary sampling units. Second, within these primary sampling units, NCES randomly sampled approximately1,300 schools that contained a kindergarten, with public and private schools selected from separate sampling frames. Third, an average of about 23 children was then randomly sampled within each school. Once children for the sample were identified and recruited, data collection proceeded at various stages. The base year study recruited a cohort of 18,174 students that was nationally representative of students entering kindergarten in the 2010–2011 school year.

After the sample was selected, parent contact information for each child was obtained from the school. An NCES field supervisor used the information to locate a parent or guardian, conduct a parent/guardian interview by telephone, and gain parental consent for the child to be assessed. Trained assessors then conducted the child assessment at the school site. General and special education teachers who taught the sampled children were asked to complete questionnaires. All teacher data were linked to their students. The response rates for teacher questionnaires are 15,330 and 14,865 for teacher-level and student-level, respectively. The same procedure was followed in each round of data collection.

Participants

Participants were 51% male (n= 9,288) and 49% female (n= 8,847). The majority of participants were non-Hispanic White (47%, $n = 32,474$), with the other participants coming from a variety of racial/ethnic backgrounds: Black (11%, $n = 7,840$), Hispanic (27%, $n = 18,794$), Asian (9%, $n = 6,141$), and Other (5%, $n = 3,923$). Twenty one percent of participants were below the poverty threshold, 22% at or above the poverty threshold but below 200 percent of the poverty threshold, and 57% at or above 200 percent of the poverty threshold. Thirteen percent of parents had less than high school degree, 27% were high school graduates, 25% had some college but no degree, 23% had bachelor's degree, and 12% had master's or higher degree. Among participants who reported the highest education degree of the second parent, 11% of parent had less than high school degree, 25% were high school graduates, 15% had some college but no degree, 16% had bachelor's degree, and 11% had master's or higher degree. Family SES was calculated based on parents' educational level, occupation prestige, and household income and ranged from -2.40 to 2.37 ($M = -.08$ and $SD = .80$).

The schools selected for this dataset varied considerably in terms of the household income and race/ethnicity of the students. In particular, 26% of participants attended schools in which fewer than 25% of the students were eligible to receive free or reduced-price lunch

(FRPL). Twenty-two percent attended schools in which 25 to 49% of the students were eligible to receive FRPL. Similarly, 22% attended schools in which 50 to 74% of the students were eligible to receive FRPL. Thirty percent attended schools in which more than 75% of students were eligible to receive FRPL. Regarding school diversity, 33% of participants attended schools in which less than 25% the population was non-White, 20% attended schools in which 25 to less than 50% of the population was non-White, 16% attended schools in which 50 to less than 75% of the population was non-White, and 31% attended schools in which 75 to 100% of the population was non-White.

Measures

Time

Time was specified as the child's grade from first to fifth grade. First grade was coded as 1 and other grade levels (i.e., second through fifth grades) were coded as the corresponding number. As mentioned earlier, this study used the spring assessment of each grade.

Teacher Perceived Organizational Support

Teachers were asked four questions to assess their perception of the school as a supportive environment. They indicated the extent to which they agree or disagree with each of the following statements about their school: (a) parents are supportive of school staff, (b) there is a great deal of cooperative effort among the staff members, (c) there is a consensus among administrators and teachers on goals and expectations, and (d) the school administration's behavior toward the staff is supportive and encouraging. A five-point Likert scale was used, ranging from 1 (*strongly disagree*) to 5 (*strongly agree*). A composite score for teacher perceived organizational support was created by summing the raw scores of all four relevant items and mean centering the score. Higher scores represent greater levels of perceived organizational support. Analyses indicated acceptable inter-item reliability. More information about inter-item reliability for each grade level is forthcoming in Results.

Social-Emotional Competencies

Four indicators of social-emotional competence were obtained: (a) self-control-- teacher report, (b) interpersonal competence -- teacher report, and (c) executive functioning -- teacher report, and (d) executive functioning -- cognitive assessment.

Self-Control and Interpersonal Skills. Measures of student self-control and interpersonal skills were obtained from teacher ratings on nine items adapted from the Social Skills Rating System (Gresham & Elliott, 1990). For each item, the teacher indicated the frequency of occurrence during the school year on a 4-point Likert -type scale from 1 (*never*) to 4 (*very often*). Aspects of children's social-emotional skills are captured in two of four social skills scales: self-control and interpersonal skills. These scales were created by NCES. According to the ECLS-K:2011 manual (Tourangeau et al., 2019), the measure includes some items taken from the Social Skills Rating System, some items that are modifications of original Social Skills Rating Systems items, and some items that measure the same kinds of skills included in the Social Skills Rating System but use wording developed specifically for the ECLS studies. The component items were not identified by NCES, due to copyright restrictions. Four items were averaged to create a composite reflecting self-control and five items were used to create a composite reflecting interpersonal skill. Only the composite scores are available in the dataset. Higher scores indicate that the child exhibited the behavior represented by the scale more often. Cronbach's alpha for these two measures was high, ranging between .78 and .92 across all waves (Tourangeau et al., 2019).

Executive Function.

Cognitive Assessment of Cognitive Flexibility. Children's cognitive flexibility was assessed by the Dimensional Change Card Sort (DCCS; Zelazo, 2006). The DCCS is a well-constructed measure of cognitive flexibility (Zelazo et al., 2013). In the physical version of the DCCS (Zelazo, 2006), administered from kindergarten to first grade, children were asked to individually sort 22 picture cards following three rules in order: color, shape, and border. Children had to sort four of six cards correctly by shape to proceed to the sorting by border task. All cards with black borders were to be sorted by color, otherwise by shape. Beginning in the fall second-grade round, children were administered a new, age-appropriate, computerized version of the DCCS in which the "cards" were presented on a computer screen, and children sorted them into "piles" on the computer screen using keys on the keyboard to indicate where to place each card. The computerized task was developed as part of the National Institutes of Health Toolbox for the Assessment of Neurological and Behavioral Function (NIH Toolbox) and is considered appropriate for ages 3–85 (Zelazo et al., 2013). According to User's Manual for the ECLS-K:2011 (Tourangeau et al., 2019), the overall computed score on the computerized DCCS is equal to the child's accuracy score if the child's accuracy rate is less than or equal to 80 percent. If the child's accuracy rate is greater than 80 percent, the child's overall computed score is equal to the child's accuracy score plus the child's reaction time score, which is derived from the child's reaction time on correct non-dominant trials. In this study, I used the computed score on the computerized DCCS across four waves (second through fifth grades) as a measure of cognitive assessment of cognitive flexibility.

Cognitive Assessment of Inhibitory Control. The NIH Toolbox Flanker Inhibitory Control and Attention Task (Zelazo et al., 2013) were used to measure inhibitory control in the context of selective visual attention. This measure was administered in fourth and fifth grade. In the Flanker task, children are asked to focus attention on a central stimulus while ignoring or inhibiting attention to stimuli presented on either side of the central stimulus. The stimulus used for children eight years and older is a series of five arrows, pointing either left of right. The arrows that "flank" the central arrow, which are referred to as "Flankers," either point in the same direction as the central arrow (congruent) or in the opposite direction as the central arrow (incongruent). The flanker arrows act as distractors, taking attention away from the central arrow that is supposed to be the focus of the child's attention. Children are presented with 20 arrow trials and are asked to press a button on the computer to indicate the direction the central stimulus (arrow) is pointing. Like the DCCS, the score based on the Flanker is derived from a formula that takes into consideration both accuracy and reaction time (Zelazo et al., 2013). The overall Flanker score ranges from 0 to 10, with weight given to accuracy (0 to 5 units) and reaction time (0 to 5 units) in the computation of scores. Accuracy is considered first. If the child's accuracy rate is less than or equal to 80 percent, the child's overall computer score is based entirely on accuracy. If the child's accuracy rate is more than 80 percent, the child's overall computed score is based on a combination of accuracy and reaction time.

Teacher-Reported Attentional Focusing and Inhibitory Control. In kindergarten and first grade, students' inhibitory control and attentional focusing were rated by teachers using 12 items selected by NCES from the short form of Children's Behavior Questionnaire (CBQ; Putnam & Rothbart, 2006). Six items were selected to reflect attentional focusing, and six items to reflect inhibitory control (Tourangeau, et al., 2015). Teachers in the ECLS-K:2011 study indicated how true each descriptor was of the target student, using a 7-point scale ranging from 1 (*extremely untrue*) to 7 (*extremely true*). Scale items are available in Appendix A.

To assess attentional focusing and inhibitory control in the second through fifth grade, NCES selected a subset of items from the CBQ and the Temperament in Middle Childhood Questionnaire (TMCQ; Simonds & Rothbart, 2004). Specifically, the dataset includes a measure of attentional focusing comprised of seven items from the TMCQ Attentional Focusing subscale. The dataset also includes a measure of inhibitory control comprised of six items from the TMCQ and one item from the CBQ (See Appendix B). Teachers used a 5-point scale ranging from 1 *(almost always untrue)* to 5 *(almost always true)* to assess student attentional focusing and inhibitory control skills. There were a *not applicable* options in both measures that the teacher could select if the statement or situation did not apply to the child. Because the CBQ and TMCQ were initially designed as a parent-report measures, the item wording for some items from the CBQ Inhibitory Control subscale, TMCQ Attentional Focusing subscale, and TMCQ Inhibitory Control subscale were modified to make the items more appropriate for a school setting.

I adjusted the range of the items derived from the CBQ so that all constituent items the attentional focusing and intentional control scales ranged from 1 to 5. For each scale, the student's score represents the mean rating on the items included in the scale. A score was computed when the respondent provided a rating on at least four of the items that made up the scale. Higher scale scores on the inhibitory control scale indicate that the child exhibited more behaviors that demonstrate the ability to hold back or suppress a behavior as necessary for a particular situation. Higher scale scores on the attentional focusing scale indicate that the child exhibited more behaviors that demonstrate the ability to focus attention on cues in the environment that are relevant to the task. Internal consistency was high for both measures across waves, with Cronbach's alpha ranging between .85 and .87 for all scales (Tourangeau et al., 2019).

Race/Ethnicity

Information on the child's race/ethnicity was originally collected from parents in the fall kindergarten parent interview, and then collected or confirmed by parents in subsequent rounds of interviews. Dichotomous variables for a child's race/ethnicity were created for the following categories: (a) Black (yes/no), (b) Hispanic (yes/no), (c) Asian/Pacific Islander (yes/no), and (d) Other multi-racial and American Indian vs. all other responses. White is the reference category.

Socioeconomic Status

SES was computed at the household level using data collected from parent interviews. The SES variable reflects the socioeconomic status of the household at the time of data collection for the kindergarten, first and fifth grades. The components used to create the SES variable are as follows: 1) both parent/guardian(s) education, 2) both parent/guardian(s) occupational prestige score, and 3) household income. Scores were summed to create a continuous variable. Parents' occupational prestige was coded based on information collected through questions in the parent interview about the name of the parent's employer, the type of business or industry in which the parent worked, the parent's job title, and the most important activities or duties the parent did for the job. The scores were assigned into 22 occupational codes based on the values in using the *Manual for Coding Industries and Occupations* (U.S. Department of Education, National Center for Education Statistics 1999). Education values were based on parents' report of their highest educational degree. Missing values were imputed if such information was not collected in the parent interview. The data for each component were normalized to have a mean of zero and standard deviation of one. SES was calculated as the average of these normalized components.

Child's Gender

Information on the child's gender was originally collected from parents in the fall kindergarten parent interview, and then collected or confirmed by parents in subsequent rounds of interviews. Questions to collect information on the child's gender were only asked in fall 2011, spring 2012, fall 2012, or spring 2013 interviews if data from the parent interview about the child's gender were missing due to the unit or item nonresponse. The variable name for child's gender is "male," with responses coded as 1 if the child's gender was male and 0 for female.

School Poverty

The variable school poverty was based on percentage of students eligible for free/reduced lunch. This variable was derived from the school administrator questionnaire and missing data were imputed. Originally, this variable was coded into four categories: *0% to less than 25%* was coded as 1, *25% to less than 50%* was coded as 2, *50% to less than 75%* was coded as 3, and *75% to 100%* was coded as 4. In this study, this variable was treated as a continuous variable.

School Diversity

The indicator of school diversity was obtained from the school administrator questionnaire. This variable indicates the percentage of the student population that was not White in each school. The composite was calculated by summing the percentages of students in each school in all racial/ethnic categories except White (not Hispanic). Schools with fewer than 24% non-White students were coded as 1, 25–50% non-White students were coded as 2, 50–74% non-White students were coded as 3, and 75–100% non-White students coded as 4. In this study, I treated this variable as continuous.

Statistical Data Analysis

The central interest in the current study lies in the growth in social-emotional competencies of students and the influences of teacher perceived organizational support on growth over time. Given that some students may move to different schools across various timelines, I used crossed random effect modeling to measure *changes in skills* while accounting for school membership changes (Rasbash & Goldstein, 1994). Crossed random effects modeling is nonhierarchical modeling where units are cross-classified by two or more factors (e.g., measurements classified by student and school), with each unit potentially belonging to any combination of categories of the different factors. A three-level crossed random effects model provides a comprehensive framework (a) for examining the stability and change in individual SEL skills, (b) for investigating how teacher perceived organizational support and children's background influence the shape of the student developmental curves, and (c) further for exploring how aspects of school organizational context may have differential effects on the students' development within it.

Because the ECLS-K:11 data have repeated measurement occasions (i) for students (clusters j) who are clustered in schools (super-clusters k), I used a crossed random effect model which also account for students who switch schools. Analyses were estimated with Level 1 as occasions (i.e., within-individual effects), Level 2 as students (i.e., between-student and within-school effects), and Level 3 as schools (i.e., between-school effects). Crossed random effects models also partition the outcome variance into between- and within- school and within-student portions, allowing for more accurate standard error estimates (Rabe-Hesketh & Skrondal, 2008). Crossed random effects models were fitted by maximum likelihood using Stata's xtmixed command. Likelihood ratio tests were used to compare nested models. Additionally, in this study I did not add the weights in the analysis as the demographic variables were included as

covariates. According to Snijders and Bosker (2011), there is no need to use survey weights if the covariates include the design variables that determine the weight.

  I fitted a series of models investigating the role of teacher perceived organizational support in promoting children's social-emotional competencies. For easier interpretation of coefficients, I multiplied the response variables by 100. For Research Question 1, I began with Model 1 by estimating unconditional growth models, assessing in the intercepts and slopes of the trajectories for the outcome variables, without any predictors. Model 2 expands on the unconditional growth model by investigating the effects of teacher perceived organizational support on social-emotional competencies. Model 3 allows evaluation of these associations, adjusting for effects of family and school-level factors. I added the interaction between grade and teacher perceived organizational support in Model 4-1, which allows evaluation of these associations' growth over time, adjusting for effects of family and school-level factors.

Model 1

$$SEC_{ijk} = \beta_0 + \beta_1 grade_{ijk} + {\zeta_{0jk}}^{(2)} + {\zeta_{0k}}^{(3)} + \epsilon_{ijk}$$

Model 2

$$SEC_{ijk} = \beta_0 + \beta_1 grade_{ijk} + \beta_2 TPS_{ijk} + {\zeta_{0jk}}^{(2)} + {\zeta_{0k}}^{(3)} + \epsilon_{ijk}$$

Model 3

$$SEC_{ijk} = \beta_0 + \beta_1 grade_{ijk} + \beta_2 TPS_{ijk} + + \beta_3 SES_{ijk} + \beta_4 childrace_{ijk} + \beta_5 Schoolpoverty_{ijk}$$
$$+ \beta_6 Schooldiversity_{ijk+} {\zeta_{0j}}^{(2)} + {\zeta_{0k}}^{(3)} + \epsilon_{ijk}$$

Model 4-1

$$SEC_{ijk} = \beta_0 + \beta_1 grade_{ijk} + \beta_2 TPS_{ijk} + \beta_3 TPS_{ijk} grade_{ijk} + \beta_4 SES_{ijk} + \beta_5 childrace_{ijk}$$
$$+ \beta_6 Schoolpoverty_{ijk} + \beta_7 Schooldiversity_{ijk+} {\zeta_{0j}}^{(2)} + {\zeta_{0k}}^{(3)} + \epsilon_{ijk}$$

  To answer Research Question 2, I added the interaction between SES and teacher perceived organizational support in Model 4-2. Additionally, I examined the moderating role of race/ethnicity by adding the interaction between teacher perceived organizational support and different race/ethnicity categories into the model 4-3. To answer Research Question 3, I added the interaction between school poverty and teacher perceived school organizational support in Model 4-4.

  The following assumptions were made about the models.

$${\zeta_k}^{(3)} \sim N\left(0, \psi^{(3)}\right)$$
$${\zeta_{jk}}^{(2)} | {\zeta_k}^{(3)} \sim N\left(0, \psi^{(2)}\right)$$
$$\epsilon_{ijk} | {\zeta_j}^{(3)}, {\zeta_{jk}}^{(2)} \sim N(0, \theta)$$

Results

Preliminary Analyses

NCES took major steps to minimize attrition and preserve the representativeness of the sample over time as described in ECLS-K:2011 methodological reports (Tourangeau et al., 2011). Despite these efforts, some data were missing in the ECLS-K:2011 dataset at Level 1 (panel waves within-child), Level 2 (children), and Level 3 (schools). Rates of missing data were generally less than 3% for the teachers' report of student social-emotional competencies and the school sociodemographic characteristics. However, for student demographic factors, 33% of the SES data were missing, as this information was reported only in Grade 1 and Grade 5.

Several strategies were used to make use of all legitimate, available information without imputing values or excluding cases. First, as discarding data on students who were not observed at all panel waves can result in biased parameter estimates, I utilized full-information maximum likelihood estimation, which is efficient for incomplete data. Rabe-Hesketh and Skrondal (2008) recommend that any child contributing one or more waves of outcome scores can be included in the analyses. Given that students did not have to be assessed at all data points to be included in the analysis and some students switched schools between first and fifth grades, the cross-classified modeling used in this analysis makes efficient use of unbalanced data.

Second, by specifying the student- and school-level sociodemographic variables as time invariant and fixing these to be the average of the available values across the five waves of data collection, any student who had survey data from one or more waves was able to have an empirically-based value for these variables. Following this decision, only 1% of students lacked data on a school-level demographic variable, and 11% of students lacked data on a family SES variable. Preliminary analyses indicated that students' family SES was highly correlated across Wave 1 and Wave 5 (the only two waves that collected family SES; $r = .80$). Thus, for the interest of model parsimony and avoidance of missing cases, a single, time-invariant composite for family SES was created. In addition, preliminary analyses indicated that school poverty was highly related across the five measurement occasions (pairwise r ranging from .80 to .92). In addition, preliminary analyses indicated that school diversity was highly related across the five measurement occasions (pairwise r ranging from .91 to .98). As with child SES, a single time-invariant composite was created for school concentration of poverty and for diversity.

Confirmatory Factor Analysis on Teacher Perceived Support (TPS)

Confirmatory factor analysis was performed to test a one-factor model for the teacher perceived support (TPS) questions at each wave, determining whether the TPS items in each wave were sufficiently interrelated to combine in a composite score. Criteria used to assess goodness of fit included the comparative fit index (CFI), Tucker-Lewis index (TLI), the root mean square error approximation (RMSEA), and the standardized root-mean-square residual (SRMR). Results from CFA analyses are presented in Table 1. The results confirmed that the one-factor model yielded an acceptable fit. For each grade, the CFI and TLI exceeded the accepted cut-off of .90, the SRMR was below the maximum acceptable value of .08, and the RMSEA was 0.1 or less (except for first and second grade which was .16 and 1.13, respectively; Kline, 2005; MacCallum et al., 1996; Marsh et al., 2004). Previous literature suggests that the RMSEA will be artificially high for models with small degrees of freedom (Kenny, 2014; Kenny et al., 2015), which is the case for this study. Additionally, internal consistency was also calculated for the composite TPS measure. Analyses indicated acceptable inter-item reliability for each grade level, with Cronbach's alpha ranging between .71 and .78 across all waves.

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Descriptive Statistics

Descriptive statistics for the student social-emotional competencies measures and teacher' report of perceived organizational support can be found in Table 2. Teacher reports of students' self-control skills indicated a steady improvement over the elementary years. The interpersonal skills scores displayed slight changes across study waves, but not a growth pattern. In terms of executive functioning, the results of the cognitive test showed that both cognitive flexibility and inhibitory control skills continued to improve over the elementary years. However, as emphasized in the Methods section, cognitive assessments of executive functioning skills were not conducted across all waves. The results of the cognitive flexibility assessment were reported for Grade 2 through Grade 5, and the inhibitory control outcomes were reported only for two waves (Grades 4 and 5). The teachers also reported the students' executive function skills (i.e., attentional focusing and inhibitory controls) across all waves, and the scores displayed slight changes across study waves, but not a growth pattern. Teachers' reports of perceived organizational support displayed slight changes across study waves, but not a growth pattern. The average raw scores and variability on the social-emotional competencies variables by race/ethnicity indicated in Table 3.

Table 4 represents descriptive statistics on how the time-varying continuous variables vary within and between student and school levels. Accordingly, three different standard deviations are given, treating either school or student as the cluster variable: the overall standard deviation, the between-school or between-student standard deviation, and within-school or within-student standard deviations. All of the social-emotional competencies variables (i.e., self-control, interpersonal skills, teachers' reports of inhibitory control and attentional focusing, and cognitive assessment of inhibitory control and cognitive flexibility) varied more between students than within students over time, indicating that students tend to sustain their social-emotional competencies over time. However, TPS varied more within than between students, indicating the variation in teachers' perception of the support across grades. Regarding time-varying variables when considering school as a cluster, all of the social-emotional competencies variables varied more within school than across schools. TPS varied more within school than across schools.

Correlations among study variables in the first grade (base year) and fifth grade (last wave) are presented in Table 5 and 6, respectively. Based on preliminary analyses, the overall magnitude and direction of relations among variables were consistent across waves. To avoid overwhelming the reader with multiple tables for each wave, the correlations at the base year and last year were used to present an overall sense of the relations among variables. As evidenced in Table 5 and Table 6, there was a general baseline association between the TPS and all dimensions of social-emotional competencies (i.e., self-control, interpersonal relationship, cognitive flexibility, inhibitory control, and attentional focusing). As expected, student self-control was highly correlated with interpersonal skills. Cognitive measures of executive functioning skills (i.e., inhibitory control and cognitive flexibility) were highly intercorrelated. There were small but significant correlations between cognitive measures of executive functioning and teachers' reports of executive function skills. As Table 6 indicates, the two teacher ratings (i.e., inhibitory control and attentional focusing) more highly intercorrelated, and the correlation between two measures of inhibitory control (i.e., teacher report and cognitive test) were small but significant.

There were small but significant positive correlations between TPS and all the executive functioning skills variables. Higher TPS were associated with higher inhibitory control, higher

attentional focusing, higher cognitive flexibility, and higher cognitive inhibitory control. Higher TPS was also associated with higher interpersonal skills and higher self-control.

In terms of the intercorrelation among sociodemographic variables, higher family SES was associated with higher social-emotional competencies (all dimensions), less school poverty and school diversity. School poverty was positively associated with school diversity. The sociodemographic variables were also associated with the socio-emotional competencies. Lower school poverty and school diversity were associated with higher socio-emotional competencies.

Primary Analysis: Developing Multilevel Models

Crossed random effect modeling techniques were used to analyze the longitudinal data. As noted above, I used three-level crossed random effect modeling because students with multiple assessments are mostly nested within schools, but some students are cross-classified by switching schools. The multilevel model for change allowed me to focus simultaneously on the following: (a) the Level 1 (within-person) analysis focused on individual change over time to answer the first research question, (b) the Level 2 (students and within-school) analysis focused on how these individual changes vary across students, and (c) the Level 3 (between-school) analysis focused on how these individual changes vary across schools.

An advantage of crossed random effect modeling is that it allows examination of the effects of both time-invariant and time-varying predictors. All student and school-level sociodemographic variables were used as time-invariant predictors. In contrast, because TPS took on different values at each measurement occasion, it was treated as a time-varying predictor and included in the Level 1 (within-person) model. Thus, potential predictors were grouped as follows: (a) priority predictors (TPS) in Level 1, (b) student-level sociodemographic variables (family SES and child race/ethnicity) in Level 2, and (c) school-level sociodemographic variables (school poverty) in Level 3. Social-emotional competencies (i.e., self-control, interpersonal skills, executive functioning skills) were treated as time varying outcomes.

Self- Control Skills

Table 7 displays estimates for eight crossed random effect models for change obtained in these analyses. The first model, the unconditional growth model (Model 1), examined the change in self-control scores across grades. The slope of the linear mean developmental trajectory of self-control skills was positive and statistically significant, meaning that self-control skills tended to increase with grade. Student scores varied significantly across schools, across students within school, and within students over time, as indicated by the variance estimates. The estimated intraclass correlation between students in the same school was .03, and the estimated longitudinal (within-student) correlation was .40, meaning that there are more differences between students in the same school than longitudinal changes across students.

Model 2 expanded on the unconditional growth model by including TPS as well as grade. The results showed that TPS had a significantly positive effect on students' self-control skills.

To answer the first research question, I examined the effects of TPS on students' self-control skills, adjusting for student and school-level factors (Model 3). Based on a significant decrease in the deviance statistic, Model 3 is a better-fitting model than Model 2 for examining the main effect of TPS on students' self-control skills. Results indicated a positive significant association of TPS with students' self-control skills, after adjusting for student and school demographics variables.

Additionally, as shown in Model 4-1, there was a significant positive interaction between TPS and grade, indicating that students of teachers who perceived higher school organizational support tended to have greater increases in their self-control skills over time.

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The results of Model 4-2 showed that the interaction between TPS and family SES was not significant. Regarding Model 4-3, after adjusting for the other student and school sociodemographic characteristics and setting, TPS to its mean, and compared to White students, Hispanic and Asian students on average have higher, and Black students have lower self-control skills. The interaction estimates between TPS and student race/ethnicity indicated that the positive association between TPS and student self-control skills was stronger among White students than Hispanic and Asian students. These differences were small but significant.

As shown in Model 4-4 in Table 7, school poverty had a small but significant moderating effect on the association between TPS and student self-control skills. The positive association between TPS and student self-control skills was stronger among students who attended schools with lower concentration of poverty.

Interpersonal Skills

Table 8 displays estimates for crossed random effect models for interpersonal skills. Model 1 in Table 8 indicates that the slope of the linear mean developmental trajectory of interpersonal skills was positive and statistically significant, and it decreased over time. Student scores varied significantly across schools, across students within school, and within the students over time, as indicated by the variance. The estimated intraclass correlations demonstrated that the correlation between students in the same school was .04, while the estimated longitudinal (within-student) correlation for each student was .41, meaning that there were more differences between students in the same school than longitudinal changes.

I expanded on the unconditional growth model by including TPS as the only predictor besides grade (Model 2). Here, TPS had a significantly positive effect on students' interpersonal skills. However, based on a significant decrease in the deviance statistic, Model 3 is a better-fitting model for examining the main effect of TPS on students' interpersonal skills. That is, after adjusting for student and school sociodemographic characteristics, TPS had a significantly positive effect on students' interpersonal skills but did not interact with the time variable (grade).

Regarding moderating roles of student sociodemographic characteristics, Model 4-2 showed a positive significant interaction between TPS and family SES, after adjusting for the other student and school sociodemographic characteristics and setting TPS to its mean. Thus, the positive association between TPS and students' interpersonal skills increased as family SES increased, and children from high SES families benefited more when their teacher perceive more school organizational support than did children from low SES families. Additionally, the interaction estimates between TPS and student race/ethnicity indicated that the positive association between TPS and student interpersonal skills was stronger among White students than Hispanic students, after adjusting for the other student and school sociodemographic characteristics and setting TPS to its mean. This difference was small but significant. The interactions were not significant for Black, Asian, and other race groups (See Table 8, Model 4-3). Finally, as shown in Model 4-4 in Table 8, school poverty had a significant moderating effect on the association between TPS and student interpersonal skills. That is, the positive association between TPS and student interpersonal skills was stronger among students who attended school with a lower concentration of poverty.

Executive Functioning: Teacher Reports of Inhibitory Control

I examined the association between TPS and teacher report of two executive functioning indicators: inhibitory control and attentional focusing. The steps of model building in executive function development were identical with those in self-control and interpersonal relationship development.

Table 9 displays estimates for crossed random effect models for teacher report of inhibitory control. Model 1 in Table 9 indicated the slope of the linear mean developmental trajectory of inhibitory control was positive and statistically significant. There was a significant variation in inhibitory control skills across school, across students within school, and within the students over time, as indicated by the variance. The estimated intra-class correlations demonstrated that the correlation between students in the same school was .02, while the estimated longitudinal (within-student) correlation for a same student was .52, meaning that there were more differences between students in the same school than longitudinal changes.

Based on a significant decrease in the deviance statistic, Model 3 was a better-fitting model for examining the main effect of TPS and students' inhibitory skills. That is, after adjusting for student and school sociodemographic characteristics, TPS had a significant positive effect on students' inhibitory control but it did not interact with the time variable (i.e., grade).

The results of Model 4-2 in Table 9 showed that, after setting TPS to its mean and adjusting for the student and school-level sociodemographic characteristics, there was a significant positive association between family SES and students' inhibitory skills. However, the interaction between TPS and family SES was not significant, indicating the positive influences of TPS on inhibitory control skills were similar for students regardless of their SES background.

The results of Model 4-3 showed that, after adjusting for student and school-level sociodemographic characteristics and setting TPS to its mean, compared to White students, Hispanic and Asian students on average had higher, and Black students had lower, inhibitory control skills. The interaction estimates between TPS and student race/ethnicity indicated that the positive association between TPS and student inhibitory control skills was stronger among White students than Hispanic students. This difference was small but significant. The interaction was not significant for Black, Asian, or other race groups (See Table 9, Model 4-3).

The results in Model 4-4 indicated that school poverty had no significant moderating effects on the association between TPS and student inhibitory skills.

Executive Functioning: Teacher Reports of Attentional Focusing

Table 10 displays estimates for crossed random effect models for teacher report of students' attentional focusing. Model 1 in Table 10 indicated the slope of the linear mean developmental trajectory of attentional focusing was positive and statistically significant, implying that attentional focusing increased over time. Student scores varied significantly across schools, across students within school, and within students over time, as indicated by the variance estimates. The estimated intra-class correlation between students in the same school was .02, while the estimated longitudinal (within-student) correlation a same student was .54, meaning that there were more differences between students in the same school than longitudinal changes.

Based on a significant decrease in the deviance statistic, Model 3 is a better-fitting model for examining the main effect of TPS on students' attentional focusing skills. That is, after adjusting for student and school sociodemographic characteristics, TPS had a significantly positive effect on students' attentional focusing. Additionally, as shown in Model 4-1, there was a statistically significant positive interaction between TPS and grade, indicating a stronger prediction at later grades.

Regarding interaction effects between TPS and student sociodemographic characteristics, TPS displayed significant, positive interactions with family SES (see Table 10, Model 4-2). That is, the positive relation between TPS and students' attentional focusing skills depends on family SES, being stronger for children from high SES families than for children from low SES

families. Additionally, the interaction estimates between TPS and student race/ethnicity indicated that the positive association between TPS and student attentional focusing skills was stronger among White students than Hispanic and Black students. The interaction was not significant for Asian and other race groups (See Table 10, Model 4-3).

As shown in Model 4-4 in Table 10, school poverty had significant small moderating effects on the association between TPS and student attentional focusing skills. That is, the positive association between TPS and student attentional focusing skills was stronger among students who attended schools with low concentration of poverty.

Executive Functioning- Cognitive Assessment

This part of the analysis examined the prediction from TPS to cognitive assessments of two executive functioning indicators (i.e., inhibitory control and cognitive flexibility). The steps of model building in executive function development were identical with the previous analysis.

Table 11 and Table 12 displays estimates for crossed random effect models for cognitive flexibility skills and inhibitory control skills, respectively. The fit of each model presented in Table 11 and Table 12 was evaluated with the goodness-of-fit index. For each successive model, the decrease in the deviance statistic was significant, indicating that Model 3 provided the best fit of all models. Regarding the main effects of the TPS variable, Model 3 indicated there was not a significant association with students' inhibitory control or cognitive flexibility skills, after adjusting for student- and school-levels sociodemographic characteristics. In addition, the interactions of TPS to student SES (Model 4-2), student race/ethnicity (Model 4-3), and school poverty (Model 4-4) were not significant for either of the executive functioning outcomes.

Discussion

In this prospective longitudinal study drawing on nationally representative data, I examined the association between teacher perceptions of school organizational support (TPS) and three types of student social-emotional competence: self-control skills, interpersonal skill, and executive functioning (i.e., inhibitory control, attentional focusing, and cognitive flexibility). In addition, I tested the role of student and school-level sociodemographic characteristics in moderating any relations between TPS and social-emotional competencies.

Overall, findings indicate that teachers' perceptions of school organizational support are linked with several student social-emotional competencies. However, these associations vary considerably by area of social-emotional competence, as well as student grade, student race/ethnicity, family SES, and school poverty. With regard to self-control skills, students of teachers with higher TPS demonstrated greater self-control skills and the association between TPS and self-control skills increased more markedly over time. TPS also had a significant positive relation with students' interpersonal skills but with no growth pattern over time. As for executive functioning skills, students whose teachers reported higher levels of TPS were rated by their teachers at each grade to have better attentional focusing and inhibitory control skills. The positive association between TPS and inhibitory control tended to remain the same over the elementary years, but the impact of TPS on attentional focusing grew stronger in later grades.

As noted above, the findings also indicate that the association between TPS and social-emotional competence varies depending on student race/ethnicity as well as family SES and school poverty. The association between TPS and social-emotional competencies was stronger for White students compared to students of other racial and ethnic backgrounds. In particular, the positive association between TPS and self-control skills was stronger among White students than among Hispanic and Asian students. Additionally, the association of TPS with interpersonal skills and inhibitory control was stronger for White students than Hispanic students. The positive association between TPS and student attentional focusing was stronger among White students than Black students. Finally, students from high SES families scored higher on attentional focusing and interpersonal skills when their teacher perceived more school support than did students from low SES families. Regarding the moderating impact of school poverty, the positive association of TPS to student self-control skills, interpersonal skills, and attentional focusing was stronger among students who attended schools with a low concentration of students living in poverty.

TPS and Social-Emotional Competencies

The results linking TPS with student social-emotional competence are consistent with previous studies, in which school climate was identified as one of the key factors in promoting school-wide SEL (Domitrovich et al., 2017; Oberle et al., 2016). Although previous studies mostly focus on student perception of school climate and SEL, the present results extend the existing empirical literature by confirming the significant link between teacher perception of school climate, particularly TPS and social-emotional competencies at the individual student and school levels. The findings suggest the importance of teacher perception of school support and organizational climate in fostering the development of students' social-emotional competencies.

These findings are also consistent with the prosocial classroom model, which emphasizes the association of teacher social-emotional competencies to student social-emotional competencies. The prosocial classroom model also emphasizes how the elements of the school climate (e.g., supportive working environment, collaboration among staff) contribute to teachers' social-emotional competence and well-being, which ultimately influence student social-

emotional outcomes (Jennings & Greenberg, 2009). Although I found a direct association between TPS and student social-emotional competencies, I could not directly address the mechanisms by which TPS impact students' social-emotional competencies as identified in the prosocial classroom model. Therefore, future studies are needed to examine the mechanisms by which school organizational climate impact teacher and student social-emotional competencies.

The present findings of my study also provide empirical support for elements of positive organizational support (POS) theory, which argues that when employees perceive higher POS, they engage in additional effort and motivation, resulting in enhanced in-role and extra-role job performance helpful to the organization (Baran et al., 2012). Many schools lack the resources to create a system for implementing SEL interventions at the classroom or school level (Bridgeland et al., 2013; Jones & Bouffard, 2012, Oberle et al., 2016). Given the emphasis within the U.S. educational system on performance on standardized tests, teachers may feel excessive pressure to focus exclusively on academic instruction and not prioritize SEL, even though SEL has been linked empirically to academic success (Durlak et al., 2011; Taylor et al., 20017). Although my research did not include measures of teachers' level of motivation, the findings are generally consistent with the notion that those teachers who perceive school organizational support make the necessary effort to support their students' social-emotional development. In general, the findings suggest that future examination of institutional support for teachers is warranted to further test the model linking TPS to their motivation to overcome the challenges to creating effective SEL programs.

The POS model also illuminates how institutional support helps to fulfill teachers' socio-emotional needs for approval, esteem, affiliation, and emotional support, resulting in greater psychological well-being (Baran et al., 2012; Fuller et al., 2003; Johnson et al., 2014; Kurtessis et al., 2017; Rhoades & Eisenberger, 2002). Teachers with higher levels of psychological well-being are able to engage in more effective classroom management, develop positive relationships with their students, and implement SEL curricula effectively, which in turn contribute to fostering student social-emotional competencies (Jennings & Greenberg, 2009). Again, although the findings here are consistent with this model, further research is necessary to confirm empirically the factors linking institutional support for teachers to their well-being and instructional effectiveness.

The present results also show that the association between teacher perceived school organizational support and executive functioning depends on how executive functioning is assessed. TPS was significantly related to teacher ratings of attentional focusing and inhibitory control, but not to the performance-based measure of executive functioning. This differential association is consistent with previous empirical work finding only a modest association between performance- and rating-based measures of executive functioning (Toplak et al., 2012). One factor explaining this discrepancy is that performance-based measures of executive functioning are conducted under structured conditions to assess the efficiency of cognitive processing, whereas ratings of executive function assess the extent to which individuals accomplish goal pursuits under unstructured conditions and focus on executive control. Therefore, they should not be interpreted as equivalent, interchangeable, or as types or subcategories of each other (Toplak et al., 2012). By including measures that examine various aspects of executive functioning, my analysis begins to focus attention most particularly on the association of TPS to the autonomous deployment of executive control rather than demonstration of cognitive efficiency. As I will discuss in the limitations section, these differential findings may have resulted at least partly from biases or distortions in teachers' ratings of student cognition (Urhahne & Wijnia, 2021).

Moderating Role of Student Sociodemographic Characteristics

With regard to main effect and moderating effects of race/ethnicity, results indicated that after adjusting for student and school demographic characteristics, compared to White students, Hispanic and Asian students had stronger self-control, interpersonal skills, inhibitory control, and attentional focusing. The results also indicated that after covarying for TPS, student age, family SES, school diversity, and school poverty, Black students were lower on average on social-emotional competencies (across different categories) than White students. These findings generally support previous work showing variation in SEL outcomes by race/ethnicity (Hough et al., 2017; Ozier et al., 2019).

The moderation analysis showed that the association between TPS and social-emotional competencies was stronger for White students compared to those of other racial and ethnic backgrounds. In particular, the positive association between TPS and self-control skills was stronger among White students than Hispanic and Asian students. Moreover, the effect of TPS on interpersonal skills and inhibitory control was stronger for White students than Hispanic students. The moderating analysis also indicated that the association between TPS and student attentional focusing was weaker for Black students and Hispanic students than White students. These findings suggest that there is a need to create better conditions for teachers of BIPOC students, so that they can in turn create culturally responsive programs to benefit these students as well as those who are White.

These findings also suggest differential effects across racial and ethnic groups of family and community contexts on the students' social-emotional competencies. The weaker association between TPS and social-emotional competencies among Hispanic and Asian students (compared to White students) might be related to the fact that, on average, self-control and inhibitory control skills are more often reinforced at home in these latter groups, so schools and teachers may play a less pivotal role (Friedlmeier et al. 2011; Raval & Walker, 2019). For example, parents in Asian and Middle-Eastern societies are more strongly focused than those in Western societies on fostering relational emotional competence, including knowledge of emotion display rules, self-control over socially disengaging emotions, and sensitivity to interpersonal relations (Friedlmeier et al., 2011).

Raval and Walker (2019) have proposed a conceptual framework that unpacks aspects of culture, which might explain the variation in parent emotion socialization processes. The model also expounds upon the role of culture in the relation between parent emotion socialization and child socio-emotional functioning across cultural groups. To avoid assuming within-group homogeneity in terms of parental values and practices, it is crucial to recognize the crucial effect of contextual demands (e.g., acculturation) in contributing to parent emotion socialization in particular groups (Keller, 2012). Future research should include qualitative research to understand how diverse parents' understanding and evaluation of particular social-emotional competencies is manifested in terms of their socialization practices that are response to their respective contexts.

Similarly, additional research should be conducted to better understand how teachers' approach to SEL is shaped by their own racial/ethnic heritage, as well as by their awareness of potential biases in inter-group judgments. The importance of educators' cultural awareness and social-emotional competencies was highlighted in Gregory and Fergus's (2017) equity-oriented conceptualization of social-emotional competencies. They argued that prevailing *colorblind* notions of SEL don't consider cultural difference, power, and privilege, which tend to ignore how educators' beliefs and structural biases can influence pedagogy and discipline practices.

Additionally, these findings may be interpreted within the broader context of discrimination against members of underserved groups. Researchers have argued that undergraduate students who report experiencing discrimination in the job hiring process exhibit lower executive functioning skills than those who do not report such discrimination (Ozier et al., 2019).

The current findings also showed that adjusting for school-level poverty and racial/ethnic diversity, family SES positively predicted student social-emotional competencies across all domains. This finding aligns with previous literature, in which children from lower SES families were found to be at risk for less developed social-emotional competencies (West et al., 2020; Yoshikawa et al, 2012). Additionally, I found that students from higher SES families scored higher on attentional focusing and interpersonal skills when their teachers perceived more school support than did students from lower SES families. This result suggests that TPS may not buffer the negative impact of lower SES on students' social-emotional competencies. However, it is important to note that the finding regarding interpersonal relationship competence was significant at the 5% level. Given the large sample size, it relatively easy to obtain this level of statistical significance. Therefore, the above findings should be interpreted with caution. Overall, more work is needed on exploration of the impact of TPS on students' social-emotional competencies across different combinations of family SES and student race/ethnicity subgroups.

Moderating Role of School Poverty

The results indicated that after adjusting for student-level sociodemographic characteristics, positive associations between TPS and student self-control skills, interpersonal skills, and attentional focusing were stronger among students who attended schools with a relatively low concentration of students living in poverty. These findings are consistent with other findings suggesting that TPS has more impact on students from higher-resource families and schools. Nevertheless, although these relations were significant, the coefficients were small.

Limitations and Future Directions

The present study contributes to the literature by extending the conceptual framework for understanding the process by which teachers' perceptions of support ultimately result in stronger student outcomes with respect to SEL. Working with a large longitudinal data set enabled me to examine hypotheses regarding potential causal patterns. Nevertheless, several limitations should be noted. As with any analysis of a secondary data set, analyses are limited by the available variables. First, the ECLS-K:2011 dataset includes a subset of social-emotional competencies and leaves out several that are considered important predictors of academic outcomes. In particular, Jones and Bouffard (2012) conceptualize emotional processes as including a number of elements in addition to self-control, the construct available in this data set. Specifically, they also point to the importance of emotional knowledge and expression (e.g., self-awareness and self-management) as well as empathy and perspective-taking. Future studies should include assessments of other aspects of emotional processes in addition to self-control.

Another limitation is that the ECLS-K:2011 dataset included parent and student reports of students' social-emotional competencies for some but not all waves. Teachers were the only source of ratings on students' social-emotional competencies across all waves. To assess possible observer effects, I checked the correlations between the teacher and parent ratings in those waves where the latter were available and found that they were statistically significant at 1%, with t statistics ranging from 19.23 to 22.81. Although these findings afforded some evidence regarding the accuracy of the teachers' perceptions, in future studies, the model that I developed should be assessed using information regarding student social-emotional competencies from multiple perspectives (e.g., student, parent, and multiple teacher reports).

Attrition always presents a challenge to the collection of longitudinal data. Although the ECLS-K:2011 began with a representative sample of students and their schools, 28% of the students changed schools, and, according to the ECLS-K:2011 manual, approximately 10% of the students who transferred moved to a school that declined to participate, thus affecting the representativeness of the full analytic sample.

As for outcome variables, the TPS scale that I used is a one-factor construct and relatively brief, with only four items. Although the results of my CFA analysis indicated good internal reliability and structural validity, future studies should employ comprehensive and multi-dimensional measures of perceived organizational support to provide a more nuanced view of this complex construct. Furthermore, future studies can use qualitative methods to collect additional insightful and comprehensive perspectives of teachers' perceptions of school organizational support.

In studying the moderating role of family SES, I relied on a construct constructed within the ECLS-K:2011 dataset that included measures of parents' education and their occupational prestige as well as household income. Although occupational prestige has been commonly used as a component of family SES in many studies (e.g., Fujishiro & Gong, 2010), previous research on the predictors of social-emotional competence has relied almost exclusively on family income and parent education and has not included occupational prestige. Researchers wishing to investigate these structural dynamics should be mindful of their options with respect to this measure. The ECLS-K:2011 dataset also contains separate variables for parent education and household income, allowing future researchers to examine differences among these various indicators of SES in terms of the questions of interest, whether they are treated as continuous measures or categorical indicators of, for example, household poverty.

Implications for Educational Practice

The present findings of my study can inform educational practice in three important respects. First, they point to the importance of the institutional conditions that constitute teachers' workplaces. I found that when teachers perceived their workplace as generally supportive, their students had more highly development social-emotional competencies. Previous work on designing and implementing interventions to support students' SEL has tended to focus somewhat narrowly on promoting the social-emotional competencies of school staff and teachers as well as imparting techniques for supporting SEL in the classroom. The current findings suggest that it is critical to recognize the role of broader institutional factors such as a supportive organizational climate in supporting student social-emotional competencies. One benefit of taking a broader institutional perspective is that it enables the researcher to see the SEL-related intervention in relation to competing demands on teacher time and resources. If, for instance, teachers perceive a strong mandate to focus on academic skills, they may not feel adequately supported to engage deeply in the SEL intervention. It is also important that district leaders and administrators understand how their efforts to create a positive school organizational climate are actually perceived by teachers.

I also found that the association between teachers' perceptions of support and student social-emotional competence varied depending on student race/ethnicity, family SES and school poverty. In particular, this association was stronger for White students, students from high SES families, and those who attended schools with a low concentration of poverty. Although there are multiple possible explanations for this finding, one clear implication is that schools should develop culturally responsive and transformative SEL programs that account for the sociocultural strengths and values that children bring to the classroom as well as for the specific

challenges that some children face at school and in society at large. School psychologists can play a vital role in collaborating with school administrators and district teams to recognize and integrate diverse groups' cultural norms and family values into SEL programs. Teachers can collaborate with school psychologists, instructional coaches, and other staff to enhance their cultural awareness and incorporate both social justice education and culturally sustaining pedagogies with a robust focus on transformative SEL dimensions such as identity, agency, belonging, and engagement (Jagers et al., 2019).

The present findings also highlight how the contexts of family and community may help shape students' social-emotional competencies and reinforce the appropriateness of CASEL's updated definition of SEL, which emphasizes attaining educational equity through school-family-community partnerships to co-create meaningful SEL practices (Mahoney et al., 2020; Niemi, 2020). In this way, educators can build strong connections with families, learn about their cultural values, and collaborate with them where possible in aligning SEL strategies used at home and in school.

Conclusion

I have provided longitudinal evidence of a positive association between teacher perception of school organizational support (TPS) and student social-emotional competencies in elementary school. Additionally, I showed that these benefits vary considerably by area of social-emotional competence, as well as student grade, student race/ethnicity, family SES, and school poverty. In particular, the association between TPS and self-control skills was stronger among White students than Hispanic and Asian students. The association of TPS with interpersonal skills and inhibitory control was stronger for White students than Hispanic students. The positive association between TPS and student attentional focusing was stronger among White students than Black and Hispanic students. Additionally, students from high SES families scored higher on attentional focusing and self-control skills when their teacher perceived more school support than did students from low SES families. Finally, the positive association of TPS to student self-control skills, interpersonal skills, and attentional focusing was stronger among students who attended schools with a low concentration of students living in poverty. These findings highlight the important role of institutional support for teachers in enabling them to foster students' social-emotional competencies. The findings also suggest that further research is needed to identify the aspects of organizational support that are effective for teachers whose students are from marginalized communities.

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Table 1

Fit Indices for the Teacher Perceived Organization Support across Different Waves from Confirmatory Factor Analyses (Maximum Likelihood Robust)

	N	X^2	*df*	CFI	TLI	SRMR	RMSEA
1st grade	13,529	753.91*	2	0.98	0.94	0.02	0.16
2nd grade	12,692	1145.12*	5	0.98	0.97	0.01	0.13
3rd grade	12,045	77.29*	2	1.00	0.99	0.01	0.06
4th grade	11,191	249.89*	2	0.99	0.97	0.02	0.10
5th grade	10,505	209.69*	2	0.99	0.96	0.02	0.10

Note. CFI = Comparative Fit Index; TLI= Tucker-Lewis Index; SRMR = Standardized Root Mean- Square Residual; RMSEA= Root Mean-Square Error of Approximation. Models were tested on full sample. The bifactor model did not converge.

*p < .001.

Table 2

Descriptive Statistics for Study Participants

	1st grade	2nd grade	3rd grade	4th grade	5th grade
	% or M (SD)	M (SD)	M (SD)	M (SD)	M (SD)
Student/school Characteristics					
Male	51.22				
White, non-Hispanic	46.81				
Black, non-Hispanic	13.21				
Hispanic	25.33				
Asian, non-Hispanic	8.51				
Other race/ethnicity	6.12				
Family SES	- 0.09 (.78)				
School poverty	51.47 (27.92)				
School diversity	48.8 (30.0)				
Students Outcomes					
Executive functioning					
Cognitive flexibility (Cognitive test)		6.69 (1.35)	7.19 (1.11)	7.62 (.98)	7.99 (.95)
Inhibitory control (Cognitive test)				7.97 (1.00)	8.42 (.88)
Attentional focusing (Teacher report)	3.57 (.86)	3.49 (1.12)	3.49 (1.12)	3.53 (1.12)	3.61 (1.09)
Inhibitory control (Teacher report)	3.71 (.86)	3.68 (.84)	3.70 (.83)	3.74 (.82)	3.81 (.81)
Interpersonal skills (Teacher report)	3.14 (.66)	3.12 (.66)	3.13 (.66)	3.12 (.65)	3.13 (.65)
Self-control skills (Teacher report)	3.21 (.62)	3.22 (.63)	3.26 (.62)	3.28 (.61)	3.31 (.61)
Predictor variable					
Teacher perceived support (TPS)	3.9 (65)	3.88 (.64)	3.94 (.66)	4.03 (.63)	4.04 (.62)

Note. School poverty is measured by percentage of students eligible of free/reduced lunch; School diversity was measured by percentage of minority students in the school. TR refers to teacher rating; CT refers to cognitive test.

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Table 3

Descriptive Statistics for Social-Emotional Competencies by Race/Ethnicity

	Self-control (TR)	Interpersonal skills (TR)	Attentional focusing (TR)	Inhibitory control (TR)	Cognitive flexibility (CT)	Inhibitory control (CT)
	M (SD)	M (SD)	M (SD)	M (SD)	M (SD)	M (SD)
White, non-Hispanic	3.29 (.60)	3.17 (0.65)	3.57 (1.05)	3.76 (.84)	7.44 (1.11)	8.27 (.89)
Black, non-Hispanic	3.26 (.60)	3.12 (0.64)	3.49 (1.07)	3.71 (.81)	7.22 (1.23)	8.06 (1.00)
Hispanic	3.4 (.55)	3.2 (0.63)	3.92 (.95)	3.97 (.77)	7.52 (1.20)	8.5 (.92)
Asian, non-Hispanic	2.98 (.98)	2.9 (0.68)	3.21 (1.05)	3.43 (.85)	6.91 (1.50)	7.82 (1.16)
Other race/ethnicity	3.25 (.62)	2.9 (0.68)	3.57 (1.08)	3.74 (.83)	7.44 (1.21)	8.32 (0.93)

Note. TR refers to teacher rating; CT refers to cognitive test.

Table 4

Means and Standard Deviations of Time-Varying Variables

	Means, Overall, Within and Between Student Standard Deviations													
	Self-Control (TR)		Interpersonal relationship (TR)		Inhibitory control (TR)		Attentional focusing (TR)		Inhibitory control (CT)		Cognitive flexibility (CT)		Teacher Perceived Support	
	M	SD	M	SD	M	SD	M	SD	M	SD	M	SD	M	SD
Overall	3.25	.62	3.13	.66	3.72	.84	3.54	1.06	8.19	.97	7.33	1.22	3.95	.64
Within		.39		.42		.49		.62		.50		.82		.51
Between		.50		.52		.70		.87		.85		.96		.43
	Means, Overall, Within and Between School Standard Deviations													
	Self-Control (TR)		Interpersonal relationship (TR)		Inhibitory control (TR)		Attentional focusing (TR)		Inhibitory control (CT)		Cognitive flexibility (CT)		Teacher Perceived Support	
	M	SD	M	SD	M	SD	M	SD	M	SD	M	SD	M	SD
Overall	3.24	.62	3.13	.66	3.72	.84	3.54	1.06	8.18	.97	7.33	1.22	3.95	.64
Within		.57		.61		.78		.98		.85		1.11		.54
Between		.45		.47		.60		.81		.80		.99		.49

Note. TR refers to teacher rating; CT refers to cognitive test.

Table 5

Correlation Matrix Among Study Variables (Wave 1)

Variables	1	2	3	4	5	6	7	8
1. TPS	1.00							
2. Interpersonal skills	.12*	1.00						
3. Self-control	.09*	.80*	1.00					
4. Inhibitory control	.10*	.64*	.67*	1.00				
5. Attentional focusing	.10*	.55*	.53*	.77*	1.00			
6. Family SES	.15*	.14*	.15*	.15*	.19*	1.00		
7. School poverty	-.21*	-.08*	-.10*	-.08*	-.09*	-.53*	1.00	
8. School diversity	-.20*	-.08*	-.09*	-.05*	-.03*	-.37*	.57*	1.00

Note. Measures of social-emotional competencies were derived from teacher ratings.

p < .001.

Table 6

Correlations Among Study Variables (Wave 5)

Variables	1	2	3	4	5	6	7	8	9	10
1. TPS	1.00									
2. Interpersonal skills (TR)	.12*	1.00								
3 Self-control (TR)	.11*	.80*	1.00							
4. Inhibitory control (TR)	.10*	.63*	.68*	1.00						
5. Attentional focusing (TR)	.09*	.59*	.60*	.76*	1.00					
6. Cognitive flexibility (CT)	.04*	.12*	.12*	.15*	.21*	1.00				
7. Inhibitory control (CT)	.03**	.10*	.11*	.12*	.17*	.50*	1.00			
8. Family SES	.14*	.15*	.15*	.15*	.18*	.17*	.17*	1.00		
9. School poverty	-.20*	-.08*	-.12*	-.10*	-.10*	-.14*	-.16*	-.57*	1.00	
10. School diversity	-.17*	-.07*	-.10*	-.08*	-.06*	-.10*	-.09*	-.38*	.61*	1.00

Note. TR refers to teacher rating; CT refers to cognitive test.

* $p < .001$.

Table 7

Crossed Random Effect Models for Students' Self-Control Skills

Variables	Self-Control						
	Model 1	Model 2	Model 3	Model 4-1	Model 4-2	Model 4-3	Model 4-4
Fixed Effects							
Grade	2.10***	1.86***	1.87***	1.85***	1.87***	1.87***	1.87***
Teacher Perceived Support (TPS)		8.50***	7.96***	7.97**	7.99***	8.94***	8.08***
Family SES			10.40***	10.40***	10.38***	10.41***	10.39***
Child race/ethnicity (White as a reference group)							
Black			-21.49***	-21.49***	-21.50***	-21.29***	-21.55***
Hispanic			7.28***	7.28***	7.25***	7.26***	7.25***
Asian			12.06***	12.08***	12.06***	12.18***	12.07***
Other race/ethnicity			-1.23	-1.26	-1.23	-1.12	-1.21
Male (vs. female)			-24.62***	-24.62***	-24.62***	-24.62***	-24.62***
School poverty			0.02	0.03	0.03	0.03	0.03
School diversity			-0.07***	-0.07***	-0.07***	-0.07***	-0.06***
TPS × Grade				.54**			
TPS × Family SES					.58		
TPS × Child race/ethnicity							
TPS × Black						-0.27	
TPS × Hispanic						-2.71***	
TPS × Asian						-3.82***	
TPS × Other race/ethnicity						1.69	
TPS × School poverty							-0.03**
TPS × School diversity							
Intercept	324.6X***	324.7***	373.36***	337.31***	337.33***	337.27***	337.24***
Random Effect							
Level 1 (within the students)	45.73	44.5	44.57	44.57	44.57	44.57	44.57
Level 2 (between students within school)	41.51	40.6	37.37	37.37	37.38	37.37	37.38
Level 3 (between school)	13.66	12.2	10.29	10.28	10.28	10.27	10.27
Model fit statistics							
2-log likelihood	-43935.094	-43658.558	-294559.58	-294556.96	-294558.75	-294550.12	-294556.4
Chi-square	14492.32 ***	14407.12 ***	11759.61***	11758.14***	11760.33***	11742.61***	11757.93***
N	54,682	54,682	54,682	54,682	54,682	54,682	54,682

Note. To facilitate interpretation of the coefficients, the response variable was multiplied by 100.

*** $p < 0.001$, ** $p < 0.05$, *$p < 0.1$.

Table 8

Crossed Random Effect Models for Students' Interpersonal Skills

Variables	Interpersonal Skills						
	Model 1	Model 2	Model 3	Model 4-1	Model 4-2	Model 4-3	Model 4-4
Fixed Effects							
Grade	-0.34***	-0.70***	-0.68***	-0.69***	-0.68***	-0.69***	-0.69***
Teacher Perceived Support (TPS)		10.21***	9.68***	9.68***	9.72***	10.36***	9.81***
Family SES			12.92***	12.92***	12.90***	12.93***	12.91***
Child race/ethnicity (White as a reference group)							
Black			-19.29***	-19.29***	-19.31***	-19.19***	-19.36***
Hispanic			4.83***	4.84***	4.80***	4.80***	4.80***
Asian			3.81**	3.81**	3.80**	3.87**	3.81**
Other race/ethnicity			-1.41	-1.43	-1.42	-1.34	-1.39
Male (vs. female)			-30.23***	-30.24***	-30.24***	-30.23***	-30.24***
School poverty			0.08***	0.08***	0.08***	0.08***	0.08***
School diversity			-0.02	-0.02	-0.02	-0.02	-0.02
TPS × Grade				0.38			
TPS × Family SES					0.84*		
TPS × Child race/ethnicity							
TPS × Black						-0.45	
TPS × Hispanic						-2.12**	
TPS × Asian						-1.15	
TPS × Other race/ethnicity						0.93	
TPS × School poverty							-0.04***
TPS × School diversity							
Intercept	312.04***	312.11***	328.59***	328.56***	328.54***	328.54***	328.46***
Random Effect							
Level 1 (within the students)	48.81	48.50	48.51	48.52	48.52	48.52	48.52
Level 2 (between students within school)	42.16	42.10	37.92	37.92	37.93	37.92	37.93
Level 3 (between school)	12.69	11.92	10.74	10.74	10.73	10.72	10.72
Model fit statistics							
2-log likelihood	-299889.25	-299552.4	-298510.94	-298509.84	-298509.47	-298507.59	-298507.35
Chi-square	12974.33***	12904.42***	10135.73 ***	10134.87 ***	10137.63***	10122.17***	10132.02***
N	54,682	54,682	54,682	54,682	54,682	54,682	54,682

Note. To facilitate interpretation of the coefficients, the response variable was multiplied by 100.

*** $p < 0.001$, ** $p < 0.05$, *$p < 0.1$.

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Table 9

Crossed Random Effect Models for Students' Inhibitory Control Skills Based on the Teacher Report

Variables	Inhibitory Control-Teacher report						
	Model 1	Model 2	Model 3	Model 4-1	Model 4-2	Model 4-3	Model 4-4
Fixed Effects							
Grade	2.26***	1.87***	1.91***	1.90***	1.91***	1.90***	1.91***
Teacher Perceived Support (TPS)		10.79***	10.16***	10.17***	10.21***	11.25***	10.25***
Family SES			16.56***	16.56***	16.54***	16.54***	16.55***
Child race/ethnicity (White as a reference group)							
Black			- 20.77***	- 20.77***	- 20.79***	- 20.84***	- 20.82***
Hispanic			8.89***	8.89***	8.85***	8.83***	8.86***
Asian			22.54***	22.54***	22.53***	22.62***	22.53***
Other race/ethnicity			2.16	2.13	2.16	2.32	2.18
Male (vs. female)			-49.83***	-49.84***	-49.84***	-49.84***	-49.84***
School poverty			0.13***	0.13***	0.13***	0.13***	0.13***
School diversity			-0.08***	-0.08***	-0.08***	-0.08***	-0.08***
TPS × Grade				0.45			
TPS × Family SES					0.87		
TPS × Child race/ethnicity							
TPS × Black						-2.20	
TPS × Hispanic						-2.86***	
TPS × Asian						-1.79	
TPS × Other race/ethnicity						2.11	
TPS × School poverty							-0.03
TPS × School diversity							
Intercept	371.07***	371.25***	395.13***	395.10***	395.08***	395.05***	395.04***
Random Effect							
Level 1 (within the students)	56.68	56.38	56.44	56.41	56.41	56.41	56.41
Level 2 (between students within school)	60.24	60.22	52.83	52.83	52.83	52.82	52.82
Level3 (between school)	13.35	12.52	10.74	10.74	10.73	10.69	10.72
Model fit statistics							
2-log likelihood	-317177.9	-316897.53	-315459.05	-315457.93	-315457.88	-315453.39	-315457.76
Chi-square	19467.01***	19526.85***	14905.13***	14903.45***	14905.12***	14891.10***	14903.88***
N	55,943	55,943	55,943	55,943	55,943	55,943	55,943

Note. In order to easier interpretation of coefficient, the response variable was multiplied by 100.

*** p < 0.001, ** p < 0.05, *p < 0.1.

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Table 10

Crossed Random Effect Models for Students' Attentional Focusing Skills Based on the Teacher Report

Variables	Attentional Focusing-Teacher report						
	Model 1	Model 2	Model 3	Model 4-1	Model 4-2	Model 4-3	Model 4-4
Fixed Effects							
Grade	0.70***	0.29	0.35	0.34	0.35	0.34	0.35
Teacher Perceived Support (TPS)		11.28***	10.51***	10.52***	10.63***	12.27***	10.66*
Family SES			27.42***	27.42***	27.37***	27.41***	27.39*
Child race/ethnicity (White as a reference group)							
Black			- 22.99***	- 22.99***	- 23.04***	- 23.37***	- 23.09*
Hispanic			6.89***	6.90***	6.78***	6.94***	6.84*
Asian			31.98***	31.99***	31.97***	32.14***	31.98*
Other race/ethnicity			2.12	2.08	2.13	2.26	2.16
Male (vs. female)			-53.73***	-53.74***	-53.76***	-53.74***	-53.74*
School poverty			0.19***	0.19***	0.19***	0.19***	0.19*
School diversity			0.01	0.01	0.01	0.01	0.01
TPS × Grade				0.67*			
TPS × Family SES					2.38***		
TPS × Child race/ethnicity							
TPS × Black						-5.39***	
TPS × Hispanic						-3.13**	
TPS × Asian						-1.96	
TPS × Other race/ethnicity						-1.27	
TPS × School poverty							-0.04**
TPS × School diversity							
Intercept	352.48***	352.65***	378.71***	378.65***	378.57***	378.57***	378.54*
Random Effect							
Level 1 (within the students)	70.46	70.19	70.21	70.20	70.20	70.20	70.20
Level 2 (between students within school)	77.92	77.85	69.94	69.94	69.94	69.94	69.94
Level3 (between school)	15.39	14.79	12.24	12.21	12.18	12.17	12.18
Model fit statistics							
2-log likelihood	-329745.77	-329548.05	-328308.62	-328307.03	-328303.03	-328302.82	-328306
Chi-square	21556.64***	21583.10***	17397.45***	17392.01***	17398.50***	17385.85***	17393.61***
N	55,943	55,943	55,943	55,943	55,943	55,943	55,943

Note. In order to easier interpretation of coefficient, the response variable was multiplied by 100.

*** $p < 0.001$, ** $p < 0.05$, *$p < 0.1$.

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Table 11

Crossed Random Effect Models for Cognitive Assessment of Students' Cognitive Flexibility Skills

VARIABLES	Cognitive Flexibility-Cognitive Assessment						
	Model 1	Model 2	Model 3	Model 4-1	Model 4-2	Model 4-3	Model 4-4
Fixed Effects							
Grade	41.93***	41.85***	41.91***	41.92***	41.91***	41.92***	41.91***
Teacher Perceived Support (TPS)		1.62**	-.06	.28	-.11	-.85	-.15
Family SES			18.29***	18.29***	18.34***	18.30***	18.30***
Child race/ethnicity (White as a reference group)							
Black			- 30.48***	- 30.50***	- 30.45***	- 30.57***	- 30.43***
Hispanic			0.05	0.04	0.09	0.06	0.08
Asian			9.40**	9.39**	9.39**	9.30**	9.39**
Other race/ethnicity			5.85	5.88	5.85	5.80	5.84
Male (vs. female)			-7.99***	-7.99***	-7.98***	-7.98***	-7.98***
School poverty			-0.15***	-0.15***	-0.15***	-0.15***	-0.15***
School diversity			-0.08*	-0.08*	-0.08*	-0.08*	-0.08*
TPS × Grade				-0.66			
TPS × Family SES					-1.03		
TPS × Child race/ethnicity							
TPS × Black						.83	
TPS × Hispanic						2.62	
TPS × Asian						1.27	
TPS × Other race/ethnicity						-2.95	
TPS × School poverty							0.03
TPS × School diversity							
Intercept	709.25***	709.28***	716.90***	716.95***	716.97***	716.97***	717.00***
Random Effect							
Level 1 (within the students)	79.98	79.98	80.16	80.16	80.16	80.15	80.15
Level 2 (between students within school)	74.17	74.16	72.38	72.38	72.38	72.38	72.37
Level3 (between school)	23.64	23.51	15.33	15.34	15.33	15.33	15.33
Model fit statistics							
2-log likelihood	-243954.7	-243952.49	-243605.69	-243605.16	-243605.11	-243603.91	-243605.18
Chi-square	9467.93 ***	9431.15***	8347.20***	8347.51***	8347.81***	8347.59***	8346.73***
N	40,608	40,608	40,608	40,608	40,608	40,608	40,608

Note. In order to easier interpretation of coefficient, the response variable was multiplied by 100.

*** $p < 0.001$, ** $p < 0.05$, *$p < 0.1$.

Table 12

Crossed Random Effect Models for Cognitive Assessment of Students' Inhibitory Control Skills

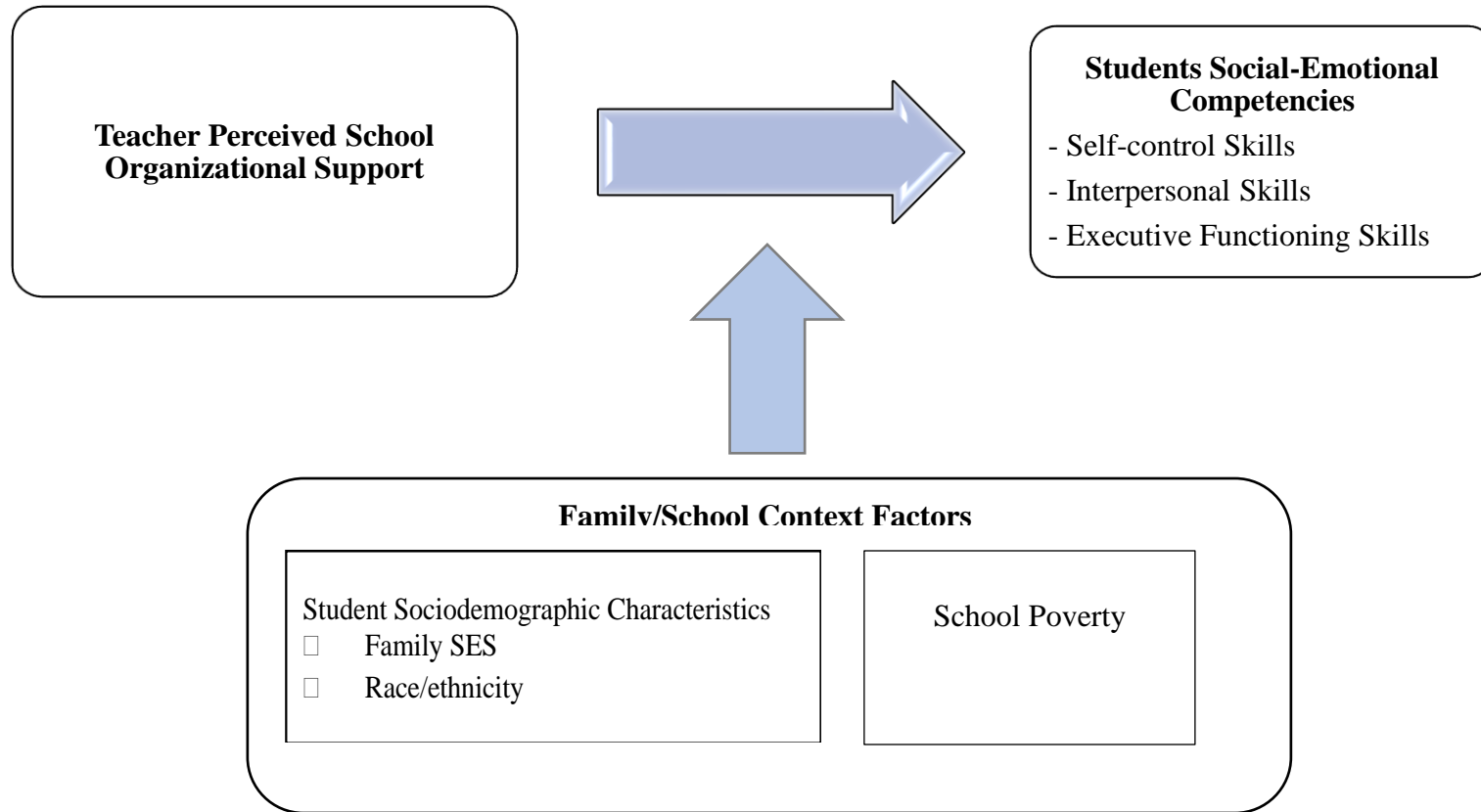| VARIABLES	Inhibitory Control- Cognitive Assessment						
	Model 1	Model 2	Model 3	Model 4-1	Model 4-2	Model 4-3	Model 4-4
Fixed Effects							
Grade	44.61***	44.60***	44.60***	44.60***	44.60***	44.56***	44.60***
Teacher Perceived Support (TPS)		1.97*	-0.52	-0.52	-0.52	-0.21	-0.51
Family SES			14.62***	14.63***	14.65***	14.63***	14.65***
Child race/ethnicity (White as reference group)							
Black			- 26.15***	- 26.17***	- 26.15***	- 26.28***	- 26.15***
Hispanic			-3.66	-3.66	-3.65	-3.62	-3.66
Asian			23.90***	23.91***	23.90***	23.92***	23.90***
Other race			7.70**	7.74**	7.74**	7.80**	7.74**
Male (vs. female)			10.92***	10.92***	10.92***	10.90***	10.91***
School poverty			-0.24***	-0.24***	-0.24***	-0.24***	-0.24***
School diversity			0.04	0.04	0.04	0.04	0.04
TPS × Grade				-0.71			
TPS × Family SES					-0.18		
TPS × Child race/ethnicity							
TPS × Black						-3.5	
TPS × Hispanic						0.11	
TPS × Asian						0.38	
TPS × Other race/ethnicity						-.42	
TPS × School poverty							-.00
TPS × School diversity							
Intercept	746.05***	745.91***	743.12***	743.02***	743.13***	743.12***	743.12***
Random Effect							
Level 1 (within the students)	63.74	63.76	63.80	63.80	63.80	63.77	63.77
Level 2 (between students within school)	66.00	65.99	64.77	64.77	64.77	64.76	64.77
Level3 (between school)	21.81	21.66	12.44	12.45	12.44	12.47	12.44
Model fit statistics							
2-log likelihood	-113354.9	-113353.02	-113038.43	-113038.35	-113038.42	-113037.82	-113038.43
Chi-square	3109.62***	3090.36***	2667.23***	2667.05***	2666.84***	2665.55***	2666.98***
N	19,269	19,269	19,269	19,269	19,269	19,269	19,269

Note. In order to easier interpretation of coefficient, the response variable was multiplied by 100.

*** $p < 0.001$, ** $p < 0.05$, *$p < 0.1$.

Figure 1

Integrated Framework
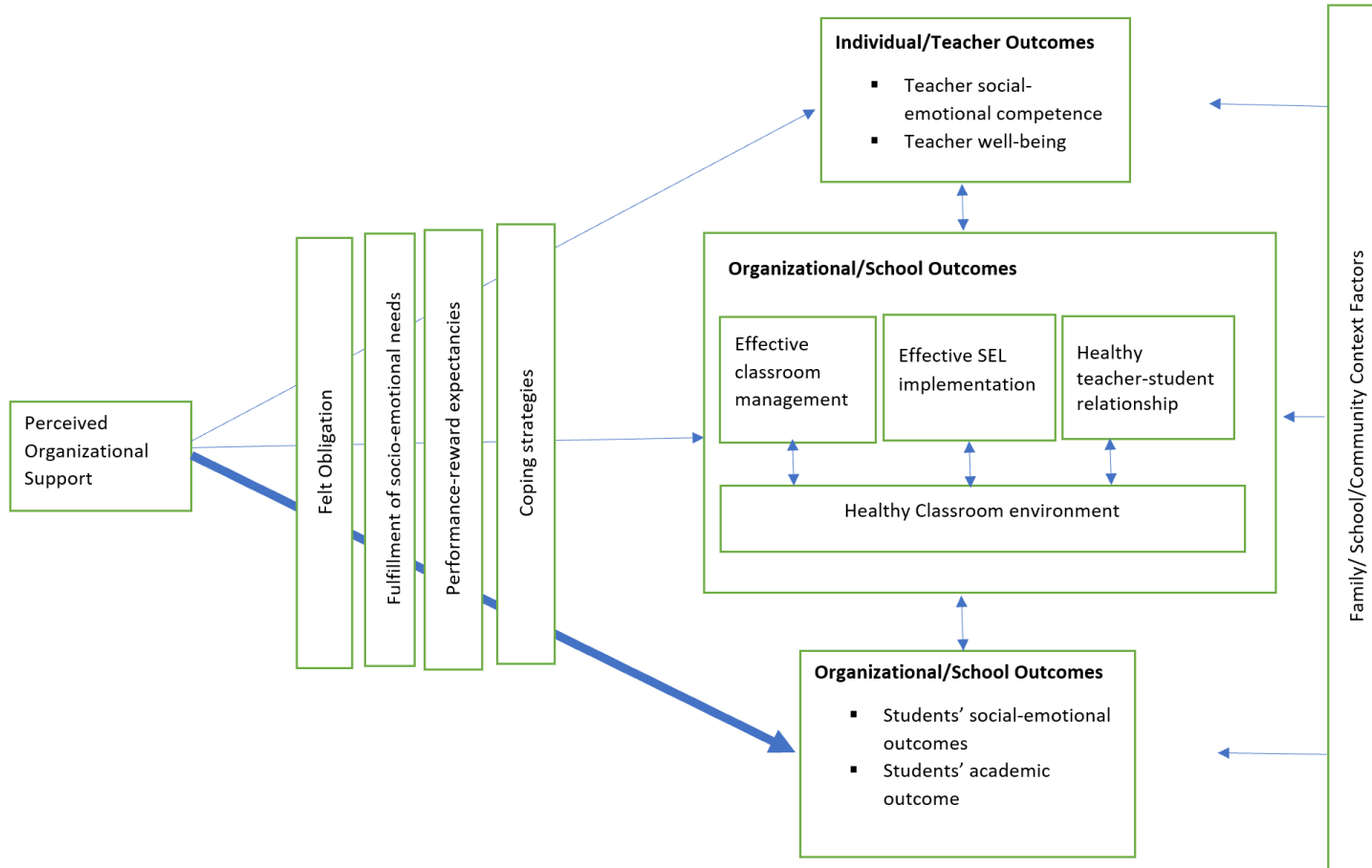
Figure 2

Conceptual Framework for This Study

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┌─────────────────────────────┐              ┌─────────────────────────────────┐
│                             │              │  Students Social-Emotional      │
│  Teacher Perceived School   │      ⟹       │       Competencies              │
│   Organizational Support    │              │                                 │
│                             │              │  - Self-control Skills          │
│                             │              │  - Interpersonal Skills         │
└─────────────────────────────┘              │  - Executive Functioning Skills │
                                             └─────────────────────────────────┘
                                        ⟰

              ┌──────────────────────────────────────────────────────┐
              │           Family/School Context Factors              │
              │  ┌────────────────────────────────┐  ┌─────────────┐ │
              │  │ Student Sociodemographic        │  │             │ │
              │  │ Characteristics                 │  │ School      │ │
              │  │   ☐  Family SES                 │  │ Poverty     │ │
              │  │   ☐  Race/ethnicity             │  │             │ │
              │  └────────────────────────────────┘  └─────────────┘ │
              └──────────────────────────────────────────────────────┘
```

Appendix A
Attentional Focusing and Inhibitory Control Skills Scale- First Grade

Please read each statement and decide whether it is a "true" or "untrue" description of this child's reaction to a number of situations within the past six months. If you cannot answer one of the items because you have never seen the child in that situation, then mark "not applicable."

1. When practicing an activity, has a hard time keeping her/his mind on it
2. Will move from one task to another without completing any of them
3. When drawing or coloring in a book, shows strong concentration
4. When building or putting something together, becomes very involved in what s/he is doing, and works for long periods
5. Is easily distracted when listening to a story
6. Sometimes becomes absorbed in a picture book and looks at it for a long time
7. Can wait before entering into new activities if s/he is asked to
8. Plans for new activities or changes in routine to make sure s/he has what will be needed
9. Has trouble sitting still when s/he is told to (story time, etc.)
10. Is good at following instructions
11. Approaches places that s/he thinks might be "risky" slowly and cautiously
12. Can easily stop an activity when s/he is told "no."

Source: Putnam, S. P., & Rothbart, M. K. (2006). Development of Short and Very Short forms of the Children's Behavior Questionnaire. *Journal of Personality Assessment, 87 (1)*, 103-113. Used with permission by NCES for ECLS-K:2011 studies (https://nces.ed.gov/ecls/pdf/firstgrade/Spring_2012_Teacher_Ques_Child_Level_First.pdf)

Appendix B
Attentional Focusing and Inhibitory Control Skills Scale- Second through Fifth Grade

Please read each statement and decide whether it is a "true" or "untrue" description of this child's reaction to a number of situations within the past six months. If you cannot answer one of the items because you have never seen the child in that situation, then mark "not applicable."

1. Is easily distracted when listening to a story
2. Can stop him/herself when s/he is told to stop
3. Looks around the room when doing school work
4. Can stop him/herself from doing things too quickly
5. When working on an activity, has a hard time keeping her/his mind on it
6. Has an easy time waiting
7. Has a hard time paying attention
8. Has a hard time waiting his/her turn to talk when excited
9. Needs to be told to pay attention
10. Gets distracted when trying to pay attention in class
11. Likes to plan carefully before doing something
12. Is good at following directions
13. Has a hard time slowing down when rules say to walk

Source: Adapted from the Temperament in Middle Childhood Questionnaire. © 2004 Jennifer Simonds and Mary K. Rothbart, University of Oregon. Used with permission by NCES for ECLS-K:2011 studies
(https://nces.ed.gov/ecls/pdf/secondgrade/Spring_2013_Teacher_Ques_Child_Level.pdf)