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ORIGINAL PAPER

Social–Emotional Learning for Whom? Implications of a Universal SEL Program and Teacher Well-being for Teachers' Interactions with Students

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Abstract
Social–emotional learning interventions are intended to improve classroom dynamics and have the potential to enhance the well-being of students and their teachers. Using data drawn from an effectiveness trial of the Social Skills Improvement System SEL Edition Classwide Intervention Program (SSIS SEL CIP; Elliott and Gresham in SSIS SEL Edition Classwide Intervention Program manual, Pearson, Inc., 2017), the present quantitative study explored associations between classroom implementation of a universal SEL program, teachers' emotional well-being, and teacher–student interactions. The results from a sample of 80 first- and second-grade teachers located in three socioeconomically and geographically diverse regions of the USA indicated that implementation of the SSIS SEL CIP curriculum was positively associated with teachers' classroom organization skills at the end of the year. Findings also revealed an interaction between treatment condition and teacher emotional well-being such that control teachers with lower well-being also had lower quality classroom organization but this association did not exist for teachers in the intervention condition. Findings suggest that implementation of the SSIS SEL CIP may help to preserve positive teacher–student interactions even when teachers are reporting lower levels of emotional well-being.

Keywords Teacher–student interactions · Teacher well-being · Social–emotional learning interventions

Introduction

Universal social–emotional learning (SEL) interventions are delivered at the school or classroom level and are increasingly being implemented by teachers in elementary settings across the USA (Black, 2021; Duncan et al., 2017; Merle et al., 2022). A robust evidence base shows that many universal SEL interventions improve students' social–emotional competence (e.g., ability to identify and regulate emotions, engage in perspective-taking, make responsible decisions, etc.) and reduce emotional and conduct problems (Durlak et al., 2011; Taylor et al., 2017). Although empirical support for SEL is primarily focused on child-level outcomes (Domitrovich et al., 2016), teachers often are essential drivers of universal SEL interventions. Currently, less is known about the ways in which universal SEL interventions influence teachers' experiences at school and the dynamics of their classroom (Oberle et al., 2016; Schonert-Reichl, 2017).

Research exploring the impact of student-focused SEL programs on teachers has identified teachers' implementation of these interventions as a potential mechanism for strengthening their instructional practices and ability to engage in high quality interactions with their students (Abry et al., 2013; Morris et al., 2013). At the same time, teachers' own well-being also relates to their interactions with students (McClean et al., 2015), and there is increasing

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concern over high rates of teacher stress (Diliberti et al., 2021; Hascher & Waber, 2021; Kurtz, 2022) as well as the impact of emotional stressors on supportive, caring, and effective interactions in the classroom (Ansari et al., 2020; Bottiani et al., 2019). Thus, an open question is whether SEL programs can help *both* students and teachers by changing the ways in which they interact in the classroom. More specifically, prior theory (e.g., *prosocial classroom model*; Jennings & Greenberg, 2009) and research (e.g., Sandilos et al., 2020; Schonert-Reichl, 2017) suggest that teachers' implementation of SEL interventions may actually help to buffer against the negative influence that reduced well-being (e.g., stress and burnout) can have on their interactions with students. In the present study, we sought to further explore this phenomenon by examining the ways in which a universal SEL intervention (i.e., Social Skills Improvement System SEL Edition Classwide Intervention Program; SSIS SEL CIP; Elliott & Gresham, 2017) and teachers' self-reported well-being contributed to teacher–student interactions. We also explored whether SEL intervention implementation moderated the relation between well-being and interactions.

Teacher–Student Interactions and the Influence of SEL Interventions

High quality teacher–student interactions reflect regular exchanges between teachers and students that support students' learning and development (Penttinen et al., 2020; Pianta et al., 2016). Beneficial teacher–student interactions are those that facilitate a warm, emotionally supportive classroom climate in which the teacher is sensitive to students' needs and interests (Ferguson, 2010; Reyes et al., 2012) and incorporate strategies to bolster the classroom organization, such as proactive management of behavior and productive use of classroom learning time (Dudek et al., 2018; Woolfolk & Weinstein, 2011). In addition, the provision of instructionally supportive interactions, such as engaging in back-and-forth exchanges to provide feedback, connecting concepts to students' background knowledge, or building vocabulary, is vital in promoting classroom learning (Kazemi & Stipek, 2009; Pianta & Hamre, 2009; Stronge et al., 2011).

Teachers' implementation of universal SEL interventions has been linked to their self-reported closeness with students (Rudasill et al., 2020) as well as their observed emotional supportiveness, instructional supportiveness, and classroom organizational skills (e.g., Abry et al., 2013; Williford & Wolcott, 2015). These associations are consistent with conceptual frameworks for SEL curricula, which emphasize teaching strategies that support the cultivation of positive classroom relationships and place emphasis on strengthening of teachers' skills in this area (Durlak et al., 2011; Zins et al., 2007). Although findings regarding the influence of SEL on classroom interactions are promising, teachers' well-being (or lack thereof) is an issue that also warrants significant attention given its effect on teachers and their interactions with students.

Teacher Well-being and Teacher–Student Interactions

Well-being has been defined in a multitude of ways relating to an individual's experience of positive emotions, contentment, sense of purpose, healthy relationships, etc. (Huppert, 2009; Ruggeri et al., 2020). Given the broad nature of the term "well-being," more specific definitions have been proposed for subtypes of well-being that apply to important aspects of a person's life. One such subtype is occupational well-being, which represents an individual's positive perspective on their job and can include emotional, cognitive, and psychosomatic aspects of their functioning (van Horn et al., 2004). In the present study, we examine teachers' occupational well-being, specifically the emotional aspects of their functioning as it relates to their job, which we refer to as *emotional well-being*.

To date, research on teachers' emotional well-being has largely focused on its absence (Roberts & Kim, 2019), with large-scale surveys increasingly showing that teaching is a highly stressful occupation that leaves educators vulnerable to burnout and leaving the field (Diliberti et al., 2021; Weingarten et al., 2017). Teachers' experience with stress not only impacts their own general health (Greenberg et al., 2016; Whitaker et al., 2013), but also has a detrimental influence on the classroom climate and instructional practices, as high stress impairs motivation, memory, problem-solving skills, and overall cognitive functioning (Burt et al., 1995; Lewis et al., 2011; McDermott & Ebmeier, 2009). Furthermore, higher stress levels contribute to an individual's interpretation of events and interactions as being more negative or threatening, which can have consequences for teachers' perceptions of, and reactions to, student behaviors (Lazarus & Folkman, 1984; Lewis, 1999). Therefore, teachers' emotional well-being has potentially significant implications for their interactions with students.

Across early childhood through secondary settings, research consistently has identified links between negative indicators of teacher well-being (e.g., stress, depression, emotional exhaustion) and lower quality interactions with students (Ansari et al., 2020; Bottiani et al., 2019; McClean et al., 2015). These findings raise concern for teachers and their students; however, emerging research suggests it may be equally important to consider the influence of teachers' positive emotional experience on their instructional practices from a strengths-based perspective (Renshaw et al., 2015; Roberts & Kim, 2019). The presence of emotional well-being can be assessed by inquiring about teachers' positive

emotions and enthusiasm for the profession as well as their ability to cope with job demands (Collie et al., 2012; van Horn et al., 2004).

Notably, teachers' positive emotions toward their job have been linked to students' own emotions and classroom experiences (Banerjee et al., 2017). For example, Becker et al. (2014) examined whether teachers' emotions and instructional behaviors predicted students' emotions. They found a significant association between teachers' feelings of enjoyment (i.e., "I am happy at the moment") and students' emotions that was approximately the same magnitude as the association between teachers' instructional behaviors and students' emotions. This finding underscores the importance of teachers' positive emotions in setting the tone for the classroom learning context and climate (Schonert-Reichl, 2017) and potentially influencing teacher–student dynamics in the classroom (Oberle et al., 2016).

Conceptual Framework

Associations among teachers' interactions, well-being, and SEL is highlighted in Jennings and Greenberg's (2009) *prosocial classroom model*. This conceptual model, featuring largely bidirectional relationships, asserts that emotionally healthy teachers are more likely to engage in positive classroom interactions, which contributes to an enhanced classroom learning environment. Jennings and Greenberg also described the "burnout cascade" as a cycle in which teachers' experience with stress (lack of well-being) contributes to lower quality classroom interactions, which leads to more classroom conflict, and ultimately worsens feelings of stress. Within their model, they highlighted the role of SEL curricula as potentially supporting the social–emotional competence of teachers and their students, interrupting this burnout cascade, and returning the classroom to a prosocial space.

Building upon the mechanisms underlying the prosocial classroom model, Schonert-Reichl (2017) suggested that, when effectively implemented, SEL programming can strengthen teachers' instructional repertoire, including their understanding and enactment of social emotional competencies, making them feel more efficacious in the classroom, increasing their positive emotions toward teaching, and ultimately improving their interactions with students (Domitrovich et al., 2016; Rimm-Kaufman & Sawyer, 2004; Schonert-Reichl, 2017).

SEL Intervention as a Moderator

Taken together, extant literature indicates that SEL interventions and teacher well-being have the potential to influence teachers' interactions with students. Even though student-focused SEL interventions do not directly address all aspects of teachers' work-related stress, teachers' knowledge of SEL may still provide teachers with tools and strategies that enhance classroom interactions (Schonert-Reichl, 2017), potentially buffering against reduced well-being in the short term and interrupting the burnout cascade in the long term. There is some emerging empirical research that suggests a potential moderating influence of SEL interventions. Specifically, using extant data from the Head Start CARES project (Morris et al., 2013), a randomized controlled trial (RCT) of three SEL interventions (i.e., Tools of the Mind, Promoting Alternative Thinking Strategies [PATHS], and Incredible Years) in preschool settings, Sandilos et al. (2020) found that greater emotional exhaustion at baseline was associated with lower quality interactions over the course of a year for teachers in the study's control condition. In contrast, greater emotional exhaustion at baseline was not associated with declines in interaction quality for teachers who participated in an SEL intervention. These findings suggest that SEL intervention implementation may have supported teachers in their interactions with students despite feelings of burnout; however, these results have not been replicated to date in other studies of early childhood or elementary classrooms.

The Present Study

The goal of the present study was to examine whether implementation of a universal SEL intervention (SSIS SEL CIP; Elliott & Gresham, 2017) and teachers' initial self-reported well-being were associated with subsequent teacher–student interactions. While closely informed by the prosocial classroom model (Jennings & Greenberg, 2009), the present study differs from this framework in that relationships among variables are tested in a unidirectional manner, and SEL intervention is conceptualized as having a direct influence on teacher–student interactions as well as a moderating effect on the relation between teacher well-being and teacher–student interactions (see Fig. 1).

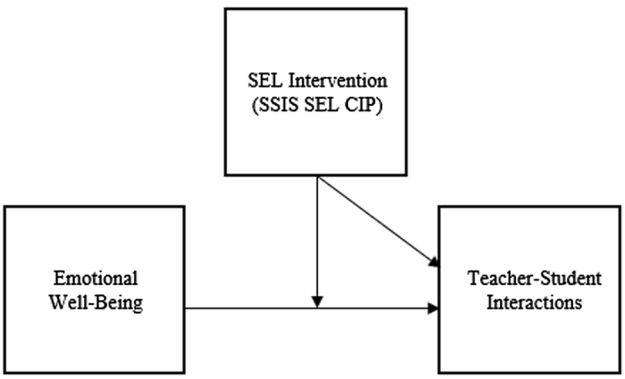

Fig. 1 Analytic model predicting teacher–student interactions

Using a sample of elementary teachers participating in an effectiveness trial of the SSIS SEL CIP, we focus on first and second grade because early elementary school represents a significant developmental period in which behavioral expectations increase and students' self-regulation skills start to solidify (Murray et al., 2018). During this period, teachers can serve as a pivotal "social referent" for students, modeling prosocial behaviors through their classroom interactions (Hughes et al., 2001, p. 289). Also, the elementary grades are the context in which SEL interventions have the strongest evidence base (Ross & Tolan, 2018), making it a particularly apt classroom population in which to explore the following research questions (RQ):

RQ1: Does teachers' implementation of a universal SEL intervention in first and second grade classrooms positively change their subsequent teacher–student interactions relative to teachers who do not implement the program?
RQ 2: Is teachers' (baseline) emotional well-being positively associated with their interactions with students?
RQ 3: Does universal SEL implementation moderate the relationship between teachers' initial (baseline) emotional well-being and teacher–student interactions (i.e., emotional support, classroom organization, and instructional support)?

Given the importance of replication in the educational sciences to build generalizable evidence (Makel & Plucker, 2014), this study builds on the findings of Sandilos et al. (2020) in several ways. First, it examines the associations between SEL implementation, teacher–student interactions, and teacher well-being within a different developmental context and with an intervention program (SSIS SEL CIP) for which there is no published literature examining these relations. Second, the present sample of teachers participated in an effectiveness trial, which strives to test an intervention when it is implemented in a manner that approximates real-world conditions (e.g., typical implementation practices in schools without additional support provided by a research team; Chhin et al., 2018). This allowed us to examine whether SEL interventions still contribute to teacher–student interactions, and buffer against reduced well-being, under less controlled conditions (i.e., schools choosing to train and implement the intervention based on their own typical procedures) than a more traditional RCT with a high-level of researcher involvement in training. Thus, findings have more widespread implications given that schools are typically taking up interventions independently. Third, as opposed to examining the absence of well-being (e.g., stress and burnout), we gathered data on the presence of emotional well-being as it relates to the teacher's profession in an effort to contribute to a growing body of literature examining teachers' occupational well-being from a strengths-based perspective (Roberts & Kim, 2019). Understanding the potential of universal SEL interventions for impacting the classroom environment in a real-world implementation setting, including teachers and their ability to engage productively with students, will serve as critical information for supporting teachers and ultimately enhancing student outcomes.

Method

Participants

Study participants consisted of 40 first-grade and 40 second-grade teachers ($N = 80$) participating in a national effectiveness trial of the SSIS SEL CIP. Most teachers were female (78%) and White/Caucasian (78%). On average, teachers had 14 years of teaching experience (Min = 1 year, Max = 35 years). The majority had a bachelor's degree (69%) and approximately one-third had a master's degree (31%). Nearly all teachers were certified in regular education (99%) with some teachers also having certifications for special education (8%), reading specialist (7%), or another credential (14%). Teachers were employed in 13 schools within three states in the West North Central, East North Central, and South Atlantic regions of the USA. The schools were socioeconomically and racially/ethnically diverse, and they were situated in urban, rural, and suburban locales. Twelve schools qualified for Title I funding. Across the schools, an average of 57% of students qualified for free or reduced price lunch (FRPL) and approximately 51% identified as Black or Hispanic. On average, schools enrolled approximately 527 students (Min = 80 students, Max = 756 students).

Measures

Measures collected during the fall and spring of the 2018–2019 school year included observations of teachers' interactions with students using the Classroom Assessment Scoring System (CLASS K-3; Pianta et al., 2008) and a self-report questionnaire that inquired about teachers' emotional state as it related to their profession.

Teacher–Student Interactions

The CLASS K-3 (Pianta et al., 2008) is a structured observation system through which trained observers rate teachers' interactions with students on a 7-point scale ranging from *Low* (1–2), *Middle* (3–5), to *High* (6–7). In a single observation, referred to as a "cycle," teachers are rated on ten dimensions (Positive Climate, Negative Climate,

Teacher Sensitivity, Regard for Student Perspectives, Behavior Management, Productivity, Instructional Learning Formats, Concept Development, Quality of Feedback, and Language Modeling). Each CLASS observation cycle consists of 20 min of observation and 10 min of coding. Coded dimensions are then aggregated across cycles to produce three domain scores: Emotional Support (i.e., teachers' warmth and sensitivity to student needs), Classroom Organization (i.e., teachers' facilitation of a productive classroom, use of effective behavior management and varied learning modalities), and Instructional Support (i.e., teachers' use of strategies that develop concepts and cultivate higher-order thinking and language skills).

In the present study, six CLASS K-3 observers completed observations. The observers were not members of the schools but instead were independent observers who had already obtained their CLASS certification. Prior to conducting live classroom observation, however, observers completed a refresher course with a certified CLASS trainer and had to achieve 80% accuracy on a reliability exercise. Consistent with recommendations from the CLASS authors (Pianta et al., 2008), two observation cycles were completed in each classroom. Internal consistency in the current sample was high for the three domains across the two time points (Emotional State fall $\alpha = 0.85$, spring $\alpha = 0.86$; Classroom Organization fall $\alpha = 0.85$, spring $\alpha = 0.86$; Instructional Support fall $\alpha = 0.91$, spring $\alpha = 0.88$). In addition, at least 20% of classrooms were double-coded by two observers at each time point (fall = 21%, spring = 23%), and inter-rater agreement within-1-point exceeded the authors' recommended criterion (80%; Pianta et al., 2008), ranging from 86 to 96% agreement across CLASS domains at baseline and spring data collection time points.

Emotional Well-Being

Teachers' emotional well-being was measured through an "emotional state" subscale that was developed as part of a larger teacher-report questionnaire (Sandilos & DiPerna, 2022). The emotional state subscale consists of four items rated on a 5-point scale (1-*Never*, 2-*Seldom*, 3-*Sometimes*, 4-*Often*, 5-*Almost Always*). Items use a positive framing to inquire about teachers' feelings toward their job, with higher scores reflecting an improved emotional state (i.e., I feel happy when I prepare for the school day; I feel I am able to keep up with job demands; I feel I have a healthy work-life balance; I feel I am able to cope with job stressors). The four items are averaged to generate a score for emotional well-being. In the present study, the subscale exhibited strong internal consistency at fall ($\alpha = 0.92$) and spring ($\alpha = 0.87$) time points. The structural validity of the emotional state subscale was previously examined using a separate sample of K-12 teachers prior to its use in the present study (Sandilos & DiPerna, 2022).

Teacher and School Demographics

Teacher demographic data (gender, years of experience, degree/certification, etc.) were collected at baseline. School demographic information was gathered through publicly available data from the National Center for Education Statistics (NCES, 2018–2019) Common Core of Data.

Procedures

The present study focused on the first year of data from a national effectiveness trial of the SSIS SEL CIP because the second year of the data collection was interrupted by the COVID-19 pandemic. We conducted site recruitment for the study through project-specific social media (website, Facebook page), invitations posted on professional listservs for school-based mental health professionals, and other communications via professional networks. After a school site expressed interest in participation, we engaged in individual communications to answer questions and facilitate enrollment. After enrolling the school in the study, all teachers across first and second grade were invited to participate in the study; 98% of teachers provided active consent to participate. Elementary schools were randomized into control and intervention conditions. Within a school, either first grade or second grade was randomized to the intervention condition (implementation of the SSIS SEL CIP) with the other grade serving as the control condition (business-as-usual). In total, 41 classrooms were assigned to the intervention condition (19 in first grade and 22 in second grade). This randomization approach was selected so that teachers could collaborate on the intervention within grade level, if preferred. Baseline data (Time 1) were collected in fall 2018. Each teacher completed an online questionnaire, and data collectors conducted a 1 hour in-person CLASS observation to capture classroom interactions. Observations were not conducted during explicit instruction of intervention lessons in order to capture generalization of quality interactions beyond the structured intervention. Teachers assigned to the intervention condition then implemented the SSIS SEL CIP between winter and spring 2019. A second CLASS observation and teacher questionnaire were collected at post-implementation (Time 2). Teachers received payment for time spent completing data collection activities for the larger trial.

SSIS SEL Intervention Implementation

The primary goal of the SSIS SEL CIP is to teach students core social–emotional skills that will improve social

classroom behaviors and ultimately enhance student engagement and learning. The development of SSIS SEL CIP was informed by theories of social and behavioral development, including operant learning (Skinner, 1953), social learning (Bandura, 1977), and cognitive-behavioral theories as they relate to social skills training (Weissberg, 1985). As a result, the program incorporates observation of behaviors "modeled" by others, in combination with reinforcement and feedback, and it emphasizes strategies for problem-solving and self-regulation. The program includes detailed lesson plans, brief video examples, and student activities to help teach key skills. SEL skills are taught through explicit instruction, modeling, role-play, and practice activities. The program included 10 core units and 13 supplemental advanced units at the time of this study, with each unit including three lessons that take approximately 25–30 min to complete (per lesson). Overall, the core program requires approximately 12–15 hours of instructional time to implement and covers the following skills: *Listen to Others, Say Please and Thank You, Follow the Rules, Pay Attention to Your Work, Ask for Help, Take Turns When You Talk, Get Along with Others, Stay Calm with Others, Do the Right Thing,* and *Do Nice Things for Others.*

The SSIS SEL CIP does not require formal training. It includes scripted lesson plans and a manual detailing an overview of program implementation. When adopting SSIS SEL CIP in the context of the effectiveness trial, schools had the freedom to select their typical approach to implementing new curricular initiatives. As such, to reflect implementation in a real-world setting, participating schools were able to select their own model for program training and implementation. Of the 41 teachers assigned to the intervention condition, approximately 80% of teachers reported that their schools' approach to training consisted of individual teachers reviewing program materials and preparing their own implementation schedule, though a few teachers (13%) reported that their school offered formal professional development sessions.

To monitor aspects of implementation, trained research staff conducted periodic in-person observations of lesson delivery, and teachers completed brief weekly surveys. Both observers and teachers rated the level of lesson implementation on a scale from *Not Implemented* (1) to *Completely Implemented* (5), and their reports across observations and surveys were similar (observer $M = 3.83$, $SD = 0.59$; teacher $M = 3.86$, $SD = 0.46$). Similarly, observers indicated that teachers completed an average of 75% of the lesson steps ($SD = 14\%$) across observations, and teachers reported teaching an average of 24 out of 30 total lessons ($SD = 8$). Consistent with the goal of the effectiveness trial, which was testing the SSIS SEL CIP under typical school implementation conditions without the influence of researcher oversight, field staff did not attempt to change teachers' lesson implementation in any way.

Data Analyses

All analyses were conducted using SPSS version 27 and M*plus*8. Of the 80 teachers who participated in the first year of the study, all teachers had complete CLASS, emotional well-being, and demographic data at baseline as well as complete CLASS data at post-intervention. At baseline, there were no significant differences between control and intervention teachers in their CLASS domain scores or emotional well-being scores (see Table 1).

To assess change in teacher–student interactions over the course of the year, the Time 1 (baseline) CLASS domain score was entered into the model as a predictor and the corresponding Time 2 (spring) CLASS domain score was used as the outcome in each model. To examine main effects and interactions, regression models included treatment condition as a dichotomous predictor (Intervention = 1, Control = 0) and teacher-reported emotional well-being as a continuous predictor as well as the interaction between the two variables. If a statistically significant interaction was identified, it was further examined to determine the nature of the interaction and the significance of the simple slopes (Preacher et al., 2006).

Each regression model also contained the following categorical and continuous covariates: Grade 1 (1, 0), female gender (1, 0), Master's degree or higher (1, 0), years of teaching experience, percentage of students who receive FRPL in a school, and total school enrollment. To account for the nesting of teachers within schools, we used the M*plus* TYPE = COMPLEX option (Muthén & Muthén, 1998–2010), which provides scaled standard errors robust

Table 1 Descriptive Statistics for Primary Study Variables by Treatment Condition

	Intervention ($n = 41$)		Control ($n = 39$)	
	Pretest	Posttest	Pretest	Posttest
	M (*SD*)	*M* (*SD*)	*M* (*SD*)	*M* (*SD*)
Teacher–student interactions				
Emotional support	5.30 (1.06)	5.17 (0.96)	5.34 (0.98)	4.75 (0.96)
Classroom organization	5.32 (1.07)	5.43 (0.90)	5.37 (0.91)	5.03 (1.02)
Instructional support	2.20 (1.03)	2.57 (0.96)	2.44 (1.03)	2.16 (0.89)
Teacher well-being				
Emotional well-being	3.64 (0.84)	–	3.57 (0.89)	–

to non-independence and non-normality. This approach was selected instead of multi-level modeling given the small number of school-level clusters (i.e., 13 schools; McNeish et al., 2017).

Results

At fall and spring time points, teachers' CLASS scores ranged widely (Table 1) with *low* to *high* teacher–child interaction quality observed across domains. On average, teachers received scores falling in the upper-middle range on Emotional Support and Classroom Organization and scores falling in the lower range on Instructional Support. The lower Instructional Support scores are consistent with other studies using the CLASS in early childhood and elementary classrooms (e.g., NCQTL, 2013; Rimm-Kaufman et al., 2009). Teachers' emotional well-being scores also demonstrated variability, with average scores indicating that teachers *sometimes* or *often* felt positive emotions about their job (Table 1).

We estimated three separate regression models with baseline emotional well-being and intervention condition as the primary predictors and each spring (Time 2) CLASS domain (Emotional Support, Classroom Organization, and Instructional Support) as the outcome variable (Table 2). All models controlled for the corresponding baseline CLASS domain score in order to estimate change in CLASS scores over the course of the year. Findings indicated that main effects of intervention condition (RQ 1) and emotional well-being (RQ 2), and the interaction between the two variables (RQ 3) were not statistically significant predictors of the Emotional Support or Instructional Support domains of the CLASS.

Findings revealed that intervention condition ($\beta = 0.90$, $p < 0.01$) and teachers' baseline emotional well-being ($\beta = 0.24$, $p < 0.01$) were significantly and positively predictive of the Classroom Organization domain of the CLASS (RQs 1 & 2). In addition, there was a significant interaction between intervention condition and emotional well-being predicting Classroom Organization ($\beta = -0.71$, $p < 0.05$; RQ 3). An examination of simple slopes revealed that teachers' emotional well-being was significantly associated with teachers' Classroom Organization only in the control condition ($t = 2.68$, $p < 0.01$). Specifically, control teachers who provided lower ratings of their emotional well-being (− 1 SD below the mean) at the start of the school year were observed as having lower Classroom Organization scores at post-intervention. In contrast, higher emotional well-being (+ 1 SD above the mean) at baseline was associated with higher Classroom Organization scores at post-intervention for control teachers. This finding was not present for the intervention condition; teachers implementing the SSIS SEL CIP with similarly low ratings of emotional well-being (− 1 SD below the mean) did not demonstrate the same decline in Classroom Organization scores (see Fig. 2 for interaction graph).

Discussion

This study explored the influence of a universal SEL intervention, the SSIS SEL CIP, and teachers' well-being on teacher–student interactions as well as the moderating effect of treatment condition and baseline teacher emotional

Table 2 Regression models examining treatment condition and teachers' emotional well-being to predict teacher–student interaction quality

Predictors	Emotional support		Classroom organization		Instructional support	
	β	SE	*β*	SE	*β*	SE
Teacher–student interactions (baseline)	0.50***	0.11	0.36*	0.16	0.47***	0.08
SSIS SEL CIP	0.40	0.53	0.90**	0.33	0.20	0.46
Emotional well-being	0.21	0.14	0.24**	0.08	0.08	0.13
Emotional well-being × SSIS	−0.19	0.55	−0.71*	0.31	−0.09	0.49
Grade 1	0.08	0.08	0.02	0.09	0.00	0.06
Gender (Female)	−0.01	0.07	−0.02	0.08	−0.08	0.07
Years of experience	0.20***	0.05	0.30***	0.09	0.07	0.11
Masters plus	0.04	0.05	−0.13*	0.06	−0.13	0.11
School % FRPL	−0.02	0.08	−0.19*	0.09	0.00	0.14
School enrollment total	−0.17	0.11	−0.02	0.07	0.19	0.14

Baseline teacher–student interaction predictor corresponds with the particular CLASS outcome. Models account for nesting of teachers within schools using TYPE = COMPLEX. Standardized estimates are reported. SSIS = SSIS SEL CIP intervention; FRPL = Free or reduced-price lunch

*$p < .05$. **$p < .01$. ***$p < .001$

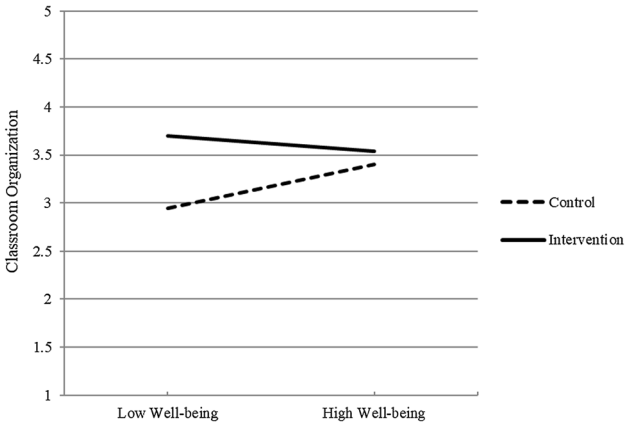

Fig. 2 Interaction of treatment condition and teachers' emotional well-being at time 1 on classroom organization at time 2. *Note* Slope for control group is statistically significant ($p < .05$)

well-being to predict teacher–student interactions at post-intervention. Examination of main effects revealed that participation in the SSIS SEL CIP intervention condition was positively predictive of teachers' classroom organization skills (i.e., proactive management of behavior, establishment of routines, and use of varied learning materials) after implementation. Findings also indicated that teachers' emotional well-being as it pertained to their job was positively associated with their classroom organization skills. A significant interaction between treatment condition and well-being revealed that well-being was not associated with intervention teachers' classroom organization skills, but control teachers with lower baseline well-being also had lower classroom organization at post-intervention. There were no significant main effects or interactions effects for models predicting Emotional Support and Instructional Support.

The main effect of SEL intervention on Classroom Organization is consistent with previous research identifying relations between SEL curricula and teacher–student interactions (e.g., Abry et al., 2013; Baroody et al., 2014; Morris et al., 2013; Rudasill et al., 2020) and aligns with the content of the SSIS SEL CIP. Specifically, the program emphasizes positive student behaviors such as following classroom rules, paying attention to schoolwork, and staying calm with others through the use of direct instruction, modeling, role plays, and other activities (Elliott & Gresham, 2017). Providing students with direct instruction in positive and productive classroom behaviors is an effective and proactive way to improve classroom management (Horner & Sugai, 2015). Jones et al. (2014) asserted that SEL programming, by definition, embeds structures that directly support teachers' ability to manage their classrooms through an emphasis on key student behaviors such as listening attentively, following directions, and addressing conflicts. As such, this finding provides support for the potential benefit of the SSIS SEL CIP in supporting teachers' classroom management skills and extends current literature by identifying this effect within routine implementation conditions (i.e., outside the context of a highly controlled RCT).

The positive influence of teachers' emotional well-being on their Classroom Organization closely aligns with prior research and theories that expound upon the relation between stress and classroom management (e.g., Herman et al., 2020; McLean et al., 2015). For example, a guiding principle underlying the prosocial classroom model is the notion that teachers' emotional functioning directly impacts their ability to manage the classroom environment and student behavior (Jennings & Greenberg, 2009; Schonert-Reichl, 2017). Similarly, in their conceptualization of educator stress, Herman et al. (2020) describe stress as particularly impactful on teachers' ability to manage student behavior in their classrooms. Prior research suggests that when teachers experience negative emotions and stress, they may interpret interactions as negative or threatening, while struggling to problem-solve and regulate their own emotions (Lazarus & Folkman, 1984; Lewis et al., 2011; Lewis, 1999; Schonert-Reichl, 2017). Conversely, teachers who experience more positive emotions likely have greater access to the emotional and cognitive resources needed to effectively manage their classrooms. Lewis et al. (2011) noted that teachers with greater coping skills, a potential precursor to experiencing emotional well-being, tend to engage in stronger communication and de-escalation techniques when managing student behavior.

With regard to the moderating effect of SEL intervention, analyses revealed that teachers in the control condition who had lower emotional well-being at the start of the school year had significantly lower observed end-of-year Classroom Organization scores than control teachers with a greater sense of emotional well-being (Fig. 2); yet, this finding was not present for intervention teachers with lower well-being. For intervention teachers, the findings suggest that training and participation in the SSIS SEL CIP may have provided important supports to teachers experiencing reduced well-being, so that they could continue to engage in positive interactions with students. More specifically, results signal that the SSIS SEL CIP may have provided teachers and students with additional tools to manage behaviors and interactions, preventing the start of the burnout cascade by simultaneously reducing negative student behaviors and also readily equipping teachers with strategies to address problematic behaviors when they arise. This interaction effect also aligns with prior research in preschool classrooms (i.e., Sandilos et al., 2020) which found that participation in SEL interventions attenuated the negative association between teachers' emotional exhaustion and teacher–student interactions, specifically for their instructionally supportive interactions

(i.e., ability to cultivate higher-order thinking skills, extend student responses, and facilitate language development).

In contrast, the negative influence of lower emotional well-being on Classroom Organization in the control condition likely reflects elements of a continued burnout cascade (Jennings & Greenberg, 2009). Specifically, teachers with reduced emotional resources may struggle to engage effectively with students, and, as a result, students are more likely to exhibit off-task and problematic behaviors, which in turn contributes to more negative interactions related to Classroom Organization. It is noteworthy that control teachers with greater emotional well-being exhibited Classroom Organization behaviors that were similar to those of the intervention teachers; a finding that further underscores the essential need to support teachers' well-being so that they can engage in effective, prosocial practices in their classrooms—whether that support be through SEL or some other mechanism.

Somewhat surprising were the nonsignificant findings for models predicting Emotional Support and Instructional Support. Given the content of the SSIS SEL CIP closely aligned with the Classroom Organization domain, the null findings for treatment condition may relate to less alignment between the curriculum's focal areas and the teacher–student interactions associated with the Emotional Support and Instructional Support domains. Core lessons and features of the SSIS SEL CIP relate most closely to behaviors that model being a good classroom citizen: listening, attending, following the rules, being polite, etc. (Elliott & Gresham, 2017). Other SEL programs appear to place a stronger emphasis on emotion recognition, management, and expression; practices that may more directly influence interactions related to emotional supportiveness (e.g., Domitrovich et al., 2007; McClelland et al., 2017). Our findings diverge from those of Sandilos et al. (2020) who found that SEL intervention buffered against the influence of burnout on Instructional Support in preschool classrooms. Given that the current study took place in elementary classrooms, one potential explanation is that content expertise, rather than SEL-based practices, has a greater influence on Instructional Support as grade-level demands increase. Additionally, the SSIS SEL CIP is an explicit skills program that is taught through standalone lessons, and CLASS observations were not conducted during these lessons. Although the goal of the program is for practices to generalize to other instructional time, it is possible that many implementing teachers had not reached the point of seamlessly integrating SSIS SEL CIP practices into their academic instruction, specifically their instructional supportiveness, outside of these lessons.

Reasons for the lack of association between emotional well-being and Emotional and Instructional Support may relate to general trends in teachers' scores on these domains. Instructional Support tends to be the lowest scoring domain and least stable over time (NCQTL, 2013; Wang et al., 2021). Although prior research has linked job burnout to lower quality Instructional Support (Ansari et al., 2020; Sandilos et al., 2020), likely given the influence of significant stress on cognitive capacity, improvements in this CLASS domain may require more than just positive feelings about the profession, such as increased training in instructionally supportive practices (Hamre et al., 2012). In contrast, prior research in early childhood settings indicates that teachers tend to score highest, and show the least variability, in Emotional Support (NCQTL, 2013; Thorpe et al., 2020), which may similarly limit its susceptibility to factors such as teachers' feelings of well-being.

Limitation and Future Directions

There are several study limitations that warrant mention. First, this study included data from a modestly sized sample of elementary teachers ($N = 80$) who were largely white (78%) and female (78%). The limited gender and racial diversity in the sample mirrored the US teaching population (NCES, 2021). However, the findings are still promising in that they reflect a phenomenon that has also been identified with larger, more diverse samples of early childhood educators (i.e., Sandilos et al., 2020).

A second limitation relates to the nature of the data collected. Given that the data were entirely quantitative, we can only speculate on the specific mechanisms behind the significant relations and interactions, and lack thereof, among treatment condition, emotional well-being, and observed teacher–student interaction domains. Additional qualitative data collection methods (e.g., interviews and focus groups) would potentially provide valuable insights regarding the ways in which SEL interventions serve as a support to teachers and buffer against reduced emotional well-being. An important next step in this work is to engage in mixed methods research to better understand the mechanisms behind this interaction.

A third limitation pertains to the measurement of teacher well-being. Extant literature indicates that well-being is an exceedingly broad construct that needs greater refinement (Ruggeri et al., 2020), particularly as it relates to teachers (Hascher & Waber, 2021). The present study sought to measure "emotional well-being" through items inquiring about teachers' emotions toward their job (e.g., I feel happy when I prepare for the school day); however, this is one small component of a much larger construct that manifests in a variety of ways, both personally and professionally, for educators, and it requires further study from a strengths-based perspective.

A final limitation relates to unmeasured, but potentially relevant school-level variables. Our analyses included some

important school-level covariates (i.e., total enrollment, % receiving free or reduced price lunch); however, given the small number of schools ($N = 13$), this study did not include other school-level variables that may be associated with teachers' effectiveness in the classroom (e.g., school climate, supportive leadership, access to resources; Roberts et al., 2017; Zinsser et al., 2016) using a multi-level modeling approach. Critical is the continued exploration of potential moderators and mediators with larger samples of teachers and schools that help to explain relations among SEL interventions, teachers' well-being, and teachers' interactions with students.

Conclusions

Although this study focuses on one sample of teachers and one particular universal SEL program, the findings have potential implications for research and practice. Given the growing prevalence of SEL interventions across US schools (Black, 2021; Greenberg et al., 2017) and widespread concerns about teacher stress (Diliberti et al., 2021; Kurtz, 2022), SEL curricula may serve as a resource that can benefit aspects of teachers' interactions with their students in the short term and possibly interrupt the burnout cascade in the long term. Future work should seek to examine whether multi-year implementation of SEL curricula ultimately impacts teacher well-being through an investigation of their emotions over time and their generalization of SEL practices to different aspects of their instruction. Additionally, an emerging body of work has paired SEL curricula with mental health supports for teachers (e.g., Morris et al., 2013). Research examining this approach, while exploring unique contributions of these various intervention components to teacher and student outcomes, is a valuable next step in intervention science focused on well-being, social–emotional competence, and the cultivation of a prosocial classroom climate.

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