

Assessing Teachers' Beliefs About Social and Emotional Learning

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Abstract

Teachers are the primary implementers of social and emotional learning (SEL) programs. Their beliefs about SEL likely influence program delivery, evaluation, and outcomes. A simple tool for measuring these beliefs could be used by school administrators to determine school readiness for SEL programming and by researchers to better understand teacher variables that impact implementation fidelity and program outcomes. In a two-phase study, we developed and then validated a parsimonious measure of teachers' beliefs about SEL. In Phase 1, survey items were administered to 935 teachers and subjected to both exploratory and confirmatory factor analysis, resulting in three reliable scales pertaining to teachers' *comfort* with teaching SEL, *commitment* to learning about SEL, and perceptions about whether their school *culture* supports SEL. Phase 2 provided evidence for the concurrent and predictive validity of the scales with a subsample of teachers implementing an SEL program as part of a randomized controlled trial. The discussion focuses on the value of measuring teachers' beliefs about SEL from both researcher and practitioner perspectives.

Keywords

social and emotional learning (SEL), school/teacher effectiveness, teacher beliefs, teacher assessment

Recent decades have marked a subtle shift in the focus of schooling. Traditionally, schools have focused on academic instruction: language arts, math, science, and social studies. However, efforts to educate the “whole child” through social and emotional learning (SEL) have proven critical to improving students' physical and mental health as well as their academic achievement (Durlak, Weissberg, Dymnicki, Taylor, & Schellinger, 2011). SEL refers to a process for developing the skills and competencies related to recognizing and managing emotions, developing care and concern for others, establishing positive relationships, making responsible decisions, and handling challenging situations constructively (Zins, Weissberg, Wang, & Walberg, 2004). The skills and competencies subsumed within SEL provide a foundation for better adjustment and academic performance, as reflected in greater engagement in positive social behaviors; fewer behavior problems; less stress, anxiety, and depression; and improved grades and test

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scores (Brackett, Rivers, Reyes, & Salovey, in press; Durlak et al., 2011; Greenberg et al., 2003). Educators have become motivated to incorporate SEL practices into their work, and investigators and policymakers alike seek to study their effectiveness in impacting student outcomes.

Evidence-based SEL programs have been integrated into the curricula of many schools (e.g., Brackett et al., in press; Greenberg, Domitrovich, & Bumbarger, 2001), and SEL implementation guidelines and learning standards are being developed in the United States and abroad (<http://www.casel.org/standards/learning.php>). As the field of SEL expands, it is critical to identify the contexts within which programs can have the greatest impact. Several variables have emerged as critical to effective implementation, with teachers being one crucial feature (Graczyk, Domitrovich, Small, & Zins, 2006).

Because teachers are the primary deliverers of SEL programming, their attitudes about and support for SEL can affect the adoption, sustainability, and impact of such programs (Bowden, Lanning, Pippin, & Tanner, 2003; Gingiss, Gottlieb, & Brink, 1994; Parcel, O'Hara-Tompkins, Harrist, & Basen-Engquist, 1995). Teacher beliefs are key indicators of their perceptions and judgments, which, in turn, affect their teaching practices (Pajares, 1992).

Foremost, teacher confidence and animation during program delivery are associated with adherence to a program's protocol (Elliott, 1988; Ringwalt et al., 2003; Sobol, Rohrbach, Dent, & Gleason, 1989) and classroom management during lessons (Kress & Elias, 2006). In general, teachers are more likely to continue using a program when they feel comfortable with and enthusiastic about teaching it (Rohrbach, Graham, & Hansen, 1993). To illustrate, teacher confidence has been linked to teacher attitudes regarding both the importance of and the difficulty associated with implementing innovative programs (Guskey, 1988).

A second variable that affects SEL program effectiveness is teacher commitment. Teachers must be committed to developing their ability to integrate SEL into their classrooms vis-à-vis professional development. Professional development increases significantly the likelihood of implementing a new school program (McCormick, Steckler, & McLeroy, 1995). In fact, a commitment to SEL professional development from all stakeholders in the school, including the endorsement of a shared vision by school staff and administrators, is necessary for programmatic success (Brackett et al., 2009; Devaney, O'Brien, Resnik, Keister, & Weissberg, 2006). Teachers' commitment to learning about SEL likely influences their ability both to implement SEL programming and to model the skills it promotes in children.

A third factor that can affect teachers' program adherence is their belief about the importance of SEL for student success (Buchanan, Gueldner, Tran, & Merrell, 2009). Among the many barriers to students' academic difficulties is acknowledging the crucial role of SEL (Adalbjarnardottir & Selman, 1997; Ragozzino, Resnik, Utne-O'Brien, & Weissberg, 2003). Teachers who consider the development of students' social and emotional competencies to be as important as subjects such as English language arts and math are likely to devote time to integrating SEL into their daily practices (Pajares, 1992).

Finally, the extent to which teachers feel that their school culture supports SEL programming may influence the impact of that programming. Leadership by school principals, a key component of school culture (Hallinger & Heck, 1996; Patti & Tobin, 2006), affects implementation at the time of a program's adoption and continues to affect program sustainability over time (Fullan, Miles, & Taylor, 1980). In fact, intervention effects are the strongest when principal support and implementation quality are high (Kam, Greenberg, & Walls, 2003; Ransford, Greenberg, Domitrovich, Small, & Jacobson, 2009).

In summary, teachers have varying beliefs that may moderate the extent to which an SEL program is delivered as intended by program developers and has the intended impact on students (see Durlak & DuPre, 2008). Yet, there are few published assessment tools measuring teachers' beliefs about SEL. After a thorough review of the literature, five studies were identified that

mentioned assessing teachers' beliefs about SEL. Four of the existing measures made inferences about teachers' SEL beliefs, for example, by assessing the following: how teachers apply SEL strategies in the classroom as part of program implementation (Hussey & Flannery, 2007), what skills and abilities they believe are important for students to learn (Kowalski, Pretti-Frontczak, & Johnson, 2001; Lane, Pierson, & Givner, 2003), or what they consider to be essential priorities in education (Bunting, 1984). The fifth study published a questionnaire designed to assess teachers' attitudes about one specific SEL intervention (Schultz et al., 2010).

Our goal was to develop and gather preliminary evidence for the psychometric properties of a scale assessing different components of teachers' beliefs about SEL in general, with the idea that responses on this scale may affect program delivery and outcomes for any SEL program. The creation of a parsimonious scale that taps into the areas of primary interest is a service not only to SEL program developers and researchers but also to school administrators who want to implement these programs in their schools. For the field, the tool could gauge both teacher preparedness for and openness toward implementing evidence-based SEL programs. For example, school leaders might use the tool to assess their schools' readiness for SEL programming (e.g., "How many of my teachers are comfortable with teaching SEL?"), and investigators might use it to examine the extent to which teachers' beliefs predict or moderate the quality of SEL program implementation, affect the impact of an intervention program on student outcomes, or both.

We developed the scale as part of a longitudinal, randomized controlled trial (RCT) testing the impact of an evidence-based SEL program called *The RULER Approach* ("RULER"; Brackett et al., 2011). RULER integrates into core subject areas like English language arts and teaches children how to *recognize* emotions, *understand* their causes and consequences, *label* emotions, *express* them appropriately, and *regulate* them effectively (the "RULER" skills). The premise behind RULER, like other SEL programs, is that formal SEL instruction is necessary to build relationships, promote healthy choices, prevent problematic behavior, and increase academic achievement (Rivers & Brackett, 2011).

In a two-phase study, we developed and then validated scores on a parsimonious set of scales that assess teachers' beliefs about SEL. Phase 1 involved item development and validity evidence based on internal structure using both exploratory and confirmatory analyses of the original item pool. Using a sample of teachers who were part of the RCT of RULER, Phase 2 focused on validating the scales with measures related to teacher effectiveness (e.g., adaptive efficacy, confidence in teaching RULER, burnout), support (e.g., general administrator support and principal support for RULER program implementation), and implementation quality (e.g., attitudes about RULER programming, student enjoyment).

Phase I: Item Development and Validity Evidence Based on Internal Structure

Method

Participants. Participants were teachers ($N = 935$, 90% women) who attended an SEL workshop sponsored by the authors' laboratory. The workshop was offered to the teachers of 62 schools within a Catholic district in the New York area who was participating in an RCT of RULER. The majority of the teachers (94%) were laypeople (i.e., not ordained as nuns or priests). Nine percent of the teachers taught prekindergarten, 51% taught lower elementary (kindergarten to fourth grade), and 40% taught upper elementary/middle school (fifth to eighth grade). Teachers had the following years of experience: 0-2 years = 10.7%; 3-5 years = 12.8%; 6-10 years = 20.4%; 11+ years = 53%. Roughly 90% of the teachers had earned a bachelor's degree or higher. Of these, 29% held master's degrees, and 1% held doctorates. The remaining 10% had earned an

associate's degree or high school diploma. (The education levels of the teachers in our sample were slightly lower than national samples of teachers in public education [U.S. Department of Education, 2011].) Data on race and ethnicity were not collected from individual participants; however, based on information gathered from the district, 82% were White, 8% were African American, 7% were Hispanic, and 3% other. The racial and ethnic composition of teachers in this sample resembled racial and ethnic breakdowns provided in U.S. census data (U.S. Census Bureau, 2011). School-level demographics obtained included the following: percentage of minority students ($M = 66.11$, $SD = 32.50$), total number of students (pre-K to grade 8) within a school ($M = 326.47$, $SD = 96.95$), student-to-teacher ratio ($M = 24.48$ to 1, $SD = 3.76$), poverty status, and reading and math achievement status. Poverty status was reflected in the school's E-rate percentage, which refers to the discount on telecommunications services, such as access to the internet that the federal government provides to lower-income schools. The E-rate discount percentage ranged from 0% to 90%, with an average of 56.29 ($SD = 26.99$). Reading and math achievement scores refers to the percentage of students with above-average scores (levels 3 and 4) on the TerraNova Achievement Test (CTB/McGraw-Hill, 2002): $M = 71.87$ ($SD = 16.04$) and $M = 78.32$ ($SD = 18.05$) in reading and in mathematics, respectively.

Procedure

Item development. To develop survey items, the authors reviewed several key theoretical and research publications on factors affecting implementation of SEL programming (Elias, Bruene-Butler, Blum, & Schuyler, 2000) and of school-based prevention programs (Dusenbury, Brannigan, Falco, & Hansen, 2003; Greenberg, Domitrovich, Graczyk, & Zins, 2005; Kam et al., 2003) as well as the results of the only four studies to date that mentioned assessing teachers' beliefs about SEL (Bunting, 1984; Hussey & Flannery, 2007; Kowalski et al., 2001; Lane et al., 2003). A fifth study that included a questionnaire to assess teachers' attitudes toward one specific SEL program was published after the data being reported here were collected (Schultz et al., 2010) and was not incorporated into item development. Based on this literature, the authors identified four domains of teachers' beliefs that may impact program implementation. These included (a) comfort level with delivering SEL instruction, (b) commitment to learning about and teaching SEL, (c) beliefs that student learning and success will benefit from SEL, and (d) opinions about how much the culture of the school would support SEL programming. Together, the authors wrote 32 items, eight for each domain (reverse-scored items were included for each domain). Four SEL experts then reviewed the items independently and offered feedback on wording and content.¹ The final survey consisted of 25 randomly ordered items. Additional items reflecting teachers' prior professional development experiences with SEL (i.e., formal training and provision of both in- and preservice training on the topic) and current practices (e.g., "I offer opportunities in my classroom for students to develop their social and emotional skills") also were included for descriptive purposes. Teachers rated the extent to which they agreed with each item using a 5-point Likert-type scale. To ensure that all teachers had the same conception of SEL in mind when answering the questions, we included in the instructions an established definition of SEL (Zins et al., 2004).

Survey administration. Teachers who attended a series of SEL workshops required by the district in the fall of 2008 completed the survey. To reduce the possibility of the workshop content biasing survey responses, participants completed the survey before the workshop commenced.

Analytic Plan. We screened carefully data from participants to obtain as much complete information as possible. Because we envisioned four factors with roughly five to six items loading on each factor, participants with more than 20% missing survey data (five or more items on any of the scales) were excluded from all analyses ($n = 30$), leaving 905 participants (97%). Missing

data from the remaining participants were imputed using expectation maximization procedures with the assumption that data were missing at random (Dempster, Laird, & Rubin, 1977; Enders, 2003).

Because variability in teachers' SEL beliefs might be accounted for by school, multilevel modeling (Raudenbush & Bryk, 2002) was the analytic tool of choice for these data. Exploratory analyses showed that intraclass correlation coefficients, which represent the extent to which schools accounted for individual teacher variability in the scales, were very low (i.e., less than 10%). Teachers, therefore, were not nested within schools in succeeding analyses. We split the sample randomly into two groups: exploratory and confirmatory samples, which included 450 and 455 teachers, respectively.

Results

Exploratory Factor Analysis. To decide on the number of factors, we first explored the nature of the items by subjecting them to principal axis factor analysis (PAF) with direct oblimin rotation, with the assumption that factors were intercorrelated. We obtained a six-factor solution with factors that were not easily discernible, some of which contained only one or two items. In addition, many item loadings were low (e.g., $<.30$). Although examination of the scree plot suggested a three-factor solution, we attempted to obtain a four-factor solution based on the items that were written to tap the four domains we discussed in our literature review. We then subjected the next round of PAF to a forced, four-factor structure, which yielded the same issues we experienced earlier. As our goal was to develop a parsimonious assessment tool, we deleted items with communalities and factor loadings below $.45$, which is slightly above the conservative cutoff (Malthouse, 2001). Examples of deleted items were as follows: "There should be benchmarks to assess students' social and emotional skills" and "I offer opportunities in my classroom for students to develop their social and emotional skills." No loss of content coverage was observed. We reran PAF, without forcing a set number of factors because the factor configuration may have changed as a result of item deletion. The analysis yielded a three-factor solution. Two additional items fell below our threshold for inclusion and were removed. The final three-factor solution accounted for 48.65% of the total variance. Each of the three scales had four items. Table 1 includes the psychometric properties and factor loadings for each of the scales. The KMO measure of sampling adequacy was $.80$, and Bartlett's test of sphericity was $\chi^2(66) = 1669.53, p < .001$. No severe departures from normality were detected. Interitem correlations all were significant and modest (r s between $.20$ and $.50$). We labeled these factors as Comfort (comfort with teaching SEL), Commitment (desire to develop SEL skills), and Culture (school support for SEL instruction). There was no empirical support for the fourth factor pertaining to the importance of SEL for student success.

Table 2 summarizes the psychometric properties of the three factors. Cronbach's alphas for all scales were above $.74$. Intercorrelations among the scales were significant ($ps < .001$) with Comfort and Commitment: $r(448) = .21$, Commitment and Culture: $r(448) = .23$, and Comfort and Culture: $r(448) = .36$.

Confirmatory Factor Analysis. To verify the factor structure, we ran a confirmatory factor analysis (CFA) assuming that (a) the three scales were intercorrelated, (b) there were four indicators under each scale, and (c) measurement error in the indicators was random. We fixed one of the indicators for each scale to 1.0 to identify the model and employed maximum likelihood estimation to estimate all models based on the variance-covariance matrix. Evaluation of model fit was based on five criteria (Kline, 2005): Chi-square (χ^2), the root mean square error of approximation (RMSEA), the standardized root mean residual (SRMR), the Comparative Fit Index

Table 1. Three-Factor Solution and Psychometric Properties of the Teacher SEL Beliefs Scale (N = 450)

Order	Items	M	SD	Skewness	Kurtosis	Factor loadings		
						1	2	3
19	I feel confident in my ability to provide instruction on social and emotional learning.	3.85	0.79	-0.67	0.50	.839 (.790)	.111 (-.072)	-.053 (.278)
15	I am comfortable providing instruction on social and emotional skills to my students.	3.89	0.75	-0.80	1.19	.643 (.688)	-.155 (-.312)	.018 (.341)
11	Taking care of my students' social and emotional needs comes naturally to me.	3.72	0.87	-0.67	0.11	.607 (.618)	.046 (-.098)	.004 (.253)
18	Informal lessons in social and emotional learning are part of my regular teaching practice.	3.92	0.71	-0.51	0.49	.567 (.598)	-.071 (-.227)	.078 (.344)
20	I would like to attend a workshop to learn how to develop my students' social and emotional skills.	3.51	1.01	-0.78	0.25	-.011 (.164)	-.835 (-.801)	-.052 (.183)
10	I would like to attend a workshop to develop my own social and emotional skills.	3.23	1.10	-0.39	-0.57	-.051 (.118)	-.801 (-.776)	-.046 (.163)
23	I want to improve my ability to teach social and emotional skills to students.	3.90	0.77	-0.96	2.03	.035 (.214)	-.659 (-.683)	.057 (.261)
9	All teachers should receive training on how to teach social and emotional skills to students.	4.00	0.86	-0.95	1.32	.031 (.206)	-.652 (-.674)	.050 (.251)
12	My principal creates an environment that promotes social and emotional learning for our students.	3.88	0.87	-1.20	2.17	-.032 (.306)	-.019 (-.233)	.773 (.764)
3	The culture in my school supports the development of children's social and emotional skills.	4.03	0.77	-0.92	1.75	-.056 (.234)	.063 (-.126)	.704 (.662)

(continued)

Table 1. (continued)

Order	Items	M	SD	Skewness	Kurtosis	Factor loadings		
						1	2	3
25	My principal does not encourage the teaching of social and emotional skills to students. (reverse scored)	3.97	1.00	-0.95	0.55	.040 (.313)	-.021 (-.209)	.620 (.643)
2	My school expects teachers to address children's social and emotional needs.	4.15	0.71	-0.86	1.56	.080 (.301)	-.040 (-.199)	.488 (.534)

Note: SEL = social and emotional learning. Coefficients of pattern matrix (structure matrix) are displayed.

Table 2. Psychometric Properties of the Teacher SEL Beliefs Scale (N = 450)

Factor	No. of items	M	SD	Skewness	Kurtosis	Cronbach's α
Comfort	4	3.84	0.60	-0.48	0.61	.76
Commitment	4	3.66	0.76	-0.63	0.41	.82
Culture	4	4.07	0.63	-0.72	1.25	.74
Total	12	3.84	0.47	-0.43	1.67	.79

Note: SEL = social and emotional learning. CFA = confirmatory factor analysis. Psychometric properties found in follow-up CFA (N = 455) were mostly identical to these results.

(CFI), and the Tucker-Lewis Index (TLI). Chi-square ideally is nonsignificant, although it is highly sensitive to large sample sizes. RMSEA and SRMR values closer to 0 indicate good fit, with values of .08 and .10 indicating acceptable fit for RMSEA and SRMR, respectively. CFI and TLI have to be greater than .90 to indicate acceptable fit (Kline, 2005; Schumacker & Lomax, 2010).

All estimated parameters of the hypothesized three-factor structure were significant and resulted in a good fit based on four of five criteria: RMSEA = .06, SRMR = .06, CFI = .94, and TLI = .93. The chi square was statistically significant, $\chi^2(51) = 137.16, p < .001$, but because this test is sensitive to large sample sizes, the chi square is deemed an acceptable fit when the ratio between chi square and degrees of freedom falls below 5 (Marsh & Hocevar, 1985). Here, the ratio was $137.16/51 = 2.69$, which is within the acceptable range. The results of the CFA, therefore, show that the three-factor structure was viable. Figure 1 illustrates the confirmatory factor model with its standardized estimates. Internal consistencies (Cronbach's alpha) for the scales were similar to those found in the exploratory factor analysis: .77, .81, and .74 for the Comfort, Commitment, and Culture scales, respectively.

To further confirm the three-factor solution, we ran a one-factor solution, with the notion that all indicators possibly represented an omnibus scale of teachers' SEL beliefs. The one-factor solution resulted in poor fit, $\chi^2(54) = 845.22, p < .001$, RMSEA = .18, SRMR = .14, CFI = .50, and GFI = .71. The change in chi square between the three- and one-factor models was significant, $\Delta\chi^2(3) = 708.06, p < .001$, favoring the three-factor structure. Thus, in subsequent analyses, the three domains were examined independently.

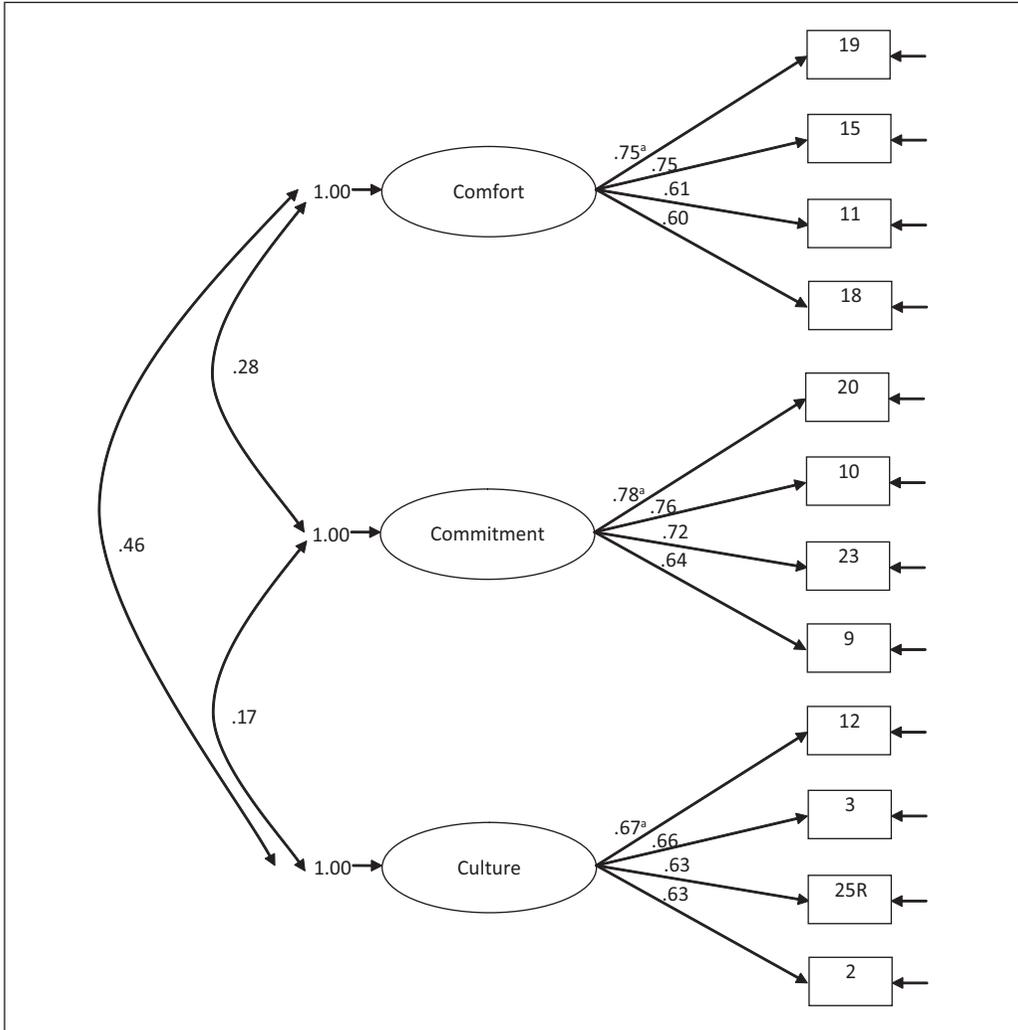


Figure 1. Standardized parameter estimates (all significant) of teachers’ beliefs about SEL
 a. A parameter fixed to 1.0 in the original solution.

Phase 2: Validity Evidence Based on Relations to Other Variables

To explore further the validity of the SEL Beliefs scales, we examined their concurrent and predictive validity in a sample of teachers randomized to commence training on and use RULER (“program teachers”) or to serve in the waitlist control group (“control teachers”). To validate the scales, we included measures related to teacher effectiveness (e.g., teacher burnout, principal support) as well as measures assessing implementation quality of RULER (e.g., program buy-in, student enjoyment).

First, we examined the concurrent validity of the SEL Beliefs scales. To explore the extent to which the domains of the scales tapped into different constructs, we tested the hypothesis that each domain would be related to different teacher and school characteristics, including teacher burnout, teaching efficacy, and perceptions of administrative support.

Burnout is conceptualized as a three-dimensional construct: emotional exhaustion, depersonalization, and reduced personal accomplishment (Maslach, 2003). Because teachers who are burnt out report less interest in students and their own professional development (Travers & Cooper, 1996), we expected the burnout scales to correlate significantly with Comfort and Commitment. Teaching efficacy pertains to the willingness to modify teaching methods; thus we expected this scale to correlate more strongly with Commitment than with Comfort and Culture. Finally, we expected Culture to correlate with a broad measure of administrative (principal) support.

Because we collected SEL Beliefs scores from program teachers prior to their implementation of RULER, we also were able to examine the relationship between teachers' SEL belief scores and their implementation quality, end-of-year attitude toward, and perceptions of principal support of RULER. We expected that teachers with higher Comfort and Commitment scores prior to implementing RULER would have more positive attitudes toward RULER after teaching it and also higher quality implementation. We also predicted that teachers with higher Culture scores at the beginning of the year would rate, at the end of the year, that their principals were more supportive of the RULER program.

Method

Participants. Participants were 88 fifth- and sixth-grade teachers from the 62 schools described in Study 1. Forty-one teachers taught in schools randomly assigned to use RULER and 47 teachers taught in control schools.

Procedure. In spring 2008, schools volunteered their fifth- and sixth-grade English language arts teachers to participate in an RCT of RULER. After baseline data collection, half of the schools were randomized to the program condition and half to the control condition. Program schools were slightly smaller in size than control schools, $t(60) = 2.82, p = .006, ES = .73$; there were no other significant differences between the schools in the two groups.

Teachers in the program condition attended two days of training on RULER and worked with a certified RULER coach on five occasions throughout the academic year. The training days included didactic instruction, lesson design and practice, feedback, and observations of program instruction. The coaching sessions included sharing of successes and challenges, provision of teaching tips and resources, and observations with feedback. Three booster sessions also were offered during the school year to provide additional training and support to teachers. The RULER implementation protocol recommended that teachers teach one unit, which includes five brief lessons, every 2 to 3 weeks.

At both the beginning and end of the school year, participating teachers mailed a confidential survey packet to the researchers. RULER coaches provided evaluations of the program teachers' implementation quality and attitudes toward the program.

Measures

Concurrent validity. Teacher stress and burnout were assessed with the Maslach Burnout Inventory–Educators Survey (MBI-ES; Maslach, Jackson, & Leiter, 1996). This 22-item scale assesses how frequently (1 = *never*; 7 = *every day*) teachers experience the three aspects of burnout: *emotional exhaustion* (feelings of being emotionally drained at work), *depersonalization* (impersonal feelings toward students and coworkers), and (reduced) *feelings of personal accomplishment* (feelings of competence and achievement). Cronbach's alphas were .92, .77, and .84 for emotional exhaustion, depersonalization, and personal accomplishment, respectively.

Teaching efficacy was assessed with the Adaptive Efficacy Scale (Search Institute, 2006), which measures teachers' beliefs in their ability to modify their teaching methods as needed and to have a positive effect on student achievement (e.g., "By trying a different teaching method, I

can significantly affect a student's achievement"). Responses to this five-item scale are made on a five-point scale (1 = *strongly disagree*; 5 = *strongly agree*). Cronbach's alpha was .75.

Teacher perceptions of administrative support were measured using the Administrator Support Scale (Baruch-Feldman, Brondolo, Ben-Dayan, & Schwartz, 2002). This 10-item scale assesses teachers' perceptions of the extent to which their relationships with administrators are collegial. Respondents rated their agreement to items such as, "The administrative/leadership team at my school backs me up if there is a problem," using a 5-point agreement scale (1 = *strongly disagree*; 5 = *strongly agree*). Cronbach's alpha was .91.

The 12-item SEL Beliefs scale assessed Comfort, Commitment, and Culture for SEL (see Table 1). Cronbach's alphas were .86, .93, and .84, respectively. Items from the original scale were ordered randomly.

Predictive validity. Program teachers' attitudes toward RULER were assessed using two self-report scales. Three items assessed *buy-in*, which referred to the degree to which teachers believed in RULER and its goals (1 = *not at all*; 5 = *very much*; Cronbach's α = .88). Two items assessed *goodness of fit*, which referred to how well teachers felt the program fit into their existing curriculum and teaching priorities (1 = *not at all*; 5 = *very much*; r = .61). As another assessment of teacher attitudes, RULER coaches rated each teacher's *openness to programming* from 1 (*very resistant*) to 5 (*very open*).

We also assessed, through self-ratings, teachers' confidence in their ability to teach RULER, perceptions of their principals' support for RULER programming, perceived program effectiveness, and perceptions of their own and their students' enjoyment of RULER. Eight items assessed *confidence* (1 = *not at all*; 5 = *very much*; Cronbach's α = .77). Three items assessed perceived *principal support* (1 = *strongly disagree*; 5 = *strongly agree*; Cronbach's α = .88). Six items assessed *perceived program effectiveness* (1 = *strongly disagree*; 5 = *strongly agree*; Cronbach's α = .93). Five items each assessed teacher perceptions of their own and their students' *program enjoyment* (1 = *not at all*; 5 = *very much*; Cronbach's α = .82 and .80, respectively, for teacher and student enjoyment). Coaches also rated teachers' end-of-year overall *implementation quality* from 1 (*needs a lot of improvement*) to 5 (*excellent*).

Analytic Plan. First, we examined correlations between the three SEL Beliefs scales and both teachers' characteristics and perceptions of administrative support preimplementation. Then, we examined correlations between the preimplementation responses to the three SEL Beliefs scales and end-of-year indicators.

Results

The top half of Table 3 summarizes the concurrent validity findings. The results, overall, were as expected. Comfort correlated significantly with the two burnout scales: depersonalization and personal accomplishment, as well as adaptive efficacy. Commitment correlated moderately with adaptive efficacy, and Culture correlated positively with administrator support and negatively with emotional exhaustion. Moreover, teachers who reported that their schools were open to and supportive of SEL instruction reported less emotional exhaustion and greater perceived administrator support.

The bottom half of Table 3 summarizes the predictive validity findings. Beginning-of-year Comfort scores had moderate to high correlations with teachers' year-end attitudes about RULER. Specifically, teachers who were more comfortable with SEL had greater program buy-in, were more open to the program, were more confident in their ability to teach the program, perceived the program as more effective, and enjoyed the program more than teachers who were less comfortable with SEL. Commitment correlated moderately with goodness of fit, openness, confidence, buy-in, program effectiveness, and student enjoyment. As predicted, Culture

Table 3. Correlations Between the Teacher SEL Beliefs Scales and Both Teacher Characteristics and Implementation Quality Indicators for the RULER Approach—Social and Emotional Learning Program

	<i>M</i>	<i>SD</i>	Comfort	Commitment	Culture
Concurrent validity					
Variables					
Emotional exhaustion	3.01	1.27	-.04	.12	-.23*
Depersonalization	1.78	0.86	-.32*	-.13	-.21
Personal accomplishment	5.61	0.95	.51*	.16	.13
Adaptive efficacy	4.14	0.42	.52*	.30*	.10
Administrator support	3.51	0.60	.01	.04	.69*
Predictive validity					
Year-end program attitudes and quality indicators					
Program buy-in	4.00	0.78	.40*	.57*	.09
Goodness of fit	3.17	0.86	.28	.32*	.11
Openness to programming ^a	4.13	1.00	.34*	.37*	.25
Confidence	4.37	0.47	.64*	.35*	.27
Principal support of RULER	3.08	0.98	.24	.07	.59*
Program effectiveness	3.78	0.54	.46*	.62*	-.07
Teacher enjoyment	4.03	0.55	.36*	.26	.16
Student enjoyment	3.11	0.34	-.04	.32*	-.02
Implementation quality ^a	3.80	1.01	.19	.13	-.10

Note: SEL = social and emotional learning. Phase 1 correlations were based on both control and program teachers' data at the beginning of the school year. Phase 2 correlations were based on program teachers' beginning-of-year scores on the Teacher SEL Beliefs Scale and end-of-year implementation quality indicators.

a. Informant was the coach.

* $p < .05$.

correlated highly with principal support of RULER. Finally, counter to our predictions, SEL Beliefs scale scores from the beginning of the year did not predict coaches' reports of implementation quality.

Discussion

The goal of this research was to develop and validate a tool for researchers and practitioners to assess teachers' beliefs about SEL. Using a large sample of kindergarten through eighth-grade teachers from diverse areas of New York, two primary findings emerged: (a) teachers' beliefs about SEL can be differentiated into three relatively distinct domains that can be measured reliably and (b) there is evidence for the validity of the scales.

Domains of SEL Beliefs Scale. The exploratory and confirmatory factor analyses conducted in Study 1 resulted in three relatively independent and reliable scales: Comfort (sense of confidence in teaching SEL), Commitment (desire to participate in SEL training and teaching), and Culture (schoolwide support for SEL). There was no empirical support for the inclusion of a fourth domain related to teachers' beliefs of the importance of SEL for student success. Items for this domain had low communalities (range = .084-.319), suggesting they may not be reliable. In addition, some items that were written for this domain (e.g., "Students will be more successful in life if they have social and emotional skills") were highly negatively skewed, suggesting a possible ceiling effect. This finding, although unexpected, is similar to that found in other research, which did not find support for a factor that tapped into teachers' sense of responsibility for their students'

social and emotional development (Schultz et al., 2010). Although Schultz and colleagues (2010) found an academic priority factor in their measure, items that loaded onto that factor (i.e., “The director gives more importance to learning academics than learning social and emotion skills”; “The education coordinators give more importance to learning academics than learning social and emotional skills”) were similar to the Culture factor in the SEL Beliefs scale.

The CFA indicated that the three-factor solution for the SEL Beliefs scale was a better fit than a one-factor solution. Thus, in subsequent analyses, we used domain scores and did not aggregate responses into a single factor. The low intercorrelations among the scales further suggested that they may yield different patterns of responses from teachers. For example, teachers who were more committed to developing their own SEL skills may not necessarily be more comfortable in teaching SEL. Although it could be hypothesized that different profiles of SEL beliefs could emerge (e.g., high in comfort, low in commitment, and high in culture), our data did not support such a hypothesis.

Concurrent and Predictive Validity of the SEL Beliefs Scales. Across both phases of the study, several teacher characteristics were assessed, and their relationships to the SEL Beliefs scales were examined. In this section, we review the variables associated with the scale and discuss some of the practical and research-related implications.

Concurrent validity. Teachers reported on several aspects of their teaching experiences, including their levels of burnout, modification of teaching practices to better meet the needs of students (adaptive self-efficacy), sense of accomplishment in teaching, and the support they received from their school leaders. Teachers who reported both greater Comfort teaching SEL and greater Commitment to SEL training reported that they felt a greater sense of accomplishment in teaching. Those with higher Comfort scores also had greater adaptive self-efficacy and had lower scores on depersonalization, one aspect of burnout. In other words, teachers who reported greater Comfort teaching SEL were less likely to depersonalize their students—they saw students as individuals and, as such, modified their teaching to better serve their needs. Teachers with higher Culture scores had lower levels of emotional exhaustion and reported having administrators who were more supportive in general. The methods and data prohibit causal statements about these relationships, but ample research suggests that less supportive working environments in schools lead to greater emotional exhaustion among teachers (cf. Halbesleben, 2006). Support from all stakeholders, for teachers in general and for innovation in pedagogy and training in particular, is necessary for creating positive working climates in schools (National Research Council and Institute of Medicine, 2002) and for ensuring SEL program success (Brackett et al., 2009; Devaney et al., 2006).

Predictive validity. Teachers from both program schools and control schools completed the SEL Beliefs scale at the start of the year, before RULER training began. Within the program schools, Comfort scores correlated positively with program buy-in, year-end confidence in teaching the program, perceived program effectiveness, and coaches’ ratings of teacher openness to the program. Commitment scores correlated positively with program buy-in, goodness of fit, and program effectiveness. Finally, Culture correlated positively with year-end reports of principal support of RULER.

Teachers’ beliefs influence the type of learning environments they create, as well as their students’ academic performance and beliefs about their own abilities (Fang, 1996; Kagan, 1992). Students perform better when their teachers believe they will succeed, in part because teachers treat students differently when they hold high expectations for them (Rosenthal, 1994). The same may be said for the relationship between the success of newly adopted pedagogical approaches or curricula—including SEL programs—and the expectations teachers hold for them. RULER, for example, challenges teachers to model the effective regulation of a range of emotions and to deliver emotion-related content through the teaching of a sophisticated feeling words

vocabulary. Although SEL content can integrate seamlessly into core academic curricula, teachers who have low expectations for these efforts or who feel uncomfortable teaching the content at the outset will be less likely to implement the programs with quality and fidelity. They may be less engaged in SEL program training, devote less effort to understanding and practicing the pedagogical techniques, and be less interested in or capable of making meaningful and natural connections between the SEL program and the curricula of other core subject areas.

Because teachers' beliefs about SEL can impact implementation quality, researchers, practitioners, and policymakers who are invested in educating the whole child should be especially interested in assessing these beliefs. As national education reform efforts gain momentum, greater attention will be paid to factors influencing successful SEL program delivery and its subsequent impact on child outcomes. This is especially true in light of the reauthorization of the Elementary and Secondary Education Act, the introduction of the Academic, Social and Emotional Learning Act of 2009 (H.R. 4223), and the current formation of state standards and guidelines for SEL. Schools that successfully deliver SEL programs report an increase in academic success, improved quality of teacher–student relationships, and a decrease in problem behaviors (Durlak et al., 2011), which emphasizes the urgency of identifying and measuring the factors that impact effective SEL programming.

Limitations and Future Directions. The original conceptualization of the SEL Beliefs scale included a factor related to teachers' beliefs about the importance of SEL for student success. The exploratory factor analysis did not support this factor, however. Items for this domain were highly negatively skewed, suggesting a ceiling effect. Indeed, a recent survey study showed that more than 96% of teacher respondents stated that SEL is important in school and enhances academic outcomes (Buchanan et al., 2009). Nevertheless, it is worth returning to this factor, testing revised language for the existing items and incorporating new ones, such as items measuring teachers' beliefs about the malleability of social and emotional skills in students. If teachers do not believe that students are able to improve their SEL skills through formal instruction in school, or at all, it is unlikely they will buy into SEL efforts at their schools. Teachers who believe students' social and emotional skills are malleable are more likely to devote time to SEL instruction (cf. Dweck, Chiu, & Hong, 1995). As Kress and Elias (2006) note, "Teachers who believe that social and emotional skills are part of a student's immutable genetic makeup will be unlikely to show support for a program" (p. 600).

Although the sample included in the study was large and diverse in terms of where teachers were located and what grade levels they taught, it was limited in that it was comprised exclusively of teachers in Catholic schools. Just 6% of the teachers were ordained; however, it is possible that the beliefs of these lay teachers do not generalize to the greater population of teachers in public and private schools where religion is not embedded in the curriculum. Evidence from a sample of over 600 teachers in public schools reflected the factor structure reported here, however (Collie, 2010). Moreover, a majority of the respondents were female teachers (90%), which challenges generalizability of the findings to male teachers. For example, men are known to be less emotionally expressive than women (Brody & Hall, 2000) and to score lower on emotional intelligence tests than women (Brackett, Rivers, Lerner, Salovey, & Shiffman, 2006). Exploring the impact of these gender differences on beliefs about SEL is important to do. Furthermore, the results of the current study should be replicated in other types of schools (public, private nonsecular) to ensure the results are generalizable to other populations.

The associations reported across these studies are correlational. Thus, it is unknown if the relationships are causal. More widespread use of these scales can be used to identify additional relationships, including causal ones, between SEL Beliefs and practice outcomes. Future investigations can explore which scales predict SEL program implementation practices and moderate the impact of SEL interventions on student outcomes. Longitudinal, experimental research could

examine causal relationships among these constructs. For example, under what circumstances can Commitment and Culture be modified to increase Comfort? In our own research, we are examining both the predictive validity of SEL Beliefs using assessments of students' social competence and academic performance, as well as the extent to which teachers' SEL beliefs moderate the quality of implementation of RULER.

Conclusion

Using a large, ethnically diverse sample of teachers, we demonstrated that teachers' beliefs about SEL could be partitioned into the three relatively distinct reliable and valid scales (Comfort, Commitment, and Culture) that are both parsimonious and easy to administer. As the disseminators of knowledge in the classroom, teachers and their beliefs about SEL may shape the learning environment and in turn, impact students' developmental outcomes. Program developers, practitioners, and investigators who wish to bring SEL into schools can use these scales to better understand teachers' comfort with and commitment to SEL and their perceptions of how much their schools' culture supports SEL. Administrators can employ these scales to assess their schools' readiness to adopt SEL programming. Scores on each of the scales could influence the timing, type, and amount of training teachers need to ensure the best results of an SEL initiative.

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Note

1. We recruited four members (veteran researchers) from the Collaborative for Academic, Social, and Emotional Learning (CASEL) to review and comment on the items. CASEL is an organization that provides leadership and guidance to researchers, educators, and policy makers on school-based SEL programs.

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