Warming the Emotional Climate of the Classroom: Can Teachers' Social-Emotional Skills Change?

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Emotional skills underpin what teachers do. However, relatively few studies have investigated whether these skills can be formally learnt by teachers and the benefits enhancing teachers' social-emotional skills may have on students. The current research aimed to develop an intervention to improve teachers' social-emotional skills in the classroom and to assess changes in teachers' emotional teaching practices and their emotional awareness in the classroom, as well as changes in students' social-emotional behavior in relation to changes their teachers may have made. Twenty-seven teachers of Year 3-8 (8-13 year old) students participated in an emotional skills intervention, which took place over three months. The findings yielded mixed results. In line with predictions, decreases in teachers' undesirable relating and setting limits were found. However, no relationships between teacher changes and students' pro-social behavior and emotion were found. However, students of teachers who improved compared to those who did not on observed emotional practices, reported significant differences in their teachers' leadership, helpfulness/friendliness, understanding, student responsibility/freedom, student admonishing and strictness.

Keywords: emotions, social-emotional skills, emotional intelligence, emotional competencies, classroom climate

Introduction

        The ability to be aware of, understand, facilitate, and manage emotions in oneself and others involves a sophisticated set of measurable skills known as emotional intelligence (EQ, Bar-On, 1997; Mayer, Caruso, & Salovey, 1999). Emotional competence is thought to include these EQ skills as well as the social abilities related to emotional expression, empathy, relationships, and self-efficacy (Saarni, 1999). Social-emotional

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skills such as these are thought to be linked to successful social functioning, problem solving, and the prevention of psychological difficulties in adults and children (Bradley, 2000; Cha & Nock, 2009; Menzie, 2005; Vorbach, 2002). Given these positive qualities, practices that help to develop social-emotional skills in school-aged children would seem highly desirable. Although some assume emotional intelligence is a fixed trait and therefore unlikely to be teachable (e.g., Rietti, 2008), the consensus appears to be that it can be formally taught by teachers and parents to children (e.g., Domitrovich, Cortes, & Greenberg, 2007; Elksnin & Elksnin, 2003). In fact, we prefer to use the term social-emotional skills for this reason, in that while it includes the described areas of abilities associated with emotional intelligence and emotional competence, the underlying assumption is that these occur in a social context, are malleable and able to be learnt. Many carefully developed Social-Emotional Learning (SEL) school-based programs have burgeoned based on this premise. In their 2012 review, The Collaborative for Academic and Social and Emotional Learning (CASEL) identified and reviewed 19 elementary SEL programs, and these types of programs have reportedly led to improvements in pupils' emotional knowledge, behavioral problems, distress, classroom atmosphere, and cognitive development (Domitrovich et al., 2007; Maurer, Brackett, & Plain, 2004; Solomon, Watson, Delucchi, Schaps, & Battistich, 1988).

Recent awareness of the influence of teachers' social-emotional skills on students' has been encouraging (e.g., Brackett &Caruso, 2006). Jennings and Greenberg (2009) hypothesized teachers' social-emotional skills and wellbeing impacted on students' emotional outcomes (see also Jennings, Snowberg, Coccia, & Greenberg, 2011; Roeser, Skinner, Beers, and Jennings, 2012). Rivers et al (2013) included training for teachers on how to support delivery of their literacy based SEL program for students. Observational and teacher-report (but not student) data from this study suggested their joint approach benefited the classroom emotional climate. Although exciting, SEL programs such as these still focus on teachers explicitly and formally teaching emotional competencies to children. However, in the absence of emotionally relevant contexts, there is the risk that social-emotional skills taught may fail to generalize to natural settings and interactions (Tice, Bratslavsky, & Baumeister, 2001). Children's social-emotional skills can and do develop within natural interpersonal relationships, such as the emotional modeling by caregivers (Campos, Campos, & Barrett, 1989; Casey & Fuller, 1994; Shipman & Zeman, 2001). Skills learnt in a relevant emotional setting can generalize to other similar emotional contexts (Parrott & Spackman, 2000). Social-emotional skills are also acquired when teachers and parents use everyday emotion-evoking situations as teachable moments and as opportunities to develop relationships, identify and validate feelings, and seek regulation strategies (Gottman, Katz, & Hooven, 1997). Thus, training on emotions within a relevant natural context would serve as a useful adjunct or even a substitute to formal programs when developing social-emotional skills. One considerable challenge to the success of an environment-based intervention, however, is the heavy reliance on the ability of classroom teachers to demonstrate emotional competencies in their everyday interactions with pupils. The variability in emotional skill levels is likely to temper any program's potential effectiveness (Domitrovich & Greenberg, 2000). Research aimed at understanding how teachers use every day emotional situations to foster children's emotional competencies is still in its infancy.

Emotions and emotional skills are central to effective teaching and the shaping of teachers' emotional connections with students, which foster learning and positive developments in pupils (Hargreaves, 1998, 2000; Jennings and Greenberg, 2009). Given that young children spend a lot of time with individual teachers, there are potentially hundreds of implicit learning opportunities and situations involving different emotions occurring in everyday interactions in which teachers can foster students' emotion skills. Teachers socialize students' emotions in everyday conversations by validating or dismissing children's emotions, facilitating children's emotional vocabulary, and/or linking causes to emotions when they occurred (Ahn, 2005). Teachers who support students' emotional experiences, or engage in emotional scaffolding, are viewed by students as more supportive and caring (Meyer & Turner, 2006; Patrick, Turner, Meyer, & Midgley, 2003; Wentzel, 1997). To investigate the types of emotional skills required in educational practice, Harvey and Evans (2003) interviewed exemplar teachers and students whose behavior had much improved with a new teacher. Five emotional skill domains emerged from their research: Emotional Relationship, Emotional awareness, Emotional Intrapersonal Beliefs, Emotion Management, and Emotional Interpersonal Guidelines (see also Andersen, Evans, & Harvey, 2012; Evans, Harvey, Buckley, & Yan, 2009; Harvey, Bimler, Evans, Kirkland, & Pechtel, 2012; Yan, Evans, & Harvey, 2011). Harvey (2004) found teachers' emotional skills in these five areas were associated with students' emotional intelligence and emotion regulation. However, given the correlational nature of this research, the direction of the relationship between teachers' social-emotional skills and students' emotional outcomes is unknown. Further research is necessary to determine the direct influence that changes in teachers' emotional practices has on students' emotions.

Researchers have recently begun investigating the impact that teachers' emotional change may have on students. Hoffman, Hutchinson, and Reiss (2009) developed an emotional intelligence and classroom management intervention. They found attitudinal shifts in teachers' perceptions of the school climate, collegial support, and relationships with students. Others have reported links between teachers' emotional intelligence and their teaching efficacy (Penrose, Perry, & Ball, 2007). Despite this, few studies have investigated what emotional competencies are necessary for teachers, whether these can be learnt, and the potential benefits that the enhancement of teachers' social-emotional skills might have on students. These studies are limited in their reliance on correlational data, predominantly involve self-report and perceived changes in attitudes, and/or have not measured changes in both teachers and students

The current research aimed to develop an intervention to improve teachers' social-emotional skills in the classroom and to measure changes in teachers' emotional teaching practices and their emotional awareness in the classroom, and changes in students' social-emotional behavior as a result of changes their teachers may have made. We hypothesized that teachers' beneficial emotional practices (e.g., emotional awareness, emotional relationships, emotion coaching, emotion interpersonal guidelines, emotional intrapersonal beliefs) would improve as a result of skills training in emotional competencies. We also anticipated observing decreases in areas negating these benefits, such as rigidity and criticism. If there were changes in teachers' emotional practices, we predicted these would be related to changes in students' social and emotional behavior, namely a decrease in bullying and an increase in pro-social behavior and positivity.

Method

Participants

Recruitment for teachers involved several steps. Expressions of interest were sought from school principals and teachers of students between 8 and 13 years of age. Those interested in participating signed informed consents. Consent forms were sent to parents of students whose classrooms that were to be involved. Passive consent procedures were used with parents, as only teachers (and not students) attended the intervention workshops (Anderman, Cheadle, Curry, Diehr, et al., 1995). Students whose parents did not want them to be videoed or complete questionnaires were moved to another classroom while filming, and given another activity to do during questionnaire administration. Informed written assent was also sought confidentially from students. Prior to the administration of pre- and post-intervention questionnaires and the initiation of filming, a member of the research team introduced himself or herself to the students and re-verified assent. All participants were given the opportunity to withdraw from the study at any stage.

Teachers were recruited from 20 public and state-assisted elementary and middle schools located in the lower central North Island of New Zealand, a demographically diverse area consisting of three small cities, rural towns and villages, and agricultural regions, varying from the highest to the lowest income brackets in the country. The total population of the region is 222,672, the ethnicities of which comprise of 20.6% Māori, 81.3% Pākehā/NZ European and 9.2% Other. Seventy-three percent of people hold a formal qualification, unemployment is 7.8%, and the median annual income is NZ$25,000. The economy is predominantly agricultural, with 55% of the population based in either of the two main cities and the remainder located in rural locations, towns, or villages (Statistics New Zealand, 2013).

The intervention ran for the course of a full school year. Forty three teachers agreed to participate in the research intervention. Six teachers were ineligible due to students in their class being below the cutoff age of 8 years and a further 10 teachers from the intervention group withdrew prior to the intervention, leaving 27 teachers responsible for 302 students who participated in the intervention.

Twenty three teachers taught at the elementary levels of Years 3 to 6 (US equivalent to Grades 2-5) and four taught middle school students in Years 7 to 8 (US Grades 6-7). Intervention groups were organized in three different locations, two urban and one rural; teachers were assigned to an intervention group according to the locality of their school. The main intervention involved 4 groups in total; each group had 7 teachers on average. The demographic characteristics of participating teachers and students were approximately equivalent to the population statistics for the region (see Table I).

Table I. Demographic information on the intervention sample

Teachers	Frequency	Percentage	Students	Sample size	Percentage
Gender					
Male	6	18%	**Male**	155	47%
Female	21	82%	**Female**	172	52%
			Unknown	5	1%
Ethnicity					
NZ European	25	93%	**NZ European**	141	43%
NZ Māori	2	7%	**NZ Māori**	76	23%
			Pacific Island	12	4%
			Asian	4	1%
			Mixed	36	11%
			Other	62	19%
			unknown	1	.3%
Age					
25-35	10	37%	**7-8**	125	38%
36-45	6	22%	**9**	85	26%
46-55	5	19%	**10**	65	20%
56-65	6	22%	**11**	28	8%
Total	27		**12**	20	6%
			13	2	1%
			Unknown	7	2%

Measures

CLassroom Interactional Measure of Affective Teaching Environments (CLIMATE) (Chin, Yan, Harvey, & Parkes, 2011). CLIMATE is a behavioral observation tool measuring the frequency of teachers' emotion-related behaviors when teaching children in their elementary and middle childhood years. CLIMATE was field tested using over 100 hours of in-class video recordings on a select sample of 23 elementary and middle school teachers nominated for creating positive emotional environments in their classroom. Coders independently ranked these 23 teachers and emotional behaviors of the highest 6 on the CLIMATE and used their data as comparative feedback for teachers throughout the intervention. As each module was covered, the frequency of emotional behaviors pertaining to that module from the 6 exemplar teachers and the group sample were compared to the frequency of behaviors with teachers filmed during the two-hour baseline phase using CLIMATE. Individual comparisons were given to each teacher, although only the overall group results were discussed. An increase score is reflective of increases in desirable and decreases in undesirable emotional behaviors, which indicate an increase in emotional practice competence. A decrease score indicates the opposite relationship to this.

CLIMATE was used primarily as an evaluation tool for the intervention. To do this, film data were analyzed through CLIMATE by trained coders using Mangold INTERACT 8 software, a computer program

that enables the labeling of selected video segments with user-defined codes. This enables the 3-level hierarchy in CLIMATE to be separated into 4 Super-arching categories, 27 Categories, and 44 Subcategories, with Subcategories of emotional behaviors recorded as frequency data. The Super-arching categories are based on four of the five underlying components of emotional environments outlined by Harvey et al.'s (2012) model of classroom emotional environments: emotional relationships, emotional awareness, emotion management, and emotional interpersonal guidelines. Codes are drawn from categories and subcategories. To illustrate, the categories underlying emotion management includes student behavioral coaching, which was identified when teachers identified and discussed particular behaviors with students, the reasons why it should or shouldn't occur, and generated solutions about how to act in the future.

Coded pre- and post-intervention classroom video recordings using CLIMATE were compared. All videos were two hours in length. Whenever an identified behavior occurred, its form, and when it began and finished was recorded by independent coders blind to the data collection condition. Agreement was based on the form of the behavior that occurred within a 30 second entry and exit point. These defined behaviors were collated and calculated as a frequency.

To assess reliability, 10% of observations were coded by a second observer. A master coder and two additional independent coders coded the direct observation videos. The inter-rater agreement (Cohen's kappa) for CLIMATE between a master coder and associated coders with this study of 27 teachers was $\kappa = .73$. Coders were independent of any other role within the research team. The Master coder participated in the development of CLIMATE. During development, the Master coder and other expert code developers coded all of the same samples and these were compared. Any discrepancies were resolved through discussion and codes reworked. Emotion coaching for example was originally coded following the identification of emotion by a teacher, labelling, validating, and developing new approaches to emotion management with student(s). However, discrepancies revealed a number of variants to this approach with responses (e.g., addressing the behavior rather than emotion) and timings between the use of emotion coaching and the presence of emotion (e.g., coaching through reminding students of a previous emotional event versus during the emotional event). Coding was consequently altered to account for these variations.

Questionnaire on Teacher Interaction (QTI) (Elementary) (Goh & Fraser, 2000; Wubbels & Levy, 1991). The QTI examines teachers' interpersonal behavior through teachers' and students' perceptions using eight scales (Leadership, Helping/Friendly, Understanding, Student Responsibility/Freedom, Uncertain, Dissatisfied, Admonishing, and Strict Behavior).Each scale consists of six 3-point Likert items(1 = hardly ever, 2 = some of the time, 3 = most of the time) and scale scores are calculated by summing the scores for each. Teachers are asked to describe the manner of their interactions with students and students reflect on how a specific teacher interacts with them. Goh and Fraser (1996) reported internal consistency (Cronbach coefficient alphas) ranged from .58 to .78 for individuals (N=1,512) and.73 to .96 for class means (N=39).

Peer Relations Questionnaire (PRQ) Short Version for Children (Rigby, 1997). This 12-item self-report measure was designed to assess the quality of students' peer relationships, the nature and prevalence of bullying, and students' readiness to seek help using three subscales (bullying, victimization, and prosocial behavior).Higher scores on the 4-point Likert scale (1 = never, 2 = once in a while, 3 = pretty often, 4 = very

often) indicate higher levels of bullying, victimization, and pro-social behavior. Raskauskas, Gregory, Harvey, Rifshana, and Evans (2010) found the short form useful for children in New Zealand schools and reported normative data and internal consistency (Cronbach α coefficients) for all scales ranging from .62 to .86.

The How I Feel Scale (HIF) (Walden, Harris, & Catron, 2003).The HIF is a 30-item self-report measure that examines the interplay between arousal and control in social-emotional adjustment in school-age children. Ratings are provided for three scales of positive emotions (happy and excited), negative emotion (sad, scared, mad), and emotion control over the intensity and frequency of each feeling when it occurred over the past three months. Scale scores are obtained by adding the items associated with a particular scale. Respondents answer how true each item was over the last 3 months using a 5-point Likert scale (1 = not at all true of me to 5 = very true of me). Walden et al. (2003) reported the HIF to have moderate reliability over a two-year period, a stable 3-factor structure, robust concurrent validity, and subscale internal consistency ranging from α=.84 to .90.

Recognition of Emotional Content/Process Test. This exercise relates to a 10-minute online video segment of an exemplar teacher interacting with her class. The film test was administered through a website and completed pre- and post-intervention. Teachers were asked to identify and record emotional moments and to describe the emotions evident in the video. Once teachers finished watching the video, they responded to open-ended questions about the emotional interactions/strategies the teacher used in the interaction (e.g., How did the teacher respond to students' emotions?). Their descriptions of emotional events and responses to subsequent questions were analyzed in relation to the level of their knowledge of emotional content and process by coders scoring the level of their response against a 4-level Guttman scale (where 0 meant a respondent identified no emotional content or process in the film segment and 4 meant a complex and emotion-specific knowledge was evident). The coding guide was developed by the first author and two independent coders using responses from 23 teachers in a pilot sample. All responses were compared and differences in ratings were resolved through discussion until consensus was reached.

Intervention

The intervention involved three one-day workshops per teacher group, followed by a half-day follow-up session. Each workshop was delivered three weeks apart, so that the intervention required three months to complete. The workshops were organized into seven half-day modules based on dimensions of the Harvey-Evans' model of the classroom emotional environment. The module topics included: the classroom emotional environment, emotional awareness, emotional relationships, emotional interpersonal guidelines (standards and boundaries), emotional intrapersonal beliefs (philosophy, attitude, and acceptance), and emotion coaching (emotional expression as a teachable moment).

Specific topics within each target area were introduced to teachers for discussion in semi-structured workshops, termed Quality Learning Circles (QLC; see Lovett & Gilmore, 2003), which are reported to be an effective means of self-appraisal and teacher learning (Lovett & Verstappen, 2004). Using this approach, small groups of teachers explore the topic area; provide support for each other's learning, compare practices,

develop ideas for practice, and reconvene to reflect on skills trialed between meetings. The half-day follow-up session reviewed the material covered and collected participant feedback.

The consistent delivery of material was aided by ensuring the researchers who wrote the intervention manual also delivered the QLCs and that all QLCs were facilitated by the same people. Each module was organized using a structure derived from well-established principles of behavior change that are commonly used in cognitive-behavior therapy (Branch & Dryden, 2011; Dobson, 2009): review, psychoeducation, modeling and feedback, personal application, and homework.

Analysis

Twenty seven teachers completed the main intervention (See Table II), and all were filmed and their data included in the analyses. Twenty-six teachers and 332 students completed the QTI and 19 teachers completed the pre-post film test. The PRQ and HIF were completed pre- and post-intervention by 332 students.

All data were entered into SPSS and first tested with the Kolmogorov-Smirnov test of normality to assess the normality of data distribution, followed, when necessary and possible, by transformation of scales to reduce any departure from normality. Subsequent analysis used independent and paired-samples Student's t tests, and Spearman's Rank Order and Pearson's correlations. Cohen's d was used to calculate effect-size for repeated measures. We used these authors' recommendations to interpret r, whereby an effect size of $r = .1$ is considered small, $r = .3$ is medium and $r = .5$ is large.

Results

Teachers were expected to complete the video test independently using the internet. The eight teachers who didn't complete the film test were located at schools that had difficulty streaming the video. Spearman's Rank Order Correlation of Measures was used to evaluate the relationship between pre-test data. No significant correlations were noted between CLIMATE and other measures. A moderate level of correlation was evident between some of the HIF subscales and the PRQ subscales(HIF: Positive and PRQ: Prosocial $\rho = 0.47^*$; HIF: Control and PRQ: Prosocial $\rho = 0.54^{**}$).There was moderate correlation between the HIF subscales Positive and Control ($\rho = 0.63^{**}$) and Positive and Negative ($\rho = 0.49^*$). In addition, the Film Content test and Film Process test correlated moderately ($\rho = 0.62^{**}$), as did the student completed QTI subscale Desirable with Undesirable ($\rho = -0.76^{**}$) and HIF: Control ($\rho = 0.51^{**}$). However, the teacher completed QTI did not correlate with the student completed QTI.

An excluding cases pair wise option was used that ensured teachers with missing data from any particular analysis were excluded. To reduce the number of analyses while keeping with the circumplex structure, we combined the Leadership, Helping/Friendly, Understanding, and Student Responsibility/Freedom QTI scales into a 'desirable' superordinate scale and Uncertain, Dissatisfied, Admonishing, and Strict Behavior into an 'undesirable' superordinate scale. The two superordinate scales departed from normality due to the extent of skew in the raw scales. Therefore, square-root transformations were used to unskew these, and parametric statistics subsequently used. Using these combined scales, no

changes were noted with the QTI. The CLIMATE observation scales related to Emotional Awareness, Positive Relationship, Emotion Coaching and Positive Interpersonal Guidelines were also combined into a Desirable total score and Negative Relationship and Negative Interpersonal Guidelines into an Undesirable total score. Individual and Superordinate CLIMATE scales deviated from normality. Since scales were counts of observed occurrences, they follow a Poisson distribution and therefore a square-root transformation was used.

Although no differences were noted on CLIMATE of teachers' desirable emotional behaviors, decreases were noted in teachers' undesirable scores. Further analysis suggested both negative interpersonal guidelines and negative ways of relating decreased. Interestingly, no change was found with the positive counterparts of these scales on the total desirable scale. Moderate increases were also found respectively in teachers' level of description about the emotional content and the emotional processes they observed in a video sample of an exemplar teacher's practice.

Students' report of teachers' behavior on the QTI differed somewhat from outcomes evident in coded video samples and the video test. Students reported less desirable behavior from teachers whereas video data suggested less undesirable emotional behavior occurred over the year. It is uncertain whether this meant students' perspective of their teacher generally deteriorated over the course of the year or whether change in teachers did not occur and/or was not evident for students.

To test for these possibilities, classes were assigned to two groups according to their teacher's overall CLIMATE scores. Group 1 consisted of 17 teachers (63%), with 217 student reports coded as showing improved levels of emotional interaction post-intervention, i.e. improving their scores, while Group 2 included 10 teachers (37%), with 115 student reports, whose scores on CLIMATE worsened. No pre-intervention differences between the two groups were evident on the QTI and CLIMATE. Pre-to-post changes in scores on each QTI scale were found for each student, and also aggregated across classes (Table III), reducing the 2-within (time) x 2 between (classes) mixed design to a simple comparison. No differences were found between Groups 1 and 2 on teachers' experience or teachers' and students' age, grade, ethnicity, SES, or gender.

Distributions of mean pre-post change scores per teacher were acceptably normal, allowing the use of a t-test to contrast the CLIMATE groups. At the level of individual students' perceptions of their teacher's behavior, QTI change scores departed from normal distributions, being highly granular due to the design of the scales. Thus the non-parametric Mann-Whitney U test was appropriate for comparing CLIMATE groups. Note also that the individual student comparison violates the assumption of independence among observations, with the risk of inflating alpha; in this circumstance, Stevens (2002) recommends the response of seeking a more stringent alpha, e.g. 0.01. Table III includes t values (adjusted for non-equality of variance, if Levene's test indicated non-equality with $p \leq 0.01$), and effect sizes in r and Cohen's d; and U values, with effect sizes in terms of r.

Overall, scores on the student-report QTI deteriorated in the course of the year, but for many scales this was limited to teachers who had not improved their style of emotional behaviors. The Increase group was significantly better on all four QTI scales of desirable behavior (i.e. they displayed less negative or even zero

pre-post reductions). The Increase group was relatively better on the QTI Admonishing and Strictness and PRQ Prosocial scales (i.e. less positive or even zero pre-post increases). No differences were observed on the QTI Student Uncertainty and Student Dissatisfied scales, the PRQ Victim or Bullying scales, or any of the HIF scales. Significant findings are presented in Table III.

Our second hypothesis was that changes in teachers' emotional interactions would be reflected in students' positivity, negativity, emotional control, pro-social behavior, bullying, and victimization, using the HIF Questionnaire and PRQ to measure these outcomes at two points, pre and post intervention. The analysis follows the pattern of the previous paragraphs. Depending on changes in the teachers' CLIMATE scores, classes were organized into Increase and Decrease groups, while the 2 x 2 mixed design was reduced to a between-group comparison of pre-post change scores on each scale. Each comparison was performed at the level of teachers (i.e. aggregated values within each class) and individuals. Changes in Positivity and Negativity were combined into a 'Net Valence' score (Positivity – Negativity). Means, standard deviations, medians and effect sizes for the change scores are included in Table III.

The change scores followed acceptably normal distributions at both levels (the HIF and PRQ being more fine-grained than QTI scales), allowing the use of parametric statistics, but for consistency, the Mann-Whitney U test was applied as well as the t-test.

At the individual level of comparison, there are significant group differences for Net Valence, Pro-Social, and Victimization scales, and a borderline-significant difference on Negativity (the violation of observation independence at this level mandates a more stringent criterion of assessment). This is due to negative shifts for the Decrease group, while the Increase group is stable. Effect sizes are small, however. At the class level, only the Prosocial change scores are significantly different. Due to the small sample size in this analysis, large effect sizes were required in order to detect changes.

Discussion

We embarked on this study with the aim of improving teachers' social-emotional skills, measuring these changes, and assessing the influence these changes had on students' social-emotional behavior. As hypothesized, there was support for specific teachers' emotional behaviors changing over the course of one school year. Teachers who participated in the intervention decreased negative relating and use of setting limits, and improved in their awareness of emotional content and process in the classroom. No changes emerged for desirable limit-setting approaches, relationship development, emotion coaching, or emotional awareness of students. No differences emerged in students' emotions or school relationships as a result of these changes in teachers. Of concern was students' report of a worsening of teachers' leadership, helpfulness, understanding, and student responsibility/freedom.

What was puzzling in these data was the finding that, while teachers were predominantly observed to decrease their undesirable behaviors over time, students reported the difference between teachers who did and did not improve was whether they displayed comparatively more desirable behaviors. One possible explanation is that negative emotions brought about by undesirable interactions override students' perception

Table II. Paired-Sample t-test of Intervention Data

CLIMATE	*M* Time 1	*SD* Time 1	*M* Time 2	*SD* Time 2	*N*	*p* (2-tailed)	*t*	*r* (Cohen *d*)
Emotional Awareness	1.96	0.47	1.68	0.74	27	NS	-1.92	0.35 (-0.75)
Emotional Relationship – Desirable	1.98	0.51	1.89	0.64	27	NS	-0.74	0.14 (-0.29)
Emotional Interpersonal Guidelines – Desirable	0.43	0.44	0.32	0.43	27	NS	-0.84	0.16 (-0.33)
Emotion Coaching	0.23	0.48	0.33	0.38	27	NS	-0.85	0.16 (-0.33)
Emotional Relationship – Undesirable	2.01	0.47	1.61	0.54	27	0.006	-3.03	0.51 (-1.19)
Emotional Interpersonal Guidelines – Undesirable	2.38	0.63	1.64	0.56	27	< 0.001	-4.80	0.69 (-1.88)
Film Test of Exemplar Teacher								
Content	2.03	1.02	2.63	1.14	19	0.050	2.10	0.44 (0.99)
Process	1.21	0.95	1.95	1.01	19	0.010	2.89	0.56 (1.36)
Student completed Questionnaire of Teacher Interaction								
Leadership	2.49	0.17	2.35	0.31	24	0.008	-2.90	0.52 (-1.21)
Helping/friendly	2.45	0.25	2.32	0.44	24	0.060	-1.98	0.38 (-0.82)
Understanding	2.33	0.21	2.25	0.27	24	0.022	-2.47	0.46 (-1.03)
Student responsibility/ Freedom	1.75	0.20	1.64	0.24	24	0.039	-2.20	0.42 (-0.92)

Table III. Student completed Questionnaire of Teacher Interaction

Student QTI	*M* T1	*SD* T1	*M* T2	*SD* T2	Change	*SD*	*t*[22]	*p*	*r* (Cohen *d*)
Leadership									
Increase group	2.47	0.18	2.41	0.22	-0.06	0.16	2.427	0.024	0.46 (1.04)
Decrease group	2.54	0.17	2.24	0.42	-0.29	0.31			
Helping/friendly									
Increase group	2.45	0.27	2.44	0.39	-0.01	0.29	2.763	0.011	0.51 (1.18)
Decrease group	2.45	0.23	2.12	0.46	-0.33	0.26			
Understanding									
Increase group	2.31	0.20	2.29	0.27	-0.02	0.16	2.672	0.014	0.49 (1.14)
Decrease group	2.27	0.23	2.18	0.29	-0.19	0.11			
Student responsibility/ Freedom									
Increase group	1.70	0.16	1.71	0.17	0.01	0.11	3.733	0.001	0.62 (1.59)
Decrease group	1.82	0.24	1.53	0.31	-0.29	0.27			
Student Admonishing									
Increase group	1.63	0.30	1.65	0.34	0.02	0.16	-2.235	0.036	0.44 (0.95)
Decrease group	1.68	0.18	1.86	0.31	0.18	0.19			
Student Strict									
Increase group	1.92	0.19	1.87	0.20	-0.05	0.10	-2.319	0.030	0.44 (0.99)
Decrease group	1.93	0.21	2.02	0.27	0.10	0.20			
PRQ Prosocial									
Increase group	2.95	0.22	2.92	0.23	-0.03	0.26	2.304	0.031	0.44 (0.98)
Decrease group	3.00	0.28	2.67	0.45	-0.33	0.38			

Note. 1. Analyzed at level of **classes**. 15 in "Change" classes (increase), 9 in "No change" classes (decrease)

of others' (positive) behaviors. By decreasing undesirable behaviors, students notice the range of positive behaviors that may already be present in teachers' interactions.

An analysis of outcomes indicated that not all teachers improved. It is concerning that just over a third of teachers worsened on behavioral CLIMATE ratings. Whether teachers improved or not appeared to impact on students. Compared to non-improvers, teachers who improved on CLIMATE were perceived by students to be comparatively higher in leadership, more helpful/friendly and understanding, and foster more student responsibility/freedom. These findings are consistent with other studies that found teachers who emotionally scaffold and support students' emotional experiences were seen by students as more caring and helpful (Meyer & Turner, 2006; Patrick, et al., 2003; Wentzel, 1997).

An issue of concern was the regression over time of beneficial emotional behaviors irrespective of group. Use of a control comparison group and larger sample sizes may clarify whether or not a regression in emotional behavior typically occurs over the course of a school year. An analysis of data indicated the CLIMATE sub-scores for both groups were not different at pre-intervention. However, a range of events, such as change in lesson types, structures, school personnel (e.g., new school principals), or other school-wide initiatives are likely to influence student and teacher post-intervention data. There is also a possibility that teachers with decreasing CLIMATE scores exhausted the emotional resources required to enact emotional practices as the school year progressed. Indeed, Harvey and Naus (2015) argued that a short-coming to the model used in this study is that it "tends to locate the source of emotional skills and emotional climate within the teacher" (p. 365). They continue on to write that emotional "skills find their expression best within an emotionally supportive network… even if beneficial emotional skills are present in a teacher's behavioral repertoire, the state of teachers' own emotional health and energy will potentially influence the likelihood of them drawing on these skills in their practice". In other words, some teachers in this study may have understood particular emotional practices, but not had the emotionally supportive school culture, motivation, or the emotional wellbeing to use them. Their first film segment may have reflected a time at the start of the school term when they felt energized, fresh, and able to sustain a moderate level of emotional practice. However, as the school year progressed, difficulties may arise that hamper the ability to sustain these behaviors.

Relatedly, there is a consensus that one time workshops do not reliably result in sustainable practice change. This is because workshops often don't relate to personal teaching practices and may be detached from and differ in emphasis, goals, and method to teachers' current school programs (Loucks-Horsley & Matsumoto 1999). Instead teachers learn best 'in and from practice' (Center for Technology in Learning, 2009). The QLC methodology was chosen because it enables teachers to cover relevant material in-depth, allows teachers to bring their own ideas and material related to emotional practices to discuss and trial, while building relationships with a small group of colleagues (Lovett & Verstappen, 2004). Furthermore, teachers own practices were measured, filmed, and coded, and discussions around their results were raised for discussion within the QLC. Individuals were given data of their own behaviors as feedback, the QLC participants as a group, and a rigorously selected sample of exemplar teachers. Teachers found this feedback informative and encouraging, as there were many behaviors coded at the same frequency as exemplar teachers and a valuable point of discussion whenever clear differences emerged. Despite this, participants volunteered independently and not as part of a school-wide initiative. Therefore, participants did not receive organized practice support from school colleagues and management.

It should be noted that those teachers whose CLIMATE behavior improved did not show overall improvement on the questionnaire measuring teaching interaction (QTI). There were however, differences between teachers who improved or didn't improve in CLIMATE behavior on the QTI subscales leadership, helping/friendly, understanding, and student responsibility/ freedom. These results suggest some general slippage in the students' perspective of their teachers as they become increasingly aware and knowledgeable about their teachers throughout the school year. This decline seemed to be minimized when teachers'

CLIMATE behaviors improved. Unfortunately the repeated measures design prevents us from clarifying whether this slippage is a naturally occurring phenomenon. Employing a randomized control trial in any future research would enable researchers to control for this possibility.

A further point to make is the difference in constructs being measured. The QTI, for instance, measures teacher behavior related to management styles, such as leadership, strictness, and admonition. CLIMATE and the current intervention focused on the social-emotional skills teachers displayed. While it is worthwhile to evaluate whether a relationships does in fact exist between teachers' emotional responses and students' perception of their teachers' management style, a relationship between these two constructs is not guaranteed. There is also the possibility that these results can be explained according to perceptual or measurement differences. Teachers' and students' responses to the same scales on the QTI for instance, showed little correlation. If teachers' perceptions are likely to differ to students, they are also likely to differ to coders conducting behavioral observations.

The second hypothesis that changes in teachers' emotional behavior would lead to social and emotional changes in students was not supported. This may mean that changing target emotional behaviors has little or no relationship to changes in students' emotions and emotional skills—or simply that changes take longer to occur from environmental changes than the time allocated in this study. Given changes were noted in positive emotional relationships or limit setting, it may also mean this intervention wasn't effective in effecting the necessary changes. Alternatively, there may be issues with the measures used or the design and size of this study in detecting changes. Obtaining moderate effect sizes with non-significant p values suggests there was a significant issue of power with this study. Without the power to detect even large effect sizes with this study, these patterns must be interpreted with caution. Furthermore, an absence of a control group meant that naturally occurring changes from selection effects, maturation, familiarization of teachers to students, and the context of measurement (e.g., location and time) were unable to be controlled.

To address these issues, future research would do well to design randomized control trials within whole school settings. It would seem worthwhile to do as the implications are significant. First, it is important to isolate whether changes in teachers' own emotional behavior supports students' social-emotional development. The current intervention was based on the premise that students' socio-emotional skills are developed when everyday school emotion-evoking situations are used by teachers to identify and validate feelings, and to develop relationship and emotion management skills (Gottman, Katz, & Hooven, 1997). Implicit within this working model is the notion that learning is partially dependent on (but not entirely) the emergence of emotional situations and the social-emotional skills of the teacher to use these as teachable moments. Therefore, the transmission of these social-emotional skills occurs over the period of time. Unfortunately, the current study was hampered by a comparatively brief length of time between pre- and post-intervention. Measurement was unable to be conducted in the first and last semester of the school term and students in NZ typically change teachers annually. This left a two-semester window with which to collect data. Longer timeframes are required to evaluate the effects of teacher changes on others given others' perception of behavior is likely to lag any observed changes. Second, the idea of aligning assessment tools and intervention with frontline practice is essential. Further research is necessary to document ideal levels of

emotional practices across situations, demographics, the school year, and contexts, and ensuring intervention and assessment procedures are sufficiently in sync with each other and with practice. The challenge of developing a clear, reliable, workable assessment and intervention approach aimed at enhancing teachers' ability to create an emotional climate still remains. Observations of emotional practices may augment the use of self- and student-assessment measures; particularly given their associated limitations such as the ability of students to detect subtle changes in emotional practices. Finally, this research carries implications for incorporating social-emotional skills in teacher training, and indeed, the selection of teachers.

In summary, support was mixed for our two expectations. There was some evidence to suggest that teachers' social-emotional skills can improve as a result of formal training. The finding that teachers who improve their emotional interactions appear to effect better emotional outcomes with students was not supported. Additional research is necessary to account for some of the limitations of this study, such as inclusion of a control group, larger samples, and the development of specific psychometric measures targeting teachers' and students' social-emotional skills. Research such as this will take several years to complete; nevertheless, teachers who participated in this study insisted that understanding and effectively using social-emotional skills enhanced their practice and benefited their school environment. Such a demanding aspiration is worth pursuing for the benefit of teachers and students.

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