American Psychological Association

Translational Issues in Psychological Science


2332-2136/18/$12.00

2018, Vol. 4, No. 3, 245–264
http://dx.doi.org/10.1037/tps0000162

# Supporting Improvements in Classroom Climate for Students and Teachers With the Four Pillars of Wellbeing Curriculum

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Recent trends in classroom climate intervention research have expressed a need for evidence-based, whole-school approaches to well-being that cultivate safer, more effective learning environments. In a single-school pilot study, we used pre- and posttest methodologies to determine the extent to which the Four Pillars of Wellbeing curriculum enhanced the well-being and emotional climate of both teachers and students at Corbett Preparatory School, a Kindergarten through 8th grade private school in Tampa, Florida. Teacher well-being was assessed along 10 positive psychological outcomes, and student mood was assessed by tracking self-reported emotions over the course of 1 school year. After completing the evidence-based well-being intervention and tracking the school for 12 months, self-compassion, teaching efficacy, and feelings of contentment increased for teachers, and use of the program practices, correlated positively with subjective well-being, self-compassion, and negatively for stress. We also found that students' self-reported moods shifted into lower arousal positive states, which are optimal for classroom emotion regulation, focus, attention, and learning.

***What is the significance of this article for the general public?***
For the greater benefit of humanity, both students and teachers need positive classroom climates that cultivate safe, healthy, and happy places to learn. The Four Pillars of Wellbeing curriculum is a Kindergarten through eighth grade social, emotional, and well-being program designed to improve the classroom climate for all stakeholders. This study provides initial pilot evidence that well-being interventions targeting the whole school can be used to significantly improve the classroom learning environment for both teachers and students.

*Keywords:* well-being, social and emotional learning, classroom climate, education, school-based intervention



Since the beginning of the positive psychology movement at the turn of the century, dozens of programs have been developed to cultivate positive emotions, character traits, and institutions within school systems (Blank et al., 2010; Bonell et al., 2013; Felver, Celis-de Hoyos,

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Tezanos, & Singh, 2016). Although the content may vary, these programs typically focus on teaching a single component of social, emotional, philosophical, introspective, or wellness-based skills related to human flourishing and living a meaningful life (e.g., Bei et al., 2013; Nathanson, Rivers, Flynn, & Brackett, 2016; Shoshani & Steinmetz, 2014). Meta-analyses of such interventions demonstrate overall beneficial effects on a variety of health outcomes after successful implementations in areas such as mindfulness (Zenner, Herrnleben-Kurz, & Walach, 2014), bullying (Merrell, Gueldner, Ross, & Isava, 2008), prosocial behaviors (Wilson, Lipsey, & Derzon, 2003), and social and emotional learning (SEL; Durlak, Weissberg, Dymnicki, Taylor, & Schellinger, 2011). Although many of these programs are designed to fit seamlessly into the fabric of the existing school curricula and culture, a relatively small number of them have been tested empirically with regard to their whole-school impact on emotional health, well-being, and classroom emotional climate with both teachers and students (Muñoz & Vanderhaar, 2006; Rivers, Brackett, Reyes, Elbertson, & Salovey, 2013).

The purpose of the present investigation is to determine the extent to which a whole-school SEL and wellness program—the Four Pillars of Wellbeing curriculum—enhanced the psychological, social, and emotional climate of both teachers and students in one K-8 school. This pilot study without control aims to lay the groundwork for future work on interventions that improve well-being for both teachers and students.

## Why Positive Classroom Climate Matters

Decades of educational well-being intervention research have demonstrated the profound importance of cultivating a psychologically safe and healthy classroom climate on child development and learning outcomes (Morin, Marsh, Nagengast, & Scalas, 2014; Walberg & Anderson, 1968). The National School Climate Council defines positive classroom climate as environments that

> support people feeling socially, emotionally and physically safe. People are engaged and respected. Students, families and educators work together to develop, live, and contribute to a shared school vision. Educators model and nurture an attitude that emphasizes the benefits of, and satisfaction from, learning. Each person contributes to the operations of the school as well as the care of the physical environment. (2007, p. 4)

In response to this, reviews of classroom climate research have identified a need for comprehensive, whole-school approaches that address these fundamental development areas (Thapa, Cohen, Guffey, & Higgins-D'Alessandro, 2013). A whole-school well-being intervention would be any approach to human flourishing that is designed to train and impact every stakeholder within a school's ecosystem—including teachers, students, administrators, superintendents, family members, and greater communities. An example of a non-whole-school approach would be a one-off training that a few teachers attend and are then expected to teach the rest of their school or roll out the intervention in a single classroom.

Positive classroom climate has been associated with increases in academic success (Astor, Benbenishty, & Estrada, 2009), learning (Haahr, Nielsen, Jakobsen, & Hansen, 2005), motivation (Eccles et al., 1993), school retention rates (Dynarski et al., 2008), self-esteem (Hoge, Smit, & Hanson, 1990), unconditional self-acceptance (Cairns, 1987; Heal, 1978), and positive mental health outcomes (Ruus et al., 2007). Similarly, healthy classroom climates are associated with decreases in substance abuse (LaRusso, Romer, & Selman, 2008), psychiatric problems (LaRusso et al., 2008), behavioral problems and suspensions (Lee, Cornell, Gregory, & Fan, 2011), and aggression and violence (Gregory et al., 2010; Karcher, 2002). Taken together, dozens of studies have elucidated the profound importance of classroom well-being on the effectiveness of global education systems.

## The Significance of Teacher Well-Being

Positive classroom climates must be cultivated by the educator (National School Climate Council, 2007). Research suggests that the social and emotional competencies useful in improving classroom climate are context dependent; even individuals who may have high social and emotional competencies may not be able to translate those skills to the context of the classroom (Hargreaves, 1998; Jennings, 2015; Jennings & Greenberg, 2009). Therefore, it is suggested that teachers develop the social and

emotional competencies necessary for transforming their classrooms through context-specific training (Jennings, 2015). Specifically, whole-school approaches are recommended because of the fact that school factors (i.e., leadership support) have been shown to moderate the degree to which teachers exhibit social and emotional competencies (Jennings, 2015). In addition, it is suggested that whole-school approaches are integrated into schools in order to develop educator social and emotional competencies, and are based on that school's internal structure and culture (Jennings, 2015; Matsumoto, 2007). The need for research on teacher well-being has been recognized by public figures such as Congressman Tim Ryan of Ohio, who proposed a bill in May 2017 calling for the National Institutes of Health to run a study on teacher well-being and its effects on students in the classroom (Teacher Health and Wellness Act, 2017).

Research on the impact of SEL programs has focused primarily on student well-being outcomes; however, teacher well-being is a significant, and often forgotten, mediator (Jennings, Frank, Snowberg, Coccia, & Greenberg, 2013). The prosocial classroom theoretical model is unique in that it takes into consideration the importance of teacher social and emotional competence and well-being in relation to healthy student–teacher relationships, effective classroom management, and effective SEL implementation (Jennings & Greenberg, 2009). This model is based on research that demonstrates the significant impact of educator well-being on students and classrooms.

For example, educators who report higher levels of burnout and negative affect exhibit less care and sympathy toward their students and deal with disruptive behaviors less tolerantly (Blase, 1986; Farber & Miller, 1981; Hamre & Pianta, 2001). In addition, another study showed that teacher psychological differences account for more variation in classroom quality than amount of experience or education (La Paro et al., 2009). Other recent studies suggest that teachers who have higher levels of mindfulness, self-compassion, self-efficacy, and positive emotions exhibit higher levels of emotional support and are able to maintain a more positive classroom climate (Jennings, 2015). Since the development of the prosocial classroom theoretical model, which emphasizes the significance of teacher well-being, research on SEL programs has begun include more metrics on these important outcomes (Jennings, 2015; Jennings et al., 2013).

## The Role of Low-Arousal Pleasant Emotions in Motivation and Learning

More recently, there has been a wave of interest in educational psychology, child development, and neuroscience regarding how classroom emotional climate impacts judgment, motivation, and learning abilities (Qualter, Gardner, & Whiteley, 2007). There is broad agreement in the psychological and educational sciences that emotional states and well-being affect learning outcomes, depending on the situation and emotions it evokes (e.g., Elias & Arnold, 2006). In one series of studies across diverse classroom environments, it was found that pleasant moods such as interest, curiosity, excitement, focus, and pride in achievement facilitated greater student learning than negative moods (e.g., disappointment, stress, frustration, sadness, etc.; Boekaerts, 2010). Other studies build on applications of flow theory, which is hypothesized to be an optimal psychological performance state that is experienced when a task has a difficulty level that matches one's skill level (Csikszentmihalyi, 1975; Csikszentmihalyi & Csikszentmihalyi, 1988). Such classroom studies have demonstrated that pleasant emotions with low physiological arousal (e.g., focus, effortlessness, reflection) facilitated more flow-based learning than those with higher physiological arousal (Meyer & Turner, 2006).

In explaining the neurological underpinnings of these findings, recent studies in neuroscience have evidenced that pleasant moods involving lower psychophysiological arousal indicated by alpha brain oscillations improved creativity (Lustenberger, Boyle, Foulser, Mellin, & Fröhlich, 2015), focus (Bonnefond & Jensen, 2012; Händel, Haarmeier, & Jensen, 2011), memory recall (Klimesch, 2012), working memory (Roux & Uhlhaas, 2014), and learning (Mathewson et al., 2011). In contrast, other studies have indicated that pleasant moods involving higher psychophysiological arousal indicated by beta brain oscillations improved performance on active working tasks involving motor skills (Brittain & Brown, 2014) or engaging in active speech (Bidelman, 2015). In sum-

mary, it is important for classrooms to cultivate the emotions that best facilitate positive classroom climates and improved learning outcomes. Taken together, these findings support the theory that lower arousal pleasant emotions (e.g., focus, concentration, curiosity, calm, peace) may be best suited for learning in the classroom environment on tasks involving concentration, self-awareness, metacognition, and reflection (Seppälä, 2016). Higher arousal pleasant emotions, on the other hand, might be best suited for active tasks in schools involving physical activity, speech, debate, and project work performance (Pekrun, Götz, Titz, & Perry, 2002). Program interventions targeting improvements in classroom climate, such as the one used in the present study, would benefit from selectively cultivating low-arousal pleasant emotions best suited for learning, attention, and psychological well-being.

## Program Overview

The Four Pillars of Wellbeing curriculum draws on over 30 years of work in positive psychology (Seligman, Steen, Park, & Peterson, 2005), mindfulness (Zenner et al., 2014), and social and emotional research in classroom environments (Durlak et al., 2011; Greenberg et al., 2003). It is a single-year, structured series of lessons designed to enhance both teacher and student understanding of personal well-being, self-awareness, and maintaining flourishing classroom communities. The Four Pillars of Wellbeing curriculum are designed to improve the well-being curriculum skills of students and teachers in K-8 schools, while creating emotionally intelligent classroom environments that are optimized for teaching and learning.

The Four Pillars of Wellbeing curriculum uses an "understanding by design" approach, which is an effective curriculum development methodology that focuses on two steps: (a) planning to maximize learning transfer and assessment of learning outcomes, and (b) writing the lessons from the framework of the key learning transfer and outcomes (Wiggins & McTighe, 2005). The Four Pillars of Wellbeing curriculum presents effective self-awareness, emotional intelligence, and well-being strategies from evidence-based positive psychology school interventions. The curriculum is presented as collection of lessons that are rolled out as a series of four overarching well-being practices: Mindfulness, Community, Self-Curiosity, and Contentment & Balance. Table 1 summarizes the thematic content and lesson structure for each pillar.

In the Mindfulness series, 15 lessons review the practice of mindful breathing, a well-studied intervention in which students direct their attention inward and focus their awareness on the breath (Kabat-Zinn, 2003). As thoughts, emotions, and body sensations distract them away from the task of watching the breath, students bring their awareness back to the task. Over 500 peer-reviewed studies demonstrate the effectiveness of a daily mindful practice in decreasing stress, anxiety, and maladaptive behaviors, while increasing well-being, self-awareness, and the ability to regulate emotions (see Chiesa & Serretti, 2009; Grossman, Niemann, Schmidt, & Walach, 2004; Zoogman, Goldberg, Hoyt, & Miller, 2015).

After learning to sharpen their ability to experience their inner world, students move into the Community series, which is comprised of 10 lessons focused on prosocial behaviors that strengthen community and interpersonal relationships. Students learn to cultivate altruism (Batson & Powell, 2003), empathy (Durlak et al., 2011), compassion (Gilbert, 2005), forgiveness (Harris et al., 2006), and loving kindness (Hofmann, Grossman, & Hinton, 2011) toward one another.

The Self-Curiosity series focuses on teaching students how to generate an attitude of curiosity and interest toward all of their emotional experiences, a critical practice in the development of social and emotional intelligence (Mayer, Salovey, & Caruso, 2000). This section is comprised of eight lessons that bolster student metacognition and emotional understanding. Using introspective questioning techniques from the self-reflection literature (Salovey, Mayer, Caruso, & Yoo, 2008), this series teaches adults and children to understand what triggers them emotionally, why, and what they can do to change the stories/perspectives that created the triggers through simple reappraisal or acceptance practices.

The Contentment & Balance series provides 10 lessons for cultivating a sense of unconditional self-acceptance (Chamberlain & Haaga, 2001; Cordaro, Brackett, Glass, & Anderson, 2016) and developing healthier, more accepting

Table 1
*Four Pillars of Wellbeing Curriculum Overview and Lessons*

| Lesson number | Mindfulness | Community | Self-Curiosity | Contentment |
|---|---|---|---|---|
| Theme: | Self-awareness | Selfless service | Self-questioning | Self-acceptance |
| Lesson 1 | Introduction & Mindful Posture | Introduction to Selfless Service | Introduction to Self-Curiosity | Introduction to Contentment |
| Lesson 2 | Finding the Breath | Understanding Altruism | Types of Questioning | Types of Relationships to Experiences |
| Lesson 3 | Mindful Listening | Generating Empathy | From Reactivity to Curiosity | Obsession with More vs. Appreciating Enough |
| Lesson 4 | Words to Support Concentration | Cultivating Compassion | Emotions as Perspectives | Allowing Unpleasant Experiences |
| Lesson 5 | Mind Wandering & Distractions | Compassionate Listening | The Fascinating Five | Allowing Pleasant Experiences |
| Lesson 6 | Self-Kindness During Distraction | Wellness Buddies Core Practice | Embodied Curiosity | Visiting Feelings Core Practice |
| Lesson 7 | Mindfulness of Body Sensations | Loving Kindness | Being the Observer | Gratitude for All Emotions |
| Lesson 8 | Mindfulness of Thoughts | Giving & Receiving Gratitude | Self-Curiosity in Everyday Life | Cultivating Self-Compassion |
| Lesson 9 | Mindfulness of Emotions | Trust & Collaboration | | Unconditional Acceptance of Others |
| Lesson 10 | Putting it All Together | Selfless Service in Everyday Life | | Contentment in Everyday Life |
| Lesson 11 | Mindful Standing | | | |
| Lesson 12 | Mindfulness in Slow Motion | | | |
| Lesson 13 | Mindful Walking | | | |
| Lesson 14 | Mindfulness and the Brain | | | |
| Lesson 15 | Mindfulness in Everyday Life | | | |

relationships to all emotional experiences (Hayes, Luoma, Bond, Masuda, & Lillis, 2006). Ineffective strategies for managing emotions, such as suppression, avoidance, and attachment, can lead to maladaptive behaviors, poor learning outcomes, and greater susceptibility to mental illness later in life (Aldao, Nolen-Hoeksema, & Schweizer, 2010; Gross & Thompson, 2007). In the Contentment & Balance series, students and teachers develop a more positive and accepting relationship to the rollercoaster of emotions that they experience every day, a critical part of developing healthy and effective classroom learning environments (Brackett & Katulak, 2006).

In summary, the Four Pillars of Wellbeing curriculum leverages existing curricula, interventions, and concepts across positive psychology, and it is designed to improve teacher and student well-being, classroom climate, self-awareness, and learning outcomes. The full Four Pillars of Wellbeing curriculum is rolled out across one academic year, but schools may also choose to teach the materials at a more rapid pace (minimum of 4 months). In general, the best practice with this program would be to present one 20-min lesson every other week, depending on the teachers' needs. This equates to only 15 classroom hours across an entire school year to roll out all four pillars.

The Four Pillars of Wellbeing curriculum is designed to improve the lives of both teachers and students. Teachers across the entire school are involved in a 2-day training, in which they learn about the nature of the program, the science and philosophy behind the pillars, and receive an overview of the practice. The teachers then receive access to an online course, which takes 1 hr to complete and provides deeper understanding of key terms and practices (e.g., mindfulness, compassion, contentment). Teachers may access the course on an as-needed basis throughout the academic year, and they are also encouraged to practice the well-being techniques outside of school to maximize the benefits, but this is not a program requirement.

Students receive one 20-min lesson each week or every 2 weeks depending on the teachers' schedules. The lessons include a review of what was learned previously, a new well-being concept, and one practice related to the concept (e.g., watching the breath, forgiveness, compassionate listening). Nearly all lessons include

ways for teachers to assess student understanding through worksheets, discussions, readings, and journal entries.

## The Present Investigation

The single-school pilot study presented here provides the initial testing of a comprehensive and theoretically grounded program for enhancing the well-being, self-awareness, and classroom climate for student learners and their educators. We used a pre- and posttesting method to evaluate the extent to which a successful implementation of The Four Pillars of Wellbeing curriculum would increase well-being, classroom climate, and emotional understanding in both teachers and students. Based on meta-analyses of similar intervention programs (Wilson et al., 2003; Zenner et al., 2014), we expected moderate effect sizes for outcomes directly related to the program (e.g., mindfulness, self-compassion) and small effect sizes for outcomes indirectly related to the program (e.g., burnout, stress).

*Hypothesis 1—Teacher direct outcomes:* Implementing the program will increase the well-being of educators via specific domain areas directly related to the concepts taught in the program's lessons, as indicated by measures of mindfulness, self-compassion, contentment, and teaching efficacy.

*Hypothesis 2—Teacher indirect outcomes:* Implementing the program will increase the general well-being of educators as indicated by measures indirectly related to the program's lessons (e.g., burnout, psychological well-being, relationship satisfaction, job satisfaction, and perceived stress).

*Hypothesis 3—Implementation fidelity:* Positive well-being outcomes will be correlated with the degree to which teachers used the practices both personally and in the classroom.

*Hypothesis 4—Student emotional climate:* After 1 year of successful implementation, the emotional climate of the students will shift toward lower arousal pleasant emotions ideal for learning in the classroom (e.g., calm, focused, curious, creative).

*Hypothesis 5—Student emotional intelligence:* After implementing the program, students will have a better understanding of the emotions they experience every day as measured by improvements in emotional granularity (e.g., Yoon, Desmet, & Pohlmeyer, 2013).

## Method

### Participants

Data were collected from teachers and students from Corbett Preparatory School (hereafter, "Corbett Prep"), a private school located in Tampa, Florida. This school implemented the Four Pillars of Wellbeing curriculum over the 2016–2017 school year. The self-reported demographics of the teachers ($N = 49$) included 37 females and 12 males, with a mean age of 45.9 years ($SD = 11.28$). The self-reported ethnicity distribution of the teachers was 87.8% Caucasian, 2.0% Hispanic/Latino, 2.0% African American, and 8.2% Other.

The students in this sample included students in prekindergarten to students in eighth grade ($N = 507$), with 258 males and 249 females. The mean age of the student population was 9.3 years, and the school record reported ethnicity distribution of the students as 53% Caucasian, 15.5% Hispanic/Latino, 9.9% Asian/Indian, 8.2% Multiracial, 6.9% African American, 3.2% Asian American, 2.4% Middle Eastern, and 0.4% Native American.

### Survey Design and Procedure

Teachers took two different types of surveys: one comprehensive biannual well-being survey and one short, weekly implementation fidelity survey. The biannual survey was administered prior to and after implementation of the intervention (May 2016 and June 2017). This survey included a battery of validated self-report measures that focused on outcomes hypothesized to improve as a result of a successful program implementation. The survey was distributed using an e-mail link through the Qualtrics online survey system, which had response rates of 96% at Time 1 and 87% at Time 2.

The shorter implementation fidelity and well-being survey was administered once per week over the entire year. This survey assessed three

variables: teacher subjective well-being (Diener, Emmons, Larsen, & Griffin, 1985), total number of minutes that teachers spent teaching the program in their classroom that week, and the total number of minutes that teachers spent practicing the content of the program personally that week. Teachers were not required to engage in the well-being practices on a personal or at-home basis; however, we hypothesized that those who did would experience greater benefit from the practices. This survey was distributed using an in-house program that was designed to send teachers Text Message reminders each week that the implementation fidelity survey was ready for them to take. The Automated Virtual Assessment System successfully kept track of which teachers responded to the survey and sent up to three reminders to those who did not. Average response rate across the year was 87.3% (*SD* = 4.91%).

### Biannual Measures for Teachers

**Occupational burnout.** The Maslach Burnout Inventory – Educators Survey (Maslach, Jackson, & Leiter, 2006), a well-validated 22-item scale that measures occupational burnout, which consists of emotional exhaustion, personal accomplishment, and depersonalization. Teachers are asked to report how often they experience the situations stated in the items on a Likert-type scale ranging from 0 = *never* to 6 = *a few times a week*. Scores can range from 0 to 132, with higher composite scores indicating a higher sense of occupational burnout. This instrument consists of three subscales: Emotional Exhaustion, Depersonalization, and Personal Accomplishment. Emotional Exhaustion has an internal consistency of 0.90 (Cronbach's alpha); reliability ranges from 0.60 to 0.82. Depersonalization has an internal consistency of 0.76 (Cronbach's alpha); reliability ranges from 0.54 to 0.60. Personal Accomplishment has an internal consistency of 0.76 (Cronbach's alpha); reliability ranges from 0.57 to 0.80 (Iwanicki & Schwab, 1981; Jackson, Schwab, & Schuler, 1986; Maslach et al., 2006). Examples of items are "I feel emotional drained from my work" and "I feel students blame me for some of their problems."

**Psychological well-being.** Ryff's Scales of Psychological Well-Being (Ryff, 1989) consist of 42 items that measure levels of psychological well-being. Theories regarding eudaimonic psychological well-being focus on six components: self-acceptance, personal growth, purpose in life, positive relations with others, environmental mastery, and autonomy (Ryff & Keyes, 1995). Participants are asked to report their level of agreement to the 42 items using a Likert-type scale ranging from 1 = *completely disagree* to 6 = *completely agree*. Scores can range from 42 to 252, with higher composite scores indicating higher levels of psychological well-being. This instrument has an internal consistency ranging from 0.86 to 0.93 (Cronbach's alpha) and a reliability ranging from 0.81 to 0.88 (Ryff, 1989). Examples of items are "I have a sense of direction and purpose in life" and "I like most aspects of my personality."

**Contentment.** The Positive Emotion Assessment of Contentment Scale (Cordaro et al., 2017) is a 15-item instrument that measures levels of positive emotions and feelings of contentment. Contentment is an emotion that describes a sense of self-completeness without the need to change anything in the present moment (Cordaro et al., 2016). This emotion describes an individual's deeper introspective sense of well-being, balance, and fulfillment (Cordaro et al., 2016). This scale asks participants to report their level of agreement to the 15 items using a Likert-type scale ranging from 1 = *completely disagree* to 7 = *completely agree*. Scores can range from 15 to 105, with higher composite scores indicating higher levels of contentment. This instrument has an internal consistency ranging from 0.95 to 0.91 (Cronbach's alpha) and test–retest reliability of 0.86. Examples of items are "Overall, my relationships with others are easy to manage" and "I am satisfied with everything that life has to offer each and every moment."

**Relationship satisfaction.** The Relationship Satisfaction Scale (Burns, 1993) is a seven-item instrument that assesses the subjective strength and positivity of one's important relationships in life in general. Positive relationships are important for an individual's health and sense of well-being (Cohen, 2004). In addition, the relationships that teachers have with their students have a strong effect on student learning outcomes (Spilt, Koomen, & Thijs, 2011). For example, studies have shown that negative and conflicting teacher–student relationships have debilitating effects on a student's

ability to learn (Hamre & Pianta, 2001). This scale asks teachers to report their level of satisfaction with the characteristics of general relationships mentioned in the items using a Likert-type scale ranging from 0 = *very dissatisfied* to 6 = *very satisfied*. Scores can range from 0 to 42, with higher composite scores indicating higher satisfaction with relationships. Examples of items are "Degree of affection and caring" and "Satisfaction with your role in the group."

**Teacher efficacy.** The Teachers' Sense of Efficacy Scale Short Form (Tschannen-Moran & Hoy, 2001) is a 12-item instrument that measures teachers' evaluation of their own beliefs about their effectiveness. Teacher efficacy is defined as "teachers' beliefs in their abilities to organize and execute courses of action necessary to bring about desired results" (Tschannen-Moran, Hoy, & Hoy, 1998, p. 210). Teachers with self-reported high efficacy believe that they can manage their students effectively, elicit positive emotions in their classes, and help students develop important skills. This instrument asks teachers to report their agreement with the items using a Likert-type scale ranging from 1 = *strongly agree* to 6 = *strongly disagree*. Scores can range from 12 to 72, with higher composite scores indicating a higher sense of perceived efficacy. This instrument has an internal consistency ranging from 0.60 to 0.85 (Cronbach's alpha) and a reliability of .90 (Tschannen-Moran & Hoy, 2001). Examples of items are "To what extent can you use a variety of assessment strategies?" and "How much can you do to control disruptive behavior in the classroom?"

**Self-compassion.** The Self-Compassion Scale Short Form (SCS-SF; Raes, Pommier, Neff, & Van Gucht, 2011) is a 12-item instrument measuring the three components of self-compassion: self-kindness, common humanity, and mindfulness. The construct of self-compassion involves treating oneself with kindness and nonjudgment, being open toward oneself, and seeing one's suffering as a common experience of all humans (Neff, 2003). Self-compassion is an effective emotion regulation strategy that is associated with various positive mental health outcomes (e.g., Blatt, Quinlan, Chevron, McDonald, & Zuroff, 1982). Studies have shown that individuals with high levels of self-compassion have lower levels of anxiety and depressions and have better social connections (Wood, Saltzberg, Neale, Stone, & Rachmiel, 1990). The scale asks participants to report how often they behave in the manner stated in the item using a Likert-type scale ranging from 1 = *almost never* to 5 = *almost always*. Scores can range from 12 to 60, with higher composite scores indicating higher levels of self-compassion. The SCS-SF has an internal consistency of 0.86 (Cronbach's alpha) and a reliability of .097 (Raes et al., 2011). Examples of items are "I try to see my failings as part of the human condition" and "When something painful happens I try to take a balanced view of the situation."

**Job satisfaction.** The Generic Job Satisfaction Scale is a 10-item instrument used to measure how satisfied people feel with their careers (Macdonald & MacIntyre, 1997). Job satisfaction focuses primarily on past and present experiences at one's place of employment. This concept is correlated with many important well-being outcomes, including stress (Ramanathan, 1991), turnover, and attendance (Gregson, 1990). The scale asks participants to report their agreement with the items using a Likert-type scale ranging from 1 = *strongly disagree* to 6 = *strongly agree*. Scores can range from 10 to 60, with higher composite scores indicating higher levels of job satisfaction. This instrument has an internal consistency of 0.77 (Cronbach's alpha; Macdonald & MacIntyre, 1997). Examples of items are "I receive recognition for a job well done" and "I believe that those in charge are looking out for me."

**Perceived Stress Scale 10-Item Inventory.** The Perceived Stress Scale 10-Item Inventory (PSS-10; Cohen, Kamarck, & Mermelstein, 1983) is an instrument used for measuring the degree to which situations in one's life are perceived as stressful (acute and chronic stress can have deleterious effects on individuals both at a physical and psychological level; Paykel, 2001; Schneiderman, Ironson, & Siegel, 2005). Studies have shown that individuals with higher levels of stress show increased signs of depression and anxiety (Hammen, 2005). The scale asks participants to report how often they have experienced the situation described in the item on a Likert-type scale ranging from 1 = *never* to 4 = *very often*. Scores can range from 0 to 40, with

higher composite scores indicating higher levels of perceived stress. The PSS-10 has an internal consistency ranging from 0.75 to 0.86 (Cronbach's alpha) and a reliability of 0.85 (Cohen, Kamarck, & Mermelstein, 1983). Examples of items are "In the last month, how often have you been upset because of something that happened unexpectedly?" and "In the last month, how often have you felt difficulties were piling up so high that you could not overcome them?"

**Mindfulness.** The Cognitive and Affective Mindfulness Scale—Revised 10-item version (Feldman, Hayes, Kumar, Greeson, & Laurenceau, 2007) is an instrument that measures self-reported mindfulness. Mindfulness has been defined as "the awareness that emerges through paying attention, on purpose, in the present moment, and nonjudgmentally to the unfolding of experience moment to moment" (Kabat-Zinn, 2003, p. 145). The scale asks participants to rate how often they experience the situations stated in the items on a Likert-type scale ranging from 1 = *rarely/not at all* to 4 = *almost always*. Scores can range from 10 to 40, with higher composite scores indicating higher levels of mindfulness. This instrument has an internal consistency ranging from 0.74 to 0.80 (Cronbach's alpha; Feldman et al., 2007). Examples of items are "I am able to accept the thoughts and feelings I have" and "It is easy for me to concentrate on what I am doing."

## Student Measures

Teachers distributed the student survey four times to all students in the months of May and June 2016 and in January and February 2017. Students were asked to report on how they were feeling using an emotion plotting tool called the Mood Meter (see Figure 1), a coordinate grid used to visually represent the full spectrum of human emotion in terms of two dimensions: pleasantness and energy (Brackett & Kremenitzer, 2011). This tool is part of RULER, an SEL program, which all students were regularly using since 2015, more than a year before the current investigation began. Therefore, all students were comfortable and familiar with using the Mood Meter to communicate their emotional states.

This tool asks students to evaluate the pleasantness and the energy of the emotion they are feeling on a coordinate grid, on a scale ranging from −5 (*extremely unpleasant/low energy*)

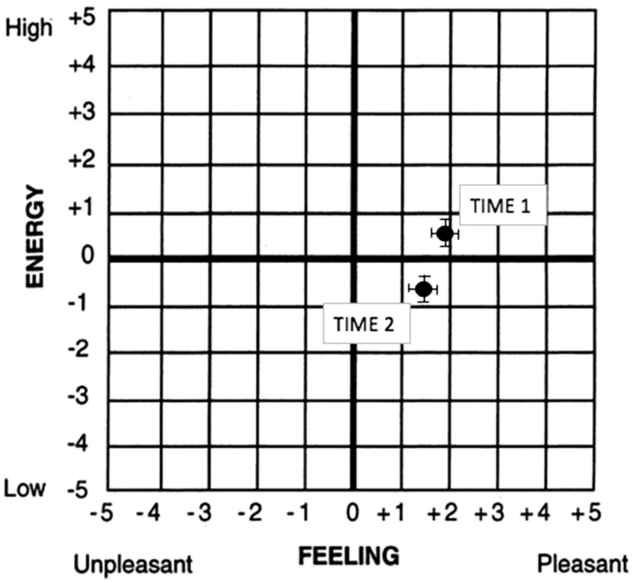


*Figure 1.* Average self-reported student mood plots at Time 1 and Time 2. Error bars indicate standard error.

to +5 (*extremely pleasant/high energy*). The intersection of pleasantness and energy ratings on the grid creates a coordinate point indicating an emotional state. Students also provide an emotion word or words to describe the coordinate point.

## Results

### Teacher Results

**Pre–post comparisons of well-being outcomes.** Nine repeated measure analyses of variance (ANOVAs) were conducted to explore the a priori hypotheses related to the changes across the nine biannual well-being survey measures. A correction for multiple testing was performed using the Benjamini-Hochberg method at a false discovery rate of 5% (Benjamini & Hochberg, 1995).

The repeated measures ANOVA with a Benjamini-Hochberg false discovery correction ($p \leq .05$) revealed the statistically significant effects of time on levels of contentment, $F(1, 48) = 13.931$, $p = .001$, $\eta_p^2 = .225$, self-compassion, $F(1, 48) = 8.525$, $p = .005$, $\eta_p^2 = 0.15$, and teaching efficacy, $F(1, 48) = 6.087$, $p = .017$, $\eta_p^2 = .115$.

Although all nine variables improved in the expected directions, the impact of time on the remaining measures was not significant with the Benjamini-Hochberg correction of 5%: mindfulness, $F(1, 48) = 4.510$, $p = .039$, $\eta_p^2 = .086$, occupational burnout, $F(1, 48) = .396$, $p = .532$, $\eta_p^2 = .008$, psychological well-being, $F(1, 48) = .002$, $p = .964$, $\eta_p^2 =$, 008, relationship satisfaction, $F(1, 48) = .002$, $p = .963$, $\eta_p^2 = .000$, job satisfaction, $F(1, 48) = .515$, $p = .476$, $\eta_p^2 = .011$, and perceived stress, $F(1, 48) = .024$, $p = .878$, $\eta_p^2 = .000$. Table 2 summarizes the direct and indirect outcome changes.

**Implementation fidelity and subjective well-being analysis.** Three Pearson correlations were used to analyze the associations between subjective well-being at Time 2, total number of minutes spent teaching the program in class, and total number of minutes spent practicing the program content personally. Teachers reported an average of 1,770.8 min of class practice ($SD = 4,918.4$) and 1,592.1 min of personal practice ($SD = 2,014.1$). Teachers spent an average of 48.865 min each week of the school year implementing the curriculum, with a range of 0 min to 960 min ($SD = 67.917$).

Program minutes spent in class and program minutes spent personally both correlated with teacher subjective well-being, $r(49) = .326$, $p = .022$, and $r(49) = .355$, $p = .012$. The total number of minutes spent on the intervention in class was also correlated with total number of minutes spent practicing personally, $r(49) = .330$, $p = .020$.

**Implementation fidelity and biannual survey outcome analysis.** The third analysis that was conducted correlated survey outcomes at Time 2 with the implementation fidelity measurements: time spent on program materials in school and time spent on program materials as a personal practice.

The total number of minutes spent on the program in class positively correlated with lev-

Table 2
*Direct and Indirect Outcome Changes at Pre- and Postintervention Times*

| Outcomes | Preintervention | | Postintervention | | | | |
|---|---|---|---|---|---|---|---|
| | *M* | *SD* | *M* | *SD* | *F* | *p* | $\eta_p^2$ |
| Contentment | 3.606 | 1.072 | 3.992 | .971 | 13.931 | .001[a] | .225 |
| Self-compassion | 2.476 | .683 | 2.696 | .657 | 8.525 | .005[a] | .151 |
| Teaching efficacy | 6.688 | .811 | 6.934 | .821 | 6.087 | .017[a] | .115 |
| Mindfulness | 1.859 | .349 | 1.949 | .357 | 4.510 | .039 | .086 |
| Job satisfaction | 3.425 | 1.001 | 3.518 | 1.039 | .515 | .476 | .011 |
| Burnout | 1.395 | .778 | 1.346 | .726 | .396 | .532 | .008 |
| Perceived stress | 1.456 | .698 | 1.445 | .546 | .024 | .878 | .000 |
| Relationship satisfaction | 4.336 | 1.168 | 4.372 | .971 | .002 | .963 | .000 |
| Psychological well-being | 2.819 | .691 | 2.824 | .592 | .002 | .964 | .000 |

[a] Significant with Benjamini-Hochberg false discovery rate of 5%.

els of teacher self-compassion at Time 2, $r(49) = .303$, $p = .035$. There were also correlations trending in the expected direction for stress, $r(49) = -.268$, $p = .063$, burnout, $r(49) = -.271$, $p = .059$, contentment, $r(49) = .213$, $p = .142$, teacher efficacy, $r(49) = .224$, $p = .127$, and mindfulness, $r(49) = .203$, $p = .163$; however, these latter relationships were not significant at $\alpha = .05$.

The total number of minutes spent practicing the program as a personal practice correlated with levels of self-compassion, $r(49) = .350$, $p = .014$, and stress, $r(49) = –.338$, $p = .018$, at Time 2. There was also a correlation trending in the expected direction for contentment, $r(49) = .266$, $p = .064$, but this was not significant. Table 3 describes the correlations between the two implementation fidelity measures and 10 outcome measures.

## Student Results

When analyzing student mood and emotion word reports, the data were combined according to preintervention and late intervention. Data from May and June 2016 were categorized as preintervention, whereas January and February 2017 were categorized a late intervention.

Average Mood Meter x- and y-coordinates were calculated for each of the time points. For students who did not provide an exact coordinate, but rather simply chose a quadrant, a centralized quadrant coordinate point was given (+/–3, +/–3). The average coordinate point for the preintervention time point was X ($N = 706$, $M = 1.807$, $SD = 2.763$) and Y ($N = 706$, $M = 0.487$, $SD = 3.137$). The average coordinate point for the late intervention time point was X ($N = 847$, $M = 1.468$, $SD = 2.455$) and Y ($N = 847$, $M = -0.637$, $SD = 2.917$). A repeated measures ANOVA was conducted to test the hypothesis that Time 1 (1.807x, 0.487y) and Time 2 (1.468x, −0.637y) differed. Both the changes in x and y were significant across the two time points: *x*-coordinate, $F(1, 705) = 15.365$, $p < .001$; *y*-coordinate, $F(1, 705) = 25.456$, $p < .001$ (see Figure 1).

In addition, we evaluated the granularity of emotion words that students provided as free responses to the Mood Meter check-in. Each unique word given by a student was given a score of 1, and unique words were counted for pre- and postassessments. In order to control for differences in sample sizes between the two time points, the total unique emotion words for each time point was divided by the number of students who took the survey during that time point. Dividing the number of unique emotion words by the number of students provided data on the number of unique emotion words per respondent. Time 1 included 706 responses, and 115 unique emotion words were coded; therefore, there were (115/706) = .163 unique emotion words provided by each student. Time 2 included 847 responses, and 155 unique emotion words were coded; therefore, there were (155/847) = .183 unique emotion words provided by each student. Overall there was a 12% ({[0.183 – 0.163]/0.163} * 100) increase in unique emotion words provided at Time 2, and a repeated measures ANOVA revealed that this increase was significant, $F(1, 706) = 42.339$, $p < .001$. Figure 2 provides examples of words used by students.

Table 3
*Correlations Between Teacher Time Spent on Materials and Well-Being Outcomes*

| Outcome | Time spent on materials | |
|---|---|---|
| | Classroom | Personal |
| Subjective well-being | .326* | .355* |
| Self-compassion | .303* | .350* |
| Perceived stress | –.268 | −.338* |
| Contentment | .213 | .266 |
| Burnout | –.271 | −.162 |
| Teaching efficacy | .224 | .106 |
| Mindfulness | .203 | .132 |
| Job satisfaction | .182 | .162 |
| Relationship satisfaction | .157 | .129 |
| Psychological well-being | .157 | .080 |

* $p < .05$.

# Discussion

## Direct Teacher Outcomes

This study provides preliminary data supporting the Four Pillars of Wellbeing curriculum to enhance the self-awareness, well-being, and classroom climate in a pilot school. Consistent with Hypothesis 1, outcomes related directly to the program's teachings, such as self-compassion, contentment, and teaching efficacy, improved for teachers within the first year of rollout. The medium to large effect sizes are


*Figure 2.* Word frequency clouds of student responses at Time 1 and Time 2.

consistent with those reported in the education literature (Field, 2009), and the well-being outcomes for self-compassion, contentment, and teaching efficacy saw the greatest improvements during the intervention measurement period. The Four Pillars of Wellbeing curriculum strongly incorporate notions of self-compassion and unconditional self-acceptance in each of its four development areas, and so it is reasonable that the strongest effects were seen in these two well-being outcomes. It was also hypothesized that teaching efficacy would improve, based on research-driven theory regarding the important relationship between well-being and teaching ability. These findings indicate that this program may be beneficial to the teachers, which suggests that it may also be beneficial for their students; research has shown that the well-being of teachers directly impacts classroom climate and student–teacher relationships (Blase, 1986; Farber & Miller, 1981; Hamre & Pianta, 2001; Jennings et al., 2013). This is a primary reason why teacher well-being was assessed more heavily than student well-being in this investigation, and future studies would benefit from a similar level of importance placed on outcomes at the teacher level.

## Indirect Teacher Outcomes

We also hypothesized that indirect teacher well-being outcomes like burnout, stress, and so forth would improve in the expected directions, but to a smaller effect than the direct outcomes (Hypothesis 2). No differences emerged for burnout, psychological well-being, relationship satisfaction, job satisfaction, and stress in Time 2 compared with Time 1. One likely reason for this is that we only evaluated the program outcomes over 12 months, and so additional time may be required before we see whole-school well-being improvements across all teachers. Interventions targeted at these well-being areas tend to be more intensively focused on individual-level improvements (Abel & Sewell, 1999; Fernet, Guay, Senécal, & Austin, 2012).

Implementation fidelity was operationalized as the number of classroom minutes spent per week using the program as well as number of minutes spent using the program for personal practices. We found a moderate correlation between both of these variables and overall subjective well-being at Time 2 (Hypothesis 3). Although this is not evidence for causation, it is a promising finding that supports future investigations on the extent to which the use of this program may positively impact teachers' health and well-being across the school year. We also found a positive correlation between teacher self-compassion and use of the program in the classroom. It is reasonable to consider that if philosophies related to kindness to self and others become seamlessly integrated into the school environment where teachers spend a majority of their time, it would become a part of the individual teacher's philosophy as well. Interestingly, our analysis also revealed that personal use of the Four Pillars materials correlated with individual ratings of self-compassion, making this area of psychological well-being the

strongest outcome from this pilot study. Lastly, we found that self-reported stress at Time 2 was negatively correlated with teachers' personal use of the program's philosophies, indicating that a personal relationship with the well-being concepts may be a critical component for alleviating general anxiety in school.

### Direct Student Outcomes

After analyzing student-reported plots on the Mood Meter, our analyses showed a significant shift in overall student mood from Time 1 to Time 2 toward the low-arousal pleasant quadrant of the scale (Hypothesis 4). The domain areas of the Four Pillars curriculum have an emphasis on cultivating peace, calm, curiosity, acceptance, kindness, love, gratitude, cooperation, and so forth, and many of these concepts are broadly considered low-arousal pleasant states in the emotion psychology literature (Russell, 1978). It is a promising finding that students at our pilot school reported greater instances of these types of emotions for students in the classroom, because these are, in general, the most effective kinds of emotions for facilitating classroom learning (Creemers & Reezigt, 1999; Harvey, Bimler, Evans, Kirkland, & Pechtel, 2012; Jones, Bouffard, & Weissbourd, 2013). Furthermore, upon analyzing the students' free response emotion words given at Time 1 compared with Time 2, we found a 12% improvement in emotion granularity across the year. At the end of the rollout, students were using a more varied, richer emotion vocabulary to describe their experiences, which is likely because of the emphasis on introspection and emotional communication across all four domain areas of the program. Increases in emotion granularity and ability to introspect are also possible explanations for why the pleasantness of the emotions decreased slightly over the year (Lindquist & Barrett, 2008). When students are able to draw from a more refined understanding of emotions beyond "happy" and "sad," more nuanced states emerge that are not always ecstatically pleasant.

### Limitations and Future Directions

Although these results are promising, they are not without limitations and subsequent possibilities for future directions. This was a small, single-school pilot study, and so we were not able to randomize students and teachers into a control group. Because of this, the effectiveness of the curriculum can only be inferred from the combination of our Time 1 to Time 2 analysis and the correlations with implementation fidelity. More robust findings could be derived from the use of experimental methodology involving, ideally, a control group, an active control group, and a Four Pillars of Wellbeing curriculum intervention group. Although the results suggest that this program had an impact on the well-being of our pilot school, they should be interpreted as preliminary until replicated with a true experimental design with multiple classrooms, which is now in process.

A second limitation is with regard to the sample size. As a foundational pilot study, we were limited to a single school rather than a diverse range of schools spanning socioeconomic, cultural, and locational demographics. The setting of Corbett Prep was appropriate for an initial pilot study because of the school's strong dedication to new interventions, data collection, and student well-being. The implications of this are that we had a study population that was relatively small and, perhaps more importantly, lacking in diversity. Until these results are replicated in a variety of different schools both nationally and internationally, we cannot conclude that the Four Pillars of Wellbeing curriculum would be appropriate in its current form for all classrooms. A study of this magnitude would also allow us to analyze the independent influences of student and teacher demographics, such as gender, ethnicity, socioeconomic background, and home setting (rural/urban), which we were unable to do in the present investigation. Such an analysis would allow us to modify the program so that it is more culturally responsive to a variety of cultural environments. We would also be able to make confident determinations about whether increases in emotion vocabulary are because of our program rather than because of normal childhood development. Because we only studied one school in the present investigation, our data are susceptible to school-specific fluctuations in mood and subjective well-being that naturally arise with the ebb and flow of each school year. A larger study would allow us to control for these school-specific differences and yield more generalizable results in addition to

exploring grade-level differences through hierarchical cluster analyses.

The Four Pillars of Wellbeing curriculum is meant to be a continued practice for the entire school well beyond the first year of rollout; however, the time limitations of this study restricted us to a period of only 12 months. We are continuing to collect data at Corbett Prep and will report in the coming years on our long-term findings, and we also recognize the need for longitudinal studies across a larger, more diverse array of schools in a random-assignment type of experiment. With respect to student findings, because of bandwidth limitations for teachers and administrators, we ended our student mood data collection in February. In future studies, we would pare down and simplify the measures significantly to reduce the workload for all stakeholders.

All of these limitations notwithstanding, we would expect the promising findings of the present investigation to at least be maintained long term, if not strengthened, by continued use of the program. We would also expect indirect outcomes like burnout, job satisfaction, relationship satisfaction, and so forth to become stronger over time and with larger sample sizes. Further studies would also incorporate more rigorous measures of implementation fidelity to determine the causal relationships between rollout quality and valued well-being and learning outcomes. Additionally, future studies would need to ascertain whether the full 12 months is required to see desirable effects. Although the Four Pillars of Wellbeing curriculum typically requires only about 15 classroom hours across an entire school year, if the intervention truly requires 12 months of rollout, this would be a limitation to scaling the program in multiple schools. We suspect that desirable outcomes would take less than 12 months of implementation time, and other studies would be needed to confirm this.

Corbett Prep had been using RULER, a different SEL program, for over 1 year. The familiarity with emotions may have made it easier for students and teachers to adopt the Four Pillars of Wellbeing curriculum, and so future studies will benefit from working with schools that have no existing SEL programs. The present investigation provides initial evidence that the Four Pillars of Wellbeing curriculum, at the very least, can support existing SEL programs and provide additional well-being benefits. The program was designed with schools without SEL programs in mind, and so we strongly suspect that we would see similar in these use-cases as well.

Lastly, throughout the duration of the study, teachers were unaware of the study outcomes and metrics that we were analyzing. All questionnaires were randomized, and teachers were not informed about the study results until after the experiment was complete. Although we attempted to control for demand effects to the fullest extent possible, future studies would benefit from double-blind methodologies—a massive undertaking in school research.

The lessons in the program offer students effective strategies to be more mindful, compassionate, collaborative, forgiving, grateful, self-aware, self-accepting, and able to regulate emotions. Although we ascertained findings related to student shifts in mood and improvements in emotion granularity, these are just two of dozens of possible hypotheses to test with future student populations. Research with children in schools is inherently challenging, and for this pilot, we were limited to collecting mood data, one of many possible valuable outcomes. This is also why it made sense to focus more heavily on teacher data to complement the more usual approaches to student data collection. Future studies would take a more student-focused approach to studying social, emotional, and educational impact, and would determine the extent to which the Four Pillars affects academic performance, bullying, student conduct, emotion regulation, subjective well-being, physical health, standardized test scores, and so forth. Further analyses are required to fully understand the extent of outcomes on children and how the students relate to themselves, with each other, with their teachers, and with their family members. Additionally, in the future, it is our intention to conduct longitudinal studies on students taught the Four Pillars skills in order to determine long-term life outcomes. Although our study found that more time spent on the curriculum correlated with greater well-being outcomes, there is likely a ceiling effect for the quantity of time. A next wave of studies would more thoroughly measure implementation fidelity, a critical component to determining the quality of instruction above and beyond quantity.

## Conclusion

In a single-school pilot study, we used both pre- and post-test methodologies to determine that the Four Pillars of Wellbeing curriculum improved the well-being and emotional climate of both teachers and students. Teachers' subjective well-being, self-compassion, and teaching efficacy increased across the 12-month intervention, and the use of the program practices correlated positively with teachers' subjective well-being and self-compassion, and negatively with stress. Students' self-reported moods shifted into lower arousal positive states, and students also demonstrated a significant improvement in self-awareness as measured by their emotion granularity. Overall, this study provides foundational support that the Four Pillars of Wellbeing curriculum can be of benefit for schools interested in cultivating more positive classroom learning environments and improving the well-being and social awareness of their teachers and students.

The most effective and engaging schools understand that it is not just the content that matters but also the environment and context around which the content is taught. Core cognitive competency areas like math, science, literature, social studies, and history are all ideally delivered in an environment that is safe, positive, and nurturing to the development of the whole child (MacNeil, Prater, & Busch, 2009; Roeser & Eccles, 1998; Wang & Holcombe, 2010). In other words, school must be a place where students and teachers are not simply developing their minds but also their hearts—through cornerstone social, emotional, well-being, and self-awareness tools that allow them to cultivate joyful and meaningful lives. Research has demonstrated that enhancing school climate is an effective way of improving learning outcomes and teacher efficacy, in which students learn skill sets that they will bring into adulthood and in which they develop into well-adjusted, productive, and compassionate members of society (MacNeil et al., 2009; Wang & Holcombe, 2010).

Educators and heads of schools need clear, concrete evidence in order to feel confident rolling out new well-being interventions for their students. New programs require time, planning, and cognitive bandwidth that many overworked teachers and administrators simply cannot afford without solid empirical support. It is imperative for new well-being initiatives such as the Four Pillars of Wellbeing curriculum to provide tangible outcomes that help schools effectively educate their students in safe, psychologically sound, and emotionally well environments that support the flourishing of the whole child. In light of these needs, the present investigation provides a first step toward an evidence-based model for an intervention that cultivates well-being, self-awareness, and classroom climate of the entire school, including both teachers and students.

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Received September 1, 2017
Revision received May 5, 2018
Accepted May 7, 2018 ■