

**SUN SALUTATIONS IN SCHOOL: A PILOT STUDY  
OF YOGA WITH SCHOOL-AGED CHILDREN**

**by**

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Sun Salutations in School: A Pilot Study of Yoga with School-Aged Children

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## **Abstract**

Research has found evidence of yoga's positive effect on levels of mindfulness, emotion regulation and well-being in adults. Several studies have shown similar benefits for children participating in mindfulness-based interventions in school settings. However, the body of literature focusing on yoga for children is still in nascent stages. There is a paucity of literature examining the outcomes and implementation of yoga on typically developing children, particularly in the context of school yoga programs. This pilot study presents preliminary findings related to outcomes and implementation of a yoga program with elementary-school-aged children. Participants ( $N = 80$ ) were 5<sup>th</sup> to 7<sup>th</sup> grade students who participated in 45 minutes of yoga per week for 10-weeks. It was hypothesized that following the yoga program, participants' self-reports of mindfulness skills, emotion regulation, subjective well-being, optimism and experience of classroom supportiveness would improve. To assess the feasibility of implementing a yoga program in the school setting, participants' attendance as well as teacher and student perceptions of the program were also measured. Although no firm conclusions can be made without the use of a control group, preliminary findings suggest that both students and teachers found the program useful and fairly attractive, and improvements to mindfulness and emotion regulation skills followed the program. No changes were found for subjective well-being, optimism and classroom supportiveness. The results of this research may assist in informing educators and scholars as they strive to develop, implement and evaluate yoga programs suitable for children.

## **Lay Summary**

The body of literature focusing on yoga for children, particularly in school settings is limited. This research examined changes in mindfulness and emotion regulation skills, well-being, optimism and classroom supportiveness in 80 5<sup>th</sup> to 7<sup>th</sup> grade students participating in a 10-week school yoga program. Participant attendance as well as teacher and student perceptions of the program were also measured. Overall findings suggest that both students and teachers found the program useful and fairly attractive, and preliminary findings suggest positive changes in mindfulness and emotion regulation skills followed the program. No changes were found for subjective well-being, optimism and classroom supportiveness. The results of this research may assist in informing educators and scholars alike as they strive to develop, adapt and evaluate yoga programs for children.

## **Preface**

This thesis is an original intellectual work by the author, M. McKusick. This research was approved by the University of British Columbia's Behavioural Research Ethics Board under the project title: Sun Salutations at School: Exploring the Effect of Mindful Yoga on Students (BREB number H16-024790).

The project design, data collection and analyses of data was primarily conducted by the author, with assistance from research assistants. The yoga intervention implemented in this study was designed and taught by Julia Bain Johnson Baker, the founder and director of Yoga It Up.

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## Introduction

During late childhood and early adolescence, the developmental period when the majority of mental health issues emerge (Kessler & Wang, 2008), many children face social, emotional and behavioural challenges (Eccles & Roeser, 2009). Scholars point to this age as a critical time for the development of healthy emotional, cognitive and social functioning that may protect against mental health disorders and facilitate healthy relationships and well-being (e.g., Davidson et al., 2012; Gottman & Mettetal, 1986; Luthar & Zigler, 1992). As such, it is important to implement and study feasible and accessible strategies to facilitate positive psychological functioning and prevent and address mental health difficulties in children. Indeed, the 21<sup>st</sup> century has seen a shift in educational goals, with educators expanding curriculums to include preventative programs that foster social and emotional development as well as intellectual growth (e.g., Butzer, Bury, Telles, & Khalsa, 2016; Davidson et al., 2012; Roeser, 2013). Several scholars have argued that introducing universal mindfulness-based programs in schools could meet these educational goals, while promoting psychological well-being and related factors and protect against psychopathology, such as anxiety and depression (Butzer et al., 2016; Farrell & Barrett, 2007; Rempel, 2012).

With the past decade yielding an increase in mindfulness-based interventions, many schools have integrated yoga into their regular school routine (e.g., Butzer, Ebert, Telles, & Khalsa, 2015; White, 2009). Recent studies have shown preliminary support for yoga's ability to enhance children's emotional awareness and ability to regulate emotions, leading to improvements in affective, social, behavioural and cognitive adjustment (Mendelson, 2010). However, the body of literature examining children's yoga is still in its infancy (Butzer, et al., 2016; Kaley-Isley, Peterson, Fischer, & Peterson, 2010). Additional research examining program outcomes as well as

the feasibility of implementing yoga programs in elementary schools is necessary (Butzer et al., 2016; Dariotis et al., 2017). This study will extend the understanding of yoga as a possible catalyst in the development of mindfulness, regulatory skills, and indicators of positive adjustment in elementary school students (i.e., well-being, optimism, and social competency). Furthermore, this study will assess multiple aspects of implementation fidelity and acceptability from both students and teachers, important aspects of research that remain unexamined in the majority of yoga studies (Dariotis et al., 2017; Feagans Gould, Dariotis, Greenberg, & Mendelson, 2017). This study has the potential to augment the literature's understanding of the benefits of school yoga, while offering a more comprehensive knowledge of the components necessary to foster these positive outcomes.

### **Mindfulness**

Mindfulness is conceptualized in the literature as the frequency and tendency of an individual to engage in mindful states over time, in which attention to one's environment, actions and internal states (i.e., cognitions, emotions and sensations) is purposeful, present centered, nonjudgmental and nonreactive (Brown & Ryan, 2003; Greco & Baer, 2011). Mindfulness skills have been associated with proficiencies in emotion regulation, including the use of more effective regulatory strategies (Hayes & Feldman, 2004; Hill & Updergraff, 2012). Notably, mindfulness has been identified as a mechanism by which negative emotions and low positive emotionality can be targeted, ultimately increasing well-being and decreasing more serious deficiencies in emotional functioning, such as depressive symptomology and psychopathology (Brown & Ryan 2003; Jimenez, Niles, & Park, 2010; Pepping, Duvenage, Cronin, & Lyons, 2016).

The literature suggests that variations in mindfulness exist both between individuals and across environmental contexts, and while individual differences can be innate, mindfulness can

also be learned (Brown & Ryan, 2003; Brown, Ryan, & Creswell, 2007; Carmody & Baer, 2008). Several studies have endorsed yoga as an appropriate intervention for fostering mindfulness in adults, above and beyond meditation practices alone (Bowden, Gaudry, An, & Gruzelier, 2011; Menezes et al., 2015; Shelov, Suchday, & Friedberg, 2009). Mindfulness is a proposed, yet relatively unexamined, outcome of children's yoga (Ferreira-Vorkapic et al., 2015), and research has focused primarily on adolescent populations (e.g., Daly et al., 2015; Fishbein et al., 2016; Hagins & Rundle, 2016). Through awareness and acceptance, training in mindfulness has been shown to foster aspects of executive control related to cognitive, emotional and physiological regulation (Roeser, 2013; Zelazo & Lyons, 2012). As such, exploring mindfulness as a typical outcome of yoga would assist in distinguishing yoga as a unique practice with benefits distinct from other programs and provide substantiation for yoga's value as an alternative health practice and addition to school curriculums.

### **Emotion Regulation**

Over the past two decades, the study of emotion regulation has seen a surge in scholarly interest, particularly with regards to the importance of children's ability to regulate emotions in an effective, healthy and prosocial manner (e.g., Cole, Michel, & Teti, 1994; Morris, Silk, Steinberg, Myers, & Robinson, 2007). Emotion regulation refers to individuals' ability to respond to internal and external emotional stimuli, including how, when and to what degree individuals experience, control and express emotions (Gross, 1998b; 2013). Emotion regulation capacities have been linked to several aspects of affective, relational and developmental consequences in both an acute and cumulative manner, beginning in childhood (e.g., Djambazova-Popordanoska, 2016; Gross & John, 2003; Shields & Cicchetti, 2001). Research has suggested that the way in which youth respond to emotional outcomes of stressful stimuli mitigates adverse effects of environmental

stressors, such as maltreatment and family conflict (e.g., Compas, Connor-Smith, Saltzman, Thomsen, & Wadsworth 2001; Eisenberg et al., 1996; Shields & Cicchetti, 2001). Adaptive emotion regulation strategies, such as effectively tracking and cognitively regulating emotion, have been linked to prosocial behaviour, enhanced relationships, positive emotional functioning and greater well-being in children (Djambazova-Popordanoska, 2016; Izard et al., 2001; Rydell, Thorell, & Bohlin, 2007; Shields & Cicchetti, 2001). It is also argued that emotion regulation skills have the potential to provide children with greater awareness of their own and other's emotions, allowing them to take others' perspectives, be empathetic and anticipate the emotional and interpersonal consequences of situations and behaviours (Izard et al., 2001; Shields & Cicchetti, 2001). Conversely, emotion regulation difficulties in childhood have been connected to problematic behaviours and mental health concerns, and are a risk factor for the likelihood of psychological disorders later in life (e.g., Coie et al., 1993; Kober, 2007; Rydell et al., 2007). As such, building the capacity for emotion regulation capacities early in life has the potential to lessen risk factors for psychopathology and have immediate and sustained prevention effects on mental health and overall social and emotional adjustment.

The literature suggests that such regulatory skills can be developed through training and highlights the importance of early preventative programming in efforts to foster healthy emotional and psychological development (Cole, 1994; Greenberg, 2001; Izard, 2001; Westhues et al., 2009). Late childhood and early adolescence is a transformative stage for the development of regulation related processes, as children are increasingly able to observe emotional states and respond appropriately to emotional stimuli with an increased repertoire of behavioural and cognitive-based regulatory responses (e.g., Eisenberg, Hofer, Sulik, & Spinrad, 2014; Gottman & Mettetal, 1986; Riediger, & Klipker, 2014). Furthermore, this developmental period is a critical time in the

development of executive functioning, which assists in regulation (Zelazo & Carlson, 2010; Zelazo & Lyons, 2012). Scholars have suggested that regulatory capacities may be furthered by the development and training of neurocognitive processes such as attention, inhibition of automatic responses, working memory and cognitive flexibility, improvements which may persist over time (Miyake, Friedman, Emerson, Witzki, & Howerter, 2000; Zelazo & Carlson 2012; Zelazo & Lyons, 2012). As such, interventions aimed at increasing cognitive and emotion capacities during this developmental time frame could be beneficial in helping regulate the emotional, cognitive and physiological effects of internal and external stressors both on an acute and long-term basis.

### **Well-being**

Subjective well-being is a major construct within the positive psychology literature, which aims to better understand and promulgate the development of positive aspects of the self and one's environment (Seligman & Csikszentimihalyi, 2000). Colloquially known as happiness, subjective well-being refers to the way in which individuals evaluate their own lives (Diener, 1984; Diener, 2000; Diener & Ryan, 2009). This subjective indicator of well-being reflects the degree to which individuals experience positive and negative affect (experiences of emotions), such as happiness or fear, respectively. Subjective well-being also encompasses an individuals' cognitive evaluations of their life, known as life satisfaction (Diener & Ryan, 2009). Life satisfaction is indicative of how one judges the degrees of satisfaction, engagement, and interest in several realms of life, such as professional, personal, and health domains, and how one ascribes meaning and purpose to life.

The literature suggests that subjective well-being is correlated with a number of favorable variables related to success in personal, professional and social spheres (e.g., Connolly & Viswesvaran, 2000; Diener, Nickerson, Lucas, & Sandvik, 2002; Lyubomirsky, King, & Diener,

2005). Individuals with high levels of subjective well-being tend to be satisfied with their social lives, and report high quality friendships, and abundant social support (Cooper, Okamura, & Gurka, 1992; Pinquart & Sörensen, 2000). Furthermore, subjective well-being appears to be related to other indicators of emotional and psychological well-being, including higher levels of optimism and self-esteem, and lower levels of psychopathology (Diener & Seligman, 2002; Lucas, Diener, & Suh, 1996).

### **Optimism**

Optimism is another variable associated with positive development and adjustment in the positive psychology literature (Seligman & Csikszentimihalyi, 2000). Optimism is defined as the degree to which an individual interprets and expects positive results from external events (Scheier & Carver, 1985; Schweizer, Beck-Seyfffer, & Schneider, 1999). Childhood experiences have been suggested as critically linked to levels of optimism in early childhood, particularly in the domains of agency and successful social development (Ek, Remes, & Sovio, 2004). Several factors in childhood have also been found to be critical determinants of adult levels of optimism.

Specifically, childhood socio-economic status, academic achievement and social standing are closely linked to levels of optimism in the literature (Ek et al., 2004). Individuals high in optimism are more likely to experience positive mood, physical health, success and overall positive life experiences, which may be linked to the higher likelihood of engaging in healthy and supportive lifestyles and environments and overall resilience (Broekhof et al., 2015; Feder, Nestler, & Charney, 2009; Scheier, & Carver, 1985). Research has also suggested optimism as a buffer against life stressors, such as academic pressure, social stressors and health issues (Broekhof et al., 2015; Ey et al., 2005; Kwak & Lee, 2016). Further, children with higher levels of optimism are less likely to show long-term effects from emotional maltreatment and experience mental illness

(Scheier & Carver, 1985; Seligman & Csikszentmihalyi, 2000). Given the link between childhood optimism and trajectories in later life, as well as preliminary evidence that mindfulness-based programs, such as yoga, have the potential to increase the experience of optimism, further research exploring the effects of such programs on childhood optimism would be beneficial (Conboy, Wilson, & Braun 2010; Scheier & Carver, 1985).

### **Social Competencies**

During the past several years, relational goals, such as building and maintaining positive relationships, while developing a caring perspective towards others, has increasingly been integrated into learning outcomes for children (Weisberg, Durlak, Domitrovich, & Gullotta, 2015). Similar to emotion regulation, the transition from middle childhood to adolescence is an important developmental time for the promotion of social functioning (Davidson et al., 2012). Indeed, children's social skills and support networks have been connected to future psychological functioning, including long-term increases in adversity resilience (Davidson et al., 2012; Greenberg et al., 2001). Conversely, poor social skills, isolation and peer rejection have been noted as risk factors for academic problems and substance use, interfere with a trajectory towards healthy adult functioning and connect to psychopathology later in life (Coie et al., 1993; Greenberg et al., 2001; Hawkins et al., 1992). Research has shown that programs supporting social development can assist in the development of prosocial social skills and behaviour (Davidson et al., 2012), which may yield benefits as children progress towards adulthood and strive to engage and sustain meaningful relationships.

The presence of multiple quality relationships across various domains has been raised as an important component of healthy development during children's growth towards adolescence (Levitt et al., 2005). The literature suggests the need for social support from peers, family and



other adults, particularly those modeling prosocial behaviour, noting that children with strong social networks typically enjoy a host of benefits, including lower levels of substance use and behavioural problem, and higher levels of self-esteem and academic engagement (Franco & Levitt 1998; Hawkins et al., 1992; Luthar & Zigler, 1992). Taken together, programs that support the advancement of both individual and interpersonal social domains appear to be highly beneficial for children advancing towards adolescence.

### **Yoga Interventions**

Contemplative practices, namely yoga and meditation, have emerged in the contemporary literature as a valuable medium for increasing various components of physiological and psychological health (e.g., Barnes, Bloom, & Nahin 2008; Gard et al., 2012; Schmalzl, Powers, & Blom, 2015). The literature has recognized yoga as a specific form of mindfulness-based intervention typically comprised of four components: (a) physical postures, (b) breathing exercises, (c) relaxation techniques, and (d) mindfulness practices (e.g., Butzer et al., 2015; Greenberg & Harris, 2012). Scholars have suggested that through the practice of yoga postures, the calming effect of breathing techniques on the nervous system, and mindfulness practices, yoga improves youth's overall adjustment (e.g., affective, cognitive, social- emotional, and behavioural functioning; Butzer et al., 2016; Dariotis et al., 2016; Mendelson et al., 2010).

Research has shown early support for yoga's positive effect on regulation abilities in children, specifically decreasing rumination, involuntary stress responses, emotional arousal and increased emotional control (Butzer, LoRusso, Shin, & Khalsa, 2017; Dick, Niles, Street, DiMartino, & Mitchell, 2014; Mendelson et al., 2010; Serwacki, & Cook-Cottone, 2012). Recent reviews of the literature also suggests yoga is an effective way to foster physical and psychological well-being in children and adolescents, specifically in terms of reducing stress, anxiety, and

negative emotional states in addition to increases in life satisfaction (Ferreira-Vorkapic et al., 2015; Galantino, Galbavy, & Quinn, 2008; Kaley-Isley et al., 2010; Khalsa, Hickey-Schultz, Cohen, Steiner, & Cope, 2012). Finally, yoga has been connected to enhancements in social functioning, including an increase in prosocial behaviour and the reduction of hostile behaviours (e.g., Dariotis et al., 2016; Dariotis et al., 2017 Frank, Kohler, Peal, & Bose, 2016). Indeed, a burgeoning body of literature supports the use of yoga as a beneficial strategy for personal and interpersonal development of school aged children; with further research, yoga shows promise as an intervention to enhance elementary school children's knowledge of mindfulness, regulatory capacities and social functioning while increasing positive psychological functioning (Daly et al., 2015; Ferreira-Vorkapic et al., 2015; Kaley-Isley et al., 2010).

### **The Present Study**

While the relatively recent emergence of research focusing on school yoga programs shows potential for evidence-based effects, several gaps and limitations have emerged in the literature and several reviews have shown mixed outcomes (Butzer et al., 2016; Ferreira-Vorkapic et al., 2015; Kaley-Isley et al., 2010). Additionally, although a handful of theories and studies have begun to explore mindfulness and emotion regulation skills in school-aged children and youth (Butzer et al., 2016; Daly et al., 2015; Mendelson et al., 2010), these variables, particularly mindfulness, have not been yet been examined sufficiently. In part, these limitations can be attributed to small sample sizes, a low dose of yoga, and participant absenteeism, as well the necessary development of several developmentally appropriate scales over the past decade (e.g., Greco, Baer, & Smith, 2011; MacDermott, Gullone, Allen, King, & Tonge, 2010). Finally, despite including the basic components of yoga, few studies have documented details regarding the components of implementation in school yoga programs, and often vary in class length, intensity,

frequency and number of sessions, making it difficult to generalize or compare results across programs (Feagans Gould et al., 2014; Ferreira-Vorkapic et al., 2015; Serwacki & Cooke-Cottone, 2012).

Scholars have suggested research focusing on the feasibility of implementing yoga programs as an important next step (Butzer et al., 2016; Feagans Gould et al., 2014). Moving forward, researchers have been urged to discuss core components of interventions and measures assessing implementation, particularly in regards to fidelity, dosage, quality and participant responsiveness (Dane & Schneider, 1998; Durlack & DuPre, 2008; Feagans Gould et al., 2014). Furthermore, a more thorough understanding of participant experience is critical to assessing and refining programs (Butzer et al., 2016; Dariotis et al., 2017). The inclusion of measures assessing implementation and acceptability from the perspective of multiple viewpoints (i.e., students and teachers) would also be beneficial to the literature (Dariotis et al., 2017; Davidson & Kaszniak, 2015; Feagans Gould et al., 2014). To date, only a very small number of studies have included both student and teacher perspectives of elementary school yoga programs, primarily yielding data from small, voluntary focus groups (e.g., Dariotis et al., 2016; Dariotis et al., 2017). Building upon this knowledge has the potential to provide valuable information on student participation and engagement, as well as program components deemed important or impactful for both participants and stakeholders.

The present study aimed to augment the extent literature by exploring the impact of a school-based yoga program on mindfulness, emotion regulation, well-being, optimism, and social support in a sample of upper elementary school-aged children. Additionally, this research explored aspects of implementation as suggested by Feagans Gould and colleagues (2017), including dosage, and participant responsiveness. In addition, both teachers and students feedback were

included in exploring perceived usefulness and acceptability of various program components. Specifically, this study tested the following hypotheses: Following a school-based yoga intervention: (a) self-reports of dispositional mindfulness would increase in school-aged children; (b) self-reports of emotion regulation would increase; (c) self-reports of well-being (i.e., life satisfaction and positive emotion) would increase; (d) self-reports of optimism would increase; (e) self-reports of classroom supportiveness would increase.

## Method

### Participants

Participants included students attending a public elementary school in British Columbia, Canada, with a neighbourhood median total household income of \$91,000 (Statistics Canada, 2017). Originally, 96 students consented to participate in the study; 10 students were absent during data collection prior to the intervention start date, and thus were excluded from the study, and 6 students' data was excluded from analyses as a result of not completing post-intervention questionnaires. The final sample consisted of 80 5<sup>th</sup> (24.7%), 6<sup>th</sup> (41.1%) and 7<sup>th</sup> (34.2%) grade students recruited from classrooms participating in a 10-week yoga program. The mean age of the participants was 11.3 ( $SD = 0.90$ ) and 50% of the participants identified as female. In terms of ethnicity, 64.8% of the sample identified as White, 16.9% reported a multiracial background, 7% identified as Asian, 4.2% as Asian Indian, 1.4% as Black, 1.4% as Middle Eastern and 4.2% of participants identified as another ethnicity.

Three of the four teachers with students participating in the program provided feedback on the program. The remaining teacher went on medical leave prior to completion of the program. All three teachers were female, ranging in age from 30 to 44 ( $M = 37.67$ ;  $SD = 7.09$ ), and reported having been teachers for a range of 3.5-15 years ( $M = 9.5$ ;  $SD = 5.77$ ). Two of the teachers identified as White and one identified as South Asian.

### Measures

**Mindfulness.** The Child and Adolescent Mindfulness Measure (CAMM; Greco et al., 2011) is a developmentally appropriate measure for evaluating child and adolescent mindfulness levels, specifically assessing present-moment awareness and nonjudgmental, nonavoidant responding to internal processes. The CAMM is a unidimensional, 10-item scale scored on a 5-

point Likert scale. Research has found the CAMM to be positively correlated with quality of life, self-regulation, academic success and social skills (de Bruin, Zijlstra, & Bögels, 2014; Greco et al., 2011). Research also suggests that the CAMM is negatively correlated with somaticization, stress, rumination, catastrophizing, and internalizing and externalizing behavioural problems (de Bruin et al., 2014; Greco et al., 2011). Research with children suggests satisfactory internal consistency ( $\alpha = .71$ ). In this study, internal consistencies were .79 at pre-intervention (T1) and .82 at post-intervention (T2).

**Emotion regulation.** The Emotional Regulation Questionnaire for Children and Adolescents (ERQ-CA; Gullone & Taffe, 2012) is a 10-item questionnaire assessing both positive and negative emotion regulation strategies, specifically cognitive reappraisal and expressive suppression, respectively, through two separate subscales. The literature suggests good internal consistency ( $\alpha = .75$  and  $.82$  for expressive suppression and cognitive reappraisal, respectively) and adequate convergent validity, as subscales were found to be significantly correlated in the appropriate directions with measures of depressive symptomatology (Gullone & Taffe, 2012). In this study, the internal consistencies were .66 at T1 and .65 at T2 for the expressive suppression subscale and .76 at T1 and .76 at T2 for the cognitive reappraisal subscale.

**Well-being.** Well-being was assessed using a measure of life satisfaction and positive affect, consistent with the conceptualization of subjective well-being (Diener, 1984; Diener, 2000; Diener & Ryan, 2009).

**Life Satisfaction.** The Student's Life Satisfaction Scale (SLSS; Huebner, 2001) is a 7-item scale measuring individuals' subjective global life satisfaction. The measure asks participants to indicate how often they identify with satisfaction-related statements of well-being on a 6-point Likert scale. The SLSS has been found to be a psychometrically sound measure for children ages

8-14 (Huebner, 1991), with good internal consistency ( $\alpha = .82$ ). The SLSS shows acceptable test-retest reliability over a one- to two-week period, with a correlation coefficient of .74. Correlations between the SLSS with several tools assessing well-being range from .36 to .62, supporting the measure's validity for use in child populations. In this study, internal consistencies were .88 at T1 and .90 at T2.

**Affect.** The 10-Item Positive and Negative Affect Schedule for Children (PANAS-C; Ebesutani et al., 2012) is a self-report questionnaire measuring the frequency of positive and negative affect on a 5-point Likert scale. Both the negative and positive affect subscales have shown good internal consistency, with correlation coefficients of .83 and .86, respectively (Ebesutani et al., 2012). Research also shows sufficient divergent validity between subscales, and high convergent validity (Ebesutani et al., 2012). In this study, internal consistencies were .85 at T1 and .91 at T2 for the Positive Affect subscale and .71 at T1 and .62 at T2 for the Negative Affect subscale.

**Optimism.** The optimism subscale of the Resilience Inventory (Noam & Goldstein, 1998; Song, 2003) contains nine items. All items are rated on a 5-point Likert scale. This scale was developed for use in early adolescent populations (Noam & Goldstein, 1998), and adequate levels of internal consistency ( $\alpha = .74$ ) have been observed in its use with preadolescent populations as well (Schonert-Reichl & Lawlor, 2010). In this study, the internal consistencies were .84 at T1 and .86 at T2 for the Optimism subscale.

**Classroom supportiveness.** The Classroom Supportiveness subscale of the Sense of Classroom as a Community Scale (adapted from Battistich, Solomon, Watson, & Schaps, 1997) consists of 14 items measuring the sense of caring and supportiveness within the classroom. Items are rated on a 5-point Likert scale. Items focus on several aspects of individuals' relationships with

other classmates, including helpfulness, caring, respect and teamwork. Good internal consistency for this subscale has been observed ( $\alpha = .85$ ). In this study, the internal consistencies were .91 at T1 and .91 at T2 for the Classroom Supportiveness subscale.

**Program Implementation and Acceptability.** Several measures were included to assess components of program implementation (i.e. dosage, fidelity and participant responsiveness; Dane & Schneider, 1998; Durlack & DuPre, 2008; Feagans Gould et al., 2014) and acceptability.

Dosage was assessed by the Implementation Diary, which was filled out by the yoga instructor, and weekly attendance logs which were completed by teachers. Adherence to the curriculum and levels of participant responsiveness were planned to be measured with the Implementation Diary. Participant responsiveness was also assessed through the Student Satisfaction Questionnaire. The Student Satisfaction Questionnaire and the Teacher Satisfaction Questionnaire provided feedback detailing teacher and student acceptability. Weekly attendance records for each lesson, completed by the teacher, were also used to assess dosage.

**Implementation Diary.** The implementation diary was designed to be measure several aspects of implementation, including fidelity to the program curriculum, dosage and student responsiveness (adapted from Schonert-Reichl & Lawlor, 2010; Schonert Reichl et al., 2015). Closed-ended questions assessing the following are included in the implementation diary: time spent implementing the program, adherence to the curriculum and student engagement. The diary includes space for comments regarding behavioural issues, as well as issues with implementation or adaptations made to the lesson.

**Student satisfaction.** The Student Satisfaction Questionnaire (SSQ; adapted from Maloney, 2015) assesses participant responsiveness and program acceptability. The SSQ is comprised of 20 items that evaluated participants' perceptions of the yoga program. This questionnaire includes 12



items on a 4-point Likert scale assessing the degree to which students perceived yoga as effective across various physical and psychological concepts, 4 multiple-choice questions evaluating the level of enjoyment and learning the participants' experienced during the yoga program, and 4 open-ended questions allowing the participants the opportunity to share additional comments regarding their experience of the yoga program.

***Teacher satisfaction.*** The teacher satisfaction survey assessed teachers' perceptions of the yoga program (TSQ; adapted from Maloney, 2015). The survey included demographic questions, 12 items rated on a 5-point Likert scale regarding the teachers' experience of the yoga program and perceived changes in their students following the program, and 6 open-ended questions regarding the teachers' perception of the yoga program.

## **Procedure**

Participant recruitment began three to four weeks prior to the data collection start date, including visits to the eligible classrooms to explain the study and dispersion of informed consent documents. Parent consent and student assent was attained prior to administration of the first package of student questionnaires. Student questionnaires were administered twice: approximately one week prior to starting the yoga program and one week following the program. Participants completed the questionnaires in pencil and paper format and a research assistant read each question aloud to the students. A research assistant was also available to answer participant questions during data collection. Teachers were also provided with a consent form and had the opportunity to complete the teacher questionnaire packages following the program.

**Yoga Program.** Once a week for 10 weeks, participants took part in 45 minutes of yoga programming offered to the school by "Yoga It Up," a local children's yoga company. Classes were instructed by Yoga It Up's founder, who holds a Master's Degree in Developmental Studies,

along with certifications in Children’s Yoga, Yoga for the Special Needs Child, and International Development and Adult Education. Yoga it Up offers yoga programming rooted in social emotional learning, positive psychology, mindfulness and developmental cognitive neuroscience (Baker, 2018). Yoga It Up emphasizes aspects of Positive Youth Development, including the importance of providing acceptance and support of individual differences and assets, which allows children to discover and empower themselves (Benson & Saito, 2001). Yoga It Up also aims to engage children by finding a way to make concepts meaningful to them as they learn how to integrate movement in their lives through the promotion of four core learning principles, including: self-regulation, ahimsa, affirmations and pranayama. This program targets self-regulation skills by enhancing students’ self-awareness, drawing particular attention to the experience of physical sensations and emotions, as well as providing students with tools to respond to emotions, reflect and engage in responsible behaviours and decision-making. The principle of “ahimsa,” or non-harming of oneself and others (Bryant, 2015) is incorporated into the program through team-building exercises and discussions promoting respect and kindness. The program aims to heighten students’ awareness and understanding of how each individual’s thoughts and behaviours may effect themselves and others. Students also learn and practice positive affirmations (i.e., “I am calm”), which are designed to facilitate student well-being, regulation, and optimism as students face challenges and move towards goals. The practice of “pranayama,” or breath control (Bryant, 2015), teaches students to respond to emotions with breathing techniques and explores how students can incorporate pranayama into their daily lives to increase the ability to regulate emotions, become more mindful, and engage in calm decision making.

Participants in this study took part in 45 minutes of yoga once per week. Each lesson began

with ‘centering’: a silent breathing exercise, which was often followed by guiding students’ attention to emotions, thoughts and physical sensations or setting an intention or goal. During lessons, the majority of time was spent on a combination of instructor-led yoga poses and yoga activities requiring teamwork (e.g., partner poses, leading another student through sequences of yoga poses). Each class also included learning and practicing positive affirmations. Several lessons included guided meditations and discussions on topics such as emotional awareness, respect, kindness and how yoga poses or breathing may effect students’ emotional, physical and cognitive experiences. Each lesson concluded with relaxation and a closing circle in which students focused their attention on sending and receiving kindness.

## Results

### Preliminary Analyses

Prior to the computation of total scale or subscale scores, the expectation maximization algorithm was used to address missing data (T1 and T2 = 1.67%; Tabachnick & Fidell, 2012). Once subscale and total scale scores were computed, outliers were examined and compared to upper and lower boundaries at the 25<sup>th</sup> and 75<sup>th</sup> percentiles (Field, 2013). Following identification of outliers by this method, outliers were Winsorized at T1 (.08% of the data). Next, scales and subscale were screened for skewness and kurtosis using visual inspection and examining statistical values. All values were found to be within acceptable bounds (+/-2; Gravetter & Wallnau, 2013). See Table 1 for correlations between outcome variables for all participants.

### Implementation Fidelity and Acceptability

**Attendance.** All students who consented to participate in the study met the minimum dosage of 70% attendance rate. Of the 80 students, 40% of the students attended 9 of the 10 classes, 38.75% attended 10 classes, 16.25% attended 8 classes and 5% attended 7 classes.

**Implementation Diary.** The implementation diary was intended to assess several aspects of implementation; however, due to a reportedly inadequate amount of time between lessons, the diary was only fully completed during the first three weeks of the program. Thus, insufficient data was available to assess implementation components from the closed-ended questions. As such, this data is not included in detail. The data from the first three weeks suggested a lower than expected dosage for the majority classes, with classes ranging from 20-50 minutes (see Table 2).

The implementer noted several variables that seemed to effect implementation, including the substitute teachers, groups of disruptive students in close proximity, age and maturity level. The implementer also noted that the time of day impacted classes and the students' engagement,

with distractions such as outside noise and interruptions from announcements impacting implementation and lessons prior to breaks. Reportedly, having the teacher or program implementer assign students' specific locations in the room improved student behaviour and engagement. Overall, given the missing implementation data from weeks 4 through 10, no conclusions can be drawn from this data.

**Student feedback.** To further assess participant responsiveness, participants provided feedback regarding their overall satisfaction with the yoga program. With regards to how much they liked the program, the highest percentage of students (35%) endorsed that the program “*was ok.*” The highest percentage of students reported learning “*quite a few things*” from the program (35%), and that “*a little*” of what they learned could be implemented in life at home or at school (33.75%). The majority of the participants reported that they did not teach anyone else what they learned in the program (78.75%) and that there was nothing about the yoga program they disliked (52.50%). The majority of the participants (66.25%) reported that they would recommend the program to a friend, while 18.75% would not, and 15% might recommend the program to a friend. See Table 3.

Participants also rated the degree to which they perceived the yoga program provided benefits to specific psychological and physical outcomes. The highest percentage of participants (38.75%) endorsed that it was “*true all of the time*” that the program helped them learn how breathing could help them in their daily life, while the highest percentage of participants reported that it was “*true most of the time*” that the program helped them improve their balance (38.75%) and treat others with kindness more often (40%). The highest percentage of participants also stated that it was “*true most of the time*” that the program helped them learn how to calm down (31.25%), to help themselves be happy (36.25%), and how positive affirmations can help in daily

life (35%). The highest percentage of participants endorsed that it was “*a little bit true*” that the program helped them become more flexible (36.25%), feel more confident in themselves (31.25%), as well as helped them learn how to know what emotions they are feeling (43.75%), tools to respond to negative or overwhelming emotions (35%), and how to be more optimistic and think more positively (33.75%). See Table 4.

Participants were given the opportunity to expand upon their responses regarding program satisfaction by answering several open-ended questions. Of the 70 participants who completed this portion of the questionnaire, 22 students reported enjoying *savasana* or relaxation, while 17 students shared that they enjoyed the yoga poses, and 14 students discussed feeling calm. For instance, one student stated: “I liked shevasena because it helped me calm down and relax.” Another student stated: “[I enjoyed] when we would do challenging poses and hold the position because it improves my balance and strength.” The opportunity to make their own yoga poses or sequences was also noted as enjoyable by 8 students. For example, one student stated: “My favourite part was when we could make our own order of poses.” There were 38 students who provided feedback on one or more components of the lessons they did not enjoy; 9 students reported experiencing yoga as uncomfortable or painful, 6 shared disliking certain poses, and 6 stated that they were distracted by other students’ behaviour. For example, one student stated: “Sometimes it hurt a little,” and another student stated: “I did not like how some students were fooling around and being disrespectful.”

Of the 48 students who shared what they perceived to have learned during the program, several lessons or skills stood out: 14 students highlighted the ability to calm or relax oneself, 11 mentioned the use of breathing techniques, 10 enjoyed the yoga poses and 7 students shared that they learned how to regulate emotions. For example, one student shared: “I learned a bunch of new

yoga poses and that breathing is a key move to calm yourself. I also learned some good relaxation poses that really help.” Of the 17 participants who reported teaching others what they learned during the yoga program, they shared one or more of the following: 10 students taught others yoga poses or sequences, 8 students shared breathing and 4 shared how to respond to emotions or calm oneself. Of the 55 students who shared reasons for recommending the program to others, 31 noted the program’s calming or relaxing elements, 10 mentioned the ability to respond to stress or difficult emotions and 8 students stated they would recommend yoga because they found it fun. Student feedback indicated yoga was perceived as particularly helpful for those with emotional difficulties; nine students stated that they would specifically recommend the program to someone who was struggling. For example, one student shared: “It is very calming and if the friend is having stress it would help a lot.” Of the 15 students who provided reasons for not recommending the yoga program, 7 students indicated they would refrain from doing so because they found it boring.

**Teacher feedback.** Three of the four teachers with students participating in the yoga program provided feedback on changes perceived in their students following their involvement in yoga. Of the three teachers, two endorsed that they “*agree*” that since participating in the yoga program, students learned how positive affirmations can help in their daily life and that student have more tools to help them when they feel negative or overwhelming emotions. With regards to the teacher stating whether or not their students learned how breathing can help in their daily life, one of the three teachers endorsed each of the following: “*neither agree nor disagree*,” “*agree*,” and “*strongly agree*”. Regarding other outcome variables assessed, all teachers reported that they “*neither agree nor disagree*” that they perceived changes in emotional awareness, happiness, and kindness, while two of the three teachers reported they “*neither agree nor disagree*” to have

perceived changes in optimism, the ability to calm themselves, focused attention, and confidence. See Table 5.

Of the three teachers, two endorsed that from their perspective, their students learned “*quite a few things*” in the yoga program and that “*quite a few things*” that the students learned during the program could be applied to life at school or at home. The teachers unanimously endorsed that they would recommend the yoga program to other teachers or schools. See Table 6.

The teachers shared what they liked best about the yoga program, with one teacher sharing that her “quiet students seemed calm and relaxed.” Other teachers commented on how students learned: “It was great for the students to learn certain poses and breathing techniques” and enjoyed that the students were: “learning self-affirmations” and “learning more strategies to help work through stress.” Two of the three teachers also commented that there were things they did not enjoy about the yoga program, including a common theme of disruptive behaviour effecting learning. One teacher commented that “some students had difficulty focusing and distracted others,” and the other noted that the “behaviour of some students prevented other students from fully benefitting.”

### **Program Outcomes**

Paired samples *t*-tests were used to analyze change over time for all participants on each outcome measure. From T1 to T2, mindfulness increased significantly,  $t(79) = -2.87, p = .003, d = 0.32$ . Use of expressive suppression decreased significantly,  $t(79) = 2.32, p = .01, d = 0.22$ . No other significant results were found for cognitive reappraisal,  $t(79) = 1.57, p = .06$ , life satisfaction,  $t(79) = -.76, p = .22$ , positive affect,  $t(79) = .07, p = .47$ , negative affect,  $t(79) = -.52, p = .30$ , optimism,  $t(79) = -.43, p = .33$ , or classroom supportiveness,  $t(79) = 1.31, p = .10$ . See Table 7 for descriptive statistics.



## **Discussion**

This was the first program evaluation study to examine mindfulness and specific emotion regulation strategies in Grades 5 to 7 following a school yoga program while also assessing program implementation from multiple perspectives. Regarding program implementation, factors that affected the implementation and acceptability of the yoga program were gleaned. Overall, considering attendance as well as feedback from teachers and students, the yoga program was generally viewed as a useful and feasible intervention as well as a positive experience for students. Additionally, the hypotheses that mindfulness, emotion regulation, well-being, optimism, and classroom supportiveness would increase following the yoga program were partially supported. Specifically, although no firm conclusions can be made without the use of a control group, significant results were found for increases in mindfulness skills and decreases in expressive suppression (a component of emotion regulation) for students who participated in the program. This research provides implications and suggestions for the refinement and exploration of future program development, implementation and assessment.

### **Program Implementation and Acceptability**

Student and teacher feedback indicated that the yoga program was generally perceived as a useful and favorable intervention. Both students and teachers were willing to recommend the program to others and stated that the program provided knowledge that students were able to apply to various domains in their lives. Student feedback indicated that the most memorable and enjoyable aspects of the program were breathing, the calming effect the program had on them and learning yoga poses. This feedback is consistent with qualitative studies conducted with similar age groups, and thus may be useful in informing the development and assessment of future programs (Dariotis et al., 2016; Dariotis et al., 2017). Students were able to link breathing

techniques to the ability to calm themselves outside of the yoga program, and several students relayed this information to others, specifically noting that yoga and breathing would be helpful for those experiencing emotional difficulties or stress.

Scholars have suggested including multiple viewpoints when studying the implementation of yoga programs (Durlak & DuPre, 2008; Feagans Gould et al, 2014); results from this study further supports the importance of this. Student and teacher feedback on the program's impact on the students varied, with teachers contributing the most impactful outcomes to the use of positive affirmations and tools for responding to overwhelming emotions. The difference in perspectives on the program's impact may be a result of teachers being limited to observable behaviours versus internal changes. Additionally, this may be a reflection of how children may conceptualize or link constructs differently than adults due to their less advanced cognitive and perspective-taking abilities at their age (Luna, Garver, Urban, Lazar, & Sweeney, 2004; Steinberg, 2005). For instance, while students did not strongly endorse learning tools to respond to emotions via the closed-ended questions, students did rate breathing specifically as a highly impactful component of the program in the closed-ended questions, and many students noted breathing as useful for addressing emotional distress within the open-ended questions.

Program feedback also included recommendations for improvements to the program and its implementation that current researchers and educators might consider as well. Several students commented on the opportunity to create their own yoga poses or sequences; the majority of these students reported this to be a favorable experience, while others did not enjoy it. Students occasionally experienced the yoga as painful, either overall or in reference to certain poses, which, as other studies suggest, highlights the need for the ongoing investigation and feedback regarding age-appropriate yoga classes (i.e., yoga poses, games, length of classes; Greenberg & Harris,

2012; Kaley-Isley et al., 2010). In addition, distractions from disruptive students were noted as an issue by the implementer, teachers and students, with the implementer noting improvements following communication with the classroom teacher and strategically placing students in the room. Results from this study suggests that educators and researchers may find it necessary to provide additional time to serve as a buffer for unplanned interruptions and challenges, as well as for implementers to carefully document the implementation of the intervention. As prior research suggests (Durlak & DuPre, 2008; Mendelson et al., 2010), and the implementer noted, support from teachers and administration are a crucial component to program implementation, including student engagement and behavioural issues. Finally, implementing the yoga program at a high dose was partially supported by high attendance rate; however, insufficient data was provided via the implementation diary to effectively assess fidelity to the program curriculum. Feedback suggested an overall favorable experience of program components unique to yoga (i.e., yoga poses, *savasana*), thus supporting differentiation from other programs, an important aspect of implementation (Durlak & DuPre, 2008).

### **Program Outcomes**

Although this study did not include a control group, and as such, firm conclusions cannot be made regarding the outcomes of the yoga program, this study provides an initial groundwork for further exploration. In line with research conducted with adults, this study provides preliminary support suggesting that yoga may have benefits for mindfulness skills and expressive suppression (a component of emotion regulation) in pre-adolescent children (Carmody & Baer, 2008; Harris, Jennings, Katz, Abenavoli, & Greenberg, 2016; Shelov et al., 2009). As increases in mindfulness skills have been proposed as a key consideration in differentiating yoga from alternate forms of physical activity (i.e., school physical education curriculums, fitness classes; Menezes et al., 2015;

Tihanyi, Böör, Emanuelsen, & Köteles, 2016), this is an important step in examining the usefulness of yoga in schools, and how to differentiate the effects of yoga from existing programs and classes. Furthermore, mindfulness has been suggested as a mediating variable through which yoga may facilitate healthy emotional and social processes and well-being (Brown & Ryan, 2003; Ferreira-Vorkapic et al., 2015; Gard et al., 2012; Menezes et al., 2015).

The finding that children altered the way they respond to emotions following the yoga program provides a unique contribution to the literature. Participants in this study showed significantly lower levels of expressive suppression following their involvement in yoga. This finding is consistent with research purporting lowered expressive suppression in children as a result of mindfulness training (Fung, Guo, Jin, Bear, & Lau, 2016). Emotional awareness, a construct related to mindfulness, has also been associated with lowered use of expressive suppression in youth (Eastabrook, Flynn, & Hollenstein, 2016; Hill & Updergraff, 2012). Notably, scholars in the field argue that mindfulness is inherently in opposition to expressive suppression, given mindfulness' central tenets of awareness and acceptance of thoughts and feelings, and the link between mindfulness training on awareness and acceptance of emotional responding (Broderick & Metz, 2013; Chambers & Gullone, 2009; Gullone et al., 2010). As research shows that the use of maladaptive strategies, such as expressive suppression, can be detrimental over time, the potential impact of yoga to positively influence responses to emotionally distressing situations is promising (Aldao, Nolen-Hoeksema, & Schweizer, 2010; Gullone et al., 2010).

However, not all hypotheses related to program outcomes were supported (i.e., increases in cognitive reappraisal, well-being, optimism, and classroom supportiveness). In addition to the possibility of a true lack of outcomes, the lack of significant findings may have alternate explanations. Prior research employing longitudinal methods in elementary school settings found

significant outcomes at follow-up that were not present immediately following completion of a yoga program, suggesting that outcomes may be cumulative over time (Bergen-Cico, Razza, & Timmins, 2015). Additionally, the data collected from the implementation diary suggests that that not all of the lessons met the intended 45 minutes of dosage, which may have impacted the strength of the intervention (Durlak & DuPre, 2008). Finally, the post-intervention survey took place during the final two weeks of the school year; as this is a time of transition and often excitement, it is possible that the intervention outcomes were less pronounced than they would have been during a different time of the school year. Overall, the existing body of literature on children's yoga has shown mixed outcomes and sometimes inconclusive reviews, leading scholars to suggest assessing implementation while continuing to work towards substantiating positive outcomes of yoga (Davidson et al., 2012; Feagans Gould, 2014; Ferreira-Vorkapic et al., 2015).

### **Limitations**

Several limitations of this study were noted. The participants were recruited from four classrooms at the same school, and thus the results are not readily generalizable to the general population. This study did not implement a control group and therefore, confounding variables such as time and other school activities may have affected outcomes. Further, although students who participated in the yoga experienced benefits to mindfulness and emotion regulation, these benefits cannot be directly linked to the yoga program. As such, a randomized control trial will be needed to verify these preliminary results. However, student feedback did allow participants to articulate which learning outcomes and benefits they perceived were from the yoga program (i.e., learning to calm down, using breathing techniques, kindness). In addition, another limitation was that the implementation diary was not completed, which inhibited a more thorough exploration of implementation. Future studies assessing implementation in a similar way would benefit from

ensuring adequate time and protocols conducive to recording data immediately following the lessons, or, ideally, include implementation ratings from third party perspectives to minimize bias. Overall, the knowledge gleaned from study adds to the literature, particularly by breaking ground as the first known study to explicitly assess for change in mindfulness skills and specific emotion regulation strategies in this particular age group. However, further studies with diverse populations and more rigorous methods are needed to corroborate and expand upon the findings.

### **Future Directions**

This research has raised pertinent questions and suggestions for future studies investigating elementary school yoga programs. Longitudinal studies are an important addition to the literature to more fully ascertain the emergence and trajectory of outcomes stemming from yoga. A more comprehensive understanding of the timeframe during which benefits appear and the degree to which they are sustained following program completion is key in evaluating the usefulness of yoga programs. Along with continued investigation into the age-specific effect of yoga on outcome variables over time, inquiry into process-related variables is necessary to generate a more thorough understanding of how positive outcomes are facilitated. Mindfulness has been suggested as a mediating variable through which yoga may yield beneficial results such as facilitating healthy emotional processes and well-being (Butzer et al., 2016; Gard et al., 2012; Menezes et al., 2015). Based on this, scholars are beginning to explore mindfulness as a mechanism implicated in increasing individuals' ability to regulate emotion through children's yoga programs (Daly et al., 2015). Once a firm link between children's yoga and mindfulness skills has been established, an increase in efforts to explore mindfulness as a mediating variable is warranted in elementary school populations as well.

Concerns and considerations for future research and practical applications regarding

program implementation are brought forward from this study as well. Several students mentioned teaching others the yoga curriculum or using techniques at school or home. As this indicates that it is feasible for students to bring yoga off of the mat and into their lives, in future studies, optional components of homework or sharing with others could be assessed as potentially relevant to program outcomes. Studies examining program variables such as timing, location, age, appropriateness of the activities and instructor qualities would also be helpful in explicitly determining variables contributing to positive student and teacher responsiveness. In both research and intervention application, implementers and educators should allow extra time following and prior to lessons, as well as implementation assessment and feedback from multiple sources. Finally, support from administrators and teachers is key.

## **Conclusion**

This research contributes to the literature purporting yoga as a unique and useful intervention that may be a feasible addition to educational programming. Building on past literature, this study generally suggests that both teachers and students perceived benefits to school yoga. Preliminary findings suggested that students experienced increases in the ability to be mindful and regulate their emotions more adaptively through decreased expressive suppression following the yoga program. This provides a starting point for future studies to substantiate. This study also clarified challenges faced in implementing and researching school yoga programs, including disruptive or distracted students and providing sufficient time or methods to implement and track implementation of the program. Collectively, this study contributes to the growing body of literature investigating yoga as a valuable school-based program and informs future researchers and educators on factors affecting implementation of yoga programs. In conclusion, this research brings us one step closer to developing and successfully implementing programs that facilitate the skills necessary to transition from childhood into adolescence in a way that supports positive and adaptive functioning.



## Tables

**Table 1**

*Correlations between Mindfulness, Emotion Regulation, Optimism, and Classroom Supportiveness*

Variables	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
1. T1 Mindfulness	1															
2. T1 Expressive Suppression	-.315**	1														
3. T1 Cognitive Reappraisal	-.160	.133	1													
4. T1 Life Satisfaction	.254*	-.222*	.258*	1												
5. T1 Positive Affect	.043	-.027	.370**	.491**	1											
6. T1 Negative Affect	-.372**	.024	-.229*	-.545**	-.528**	1										
7. T1 Optimism	.328**	-.255*	.303**	.782**	.601**	-.646**	1									
8..T1 Classroom Supportiveness	-.084	-.040	.195	.357**	.307**	-.312**	.303**	1								
9. T2 Mindfulness	.498**	-.320**	-.092	.297**	.072	-.304**	.328**	.054	1							
10. T2 Expressive Suppression	-.216	.657**	-.116	-.189	-.183	-.031	-.211	-.084	-.276*	1						
11. T2 Cognitive Reappraisal	.033	-.244*	.424**	.334**	.355**	-.268*	.409**	.156	.123	-.237*	1					
12. T2 Life Satisfaction	.244*	-.203	.150	.744**	.419**	-.403**	.618**	.344**	.276*	-.302	.428	1				
13. T2 Positive Affect	.186	-.169	.179	.521**	.634**	-.320**	.551**	.298**	.290	-.387	.489	.716**	1			
14. T2 Negative Affect	-.259*	.005	-.159	-.520**	-.220*	.388**	-.444**	-.218	-.437*	.043	-.290	-.554**	-.444*	1		
15. T2 Optimism	.339**	-.255*	.176	.675**	.439**	-.431**	.752**	.231*	.389**	-.340*	.495	.759**	.711**	-.471**	1	
16.T2 Classroom Supportiveness	-.009	.052	.134	.332**	.292**	-.311**	.281*	.821**	.079	-.097	.245	.368**	.370**	-.266**	.339*	1

\* $p < .05$ , \*\* $p < .01$ .

**Table 2**

*Implementation Diary, Reported in Frequency of Classrooms (Percentages) N=4*

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Week	Time Spent Implementing Lesson (minutes)		
	<u>20-30</u>	<u>30-40</u>	<u>40-50</u>
Week 1	1(25.00)	3(75.00)	0(0.00)
Week 2	1(25.00)	3(75.00)	0(0.00)
Week 3	1(25.00)	1(25.00)	2(50.00)
Total	3(25.00)	7(58.33)	2(16.67)

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**Table 3***Participants' Feedback (Acceptability) Reported in Frequencies (Percentages) N = 80*

SSQ Items	I Did Not Like It At All	I Did Not Like Most Of It	It Was Ok	I Liked It	I Liked It A Lot
1. How much did you like the yoga program?	3(3.75)	9(11.25)	28(35.00)	25(31.25)	15(18.75)
	Nothing	A Little	More Than A Little	Quite A Few Things	A Lot
2. How much did you learn during the yoga program?	7(8.75)	27(33.75)	13(16.25)	28(35.00)	5(6.25)
3. How many of the things that you learned about in the yoga program can you use in your life at school or at home?	10(12.50)	23(28.75)	21(26.25)	20(25.00)	6(7.50)
	Yes	No	Maybe		
4. Have you taught anyone else any of the things that you learned in the yoga program?	17(21.25)	63(78.75)	0(0.00)		
5. Was there anything about the yoga program you did not like?	38(47.50)	42(52.50)	0(0.00)		
6. Would you recommend the yoga program to a friend?	53(66.25)	15(18.75)	12(15.00)		

*Note.* SSQ= Student Satisfaction Questionnaire

**Table 4***Participants' Feedback (Outcomes) Reported in Frequencies (Percentages) N = 80*

SSQ Items	Not At All True	A Little Bit True	Mostly True	Very True
1. The yoga program has helped me to improve my balance.	13(16.25)	30(37.50)	31(38.75)	6(7.50)
2. The yoga program helped me become more flexible.	27(33.75)	29(36.25)	15(18.75)	9(11.25)
3. The yoga program helped me learn how to know what emotions I am feeling.	18(22.50)	35(43.75)	16(20.00)	11(13.75)
4. The yoga program helped me learn tools that can help when I feel negative or overwhelming emotions.	16(20.00)	28(35.00)	24(30.00)	12(15.00)
5. The yoga program helped me learn how to be optimistic, and think more positively.	14(17.50)	27(33.75)	21(26.25)	18(22.50)
6. The yoga program helped me learn more about how I can help myself be happy.	14(17.50)	27(33.75)	29(36.25)	10(12.50)
7. The yoga program helped me learn about how positive affirmations (statements) can help me in daily life.	15(18.75)	23(28.75)	28(35.00)	14(17.50)
8. The yoga program helped me learn about how breathing can help me in my daily life.	12(15.00)	12(15.00)	25(31.25)	31(38.75)
9. Since the yoga program, I try to treat others with kindness more often.	9(11.25)	22(27.50)	32(40.00)	17(21.25)
10. The yoga program helped me learn how to calm down.	14(17.50)	23(28.75)	25(31.25)	18(22.50)
11. The yoga program helped me learn how to focus my attention.	15(18.75)	34(42.50)	21(26.25)	10(12.50)

12. The yoga program helped me feel more confident in myself. 18(22.50) 25(31.25) 23(28.75) 14(17.50)

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*Note.* SSQ = Student Satisfaction Questionnaire.

**Table 5***Teacher's Feedback (Outcomes) Reported in Frequencies (Percentages) N = 3*

TSQ Items	Strongly Disagree	Slightly Disagree	Neither Agree nor Disagree	Agree	Strongly Agree
1. Since participating in the yoga program, my students have increased in their ability to know what emotions they are feeling.	0(0.00)	0(0.00)	3(100.00)	0(0.00)	0(0.00)
2. Since participating in the yoga program, my students have more tools that can help when they feel negative or overwhelming emotions.	0(0.00)	0(0.00)	1(33.33)	2(66.67)	0(0.00)
3. Since participating in the yoga program, my students have appeared more optimistic, and think more positively.	0(0.00)	0(0.00)	2(66.67)	1(33.33)	0(0.00)
4. Since participating in the yoga program, my students appear to know more about how they can help themselves be happy.	0(0.00)	0(0.00)	3(100.00)	0(0.00)	0(0.00)
5. Since participating in the yoga program, my students have learned how positive affirmations (statements) can help in their daily lives.	0(0.00)	0(0.00)	1(33.33)	2(66.67)	0(0.00)
6. Since participating in the yoga program, my students have learned how breathing can help in their daily lives.	0(0.00)	0(0.00)	1(33.33)	1(33.33)	1(33.33)
7. Since participating in the yoga program, my students appear to treat others with	0(0.00)	0(0.00)	3(100.00)	0(0.00)	0(0.00)

kindness more often.

8. Since participating in the yoga program, my students have learned how to calm down.	0(0.00)	0(0.00)	2(66.67)	1(33.33)	0(0.00)
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9. Since participating in the yoga program, my students have learned how to focus their attention.	0(0.00)	0(0.00)	2(66.67)	1(33.33)	0(0.00)
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10. Since participating in the yoga program, my students appear to be more confident in themselves.	0(0.00)	0(0.00)	2(66.67)	1(33.33)	0(0.00)
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*Note.* TSQ = Teacher Satisfaction Questionnaire.

**Table 6***Teacher Feedback (Acceptability) Reported in Frequencies (Percentages) N = 3*

TSQ Items	Nothing	A Little	More Than a Little	Quite a Few Things	A Lot
1. From your perspective, how much did your students learn in the yoga program?	0(0.00)	0(0.00)	1(33.33)	2(66.67)	0(0.00)
2. From your perspective, how many of the skills or concepts your students learned during the yoga program can be used in their lives at school or at home?	0(0.00)	0(0.00)	1(33.30)	2(66.60)	0(0.00)

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*Note.* TSQ = Teacher Satisfaction Questionnaire.



**Table 7***Mean and Standard Deviations of Outcome Variables*

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Variable	T1 <i>M(SD)</i>	T2 <i>M(SD)</i>
Mindfulness	25.13(6.82)	27.29(6.62)
Expressive Suppression	10.86(2.86)	10.24(2.88)
Cognitive Reappraisal	19.79(3.96)	19.04(3.98)
Life Satisfaction	32.18(7.51)	32.65(8.05)
Positive Affect	18.43(4.37)	18.40(5.18)
Negative Affect	9.47(3.61)	9.69(3.27)
Optimism	3.62(.70)	3.65(.76)
Classroom Supportiveness	3.03(.73)	2.96(.81)

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## Appendices

### Appendix A: Participant Assent Forms



**Department of Educational &  
Counselling Psychology & Special Education**  
Faculty of Education  
2125 Main Mall  
Vancouver, B.C., Canada V6T 1Z4  
Tel: (604) 822-6022  
Fax: (604) 822-3302

#### Participant Assent Form

#### **Sun Salutations in School: Exploring the Effect of Mindful Yoga on Students**

##### **Dear students,**

We are researchers from the University of British Columbia. We are interested in learning about how yoga programs change how students experience stress and emotion, and how they feel about their lives. We are inviting you to participate in this project.

**What is the study about?** The purpose of this study is to learn more about how yoga impacts students' your age. Grade 5-7 students in the school yoga will be asked to complete a 30-45 minute survey twice throughout the course of the project. These questionnaires will ask questions about your mood, how present and aware you are, what happens when you experience different feelings, and how you feel about your day-to-day life.

**Confidentiality:** All of your answers are private. Only the researchers will know your answers and only your identification number will go on the questionnaires. Questionnaires will not have your name on them or any other information that could tell us who you are. When all of the questionnaires are put together, we will only discuss what we learn about the group of students who participated in this study and no individual answers will be discussed. If there are any questions you do not feel comfortable answering, you can leave those questions blank. You can also stop participating in the study at any time without giving a reason and without any negative impact for you. If you do feel upset after finishing the questionnaire for any reason, you can talk to your school counselor or another adult. You can let us know on the last page of the questionnaire, where you will also find a list of other people you can talk to if you are upset.

**Contact:** If you have any questions, please ask the researchers or contact Morgan McKusick at . If you have any concerns or complaints about your rights as a research participant and/or your experiences while participating in this study, contact the Research Participant Complaint Line in the UBC Office of Research Ethics at 604-822-8598 or for long distance e-mail [RSIL@ors.ubc.ca](mailto:RSIL@ors.ubc.ca) or call toll free 1-877-822-8598.

**Consent:** Your participation is voluntary. Please let us know if you choose to participate or not.

Sincerely,  
Morgan McKusick, M.A. Student,

Rhea Owens, Ph.D.

Counselling Psychology  
Psychology,  
University of British Columbia

Assistant Professor of Counselling  
University of British Columbia

I am willing to participate in this study (please check one box):

YES, I consent to participate in this study.  NO, I do not consent to participate in this study

First and Last Name (Printed): \_\_\_\_\_

Signature: \_\_\_\_\_ Date: \_\_\_\_\_



**Department of Educational & Counselling Psychology & Special Education**

Faculty of Education  
2125 Main Mall  
Vancouver, B.C., Canada V6T 1Z4  
Tel: (604) 822-6022  
Fax: (604) 822-3302

**Participant Consent Form**

**Sun Salutations in School: Exploring the Effect of Mindful Yoga on Students**

**Dear teachers,**

We would like to invite you to participate in research being conducted at the University of British Columbia. This project aims to explore the impact of yoga programs on students’ emotional experience and how they feel about their lives.

**What is the study about?** The purpose of this study is to learn more about how yoga impacts students in Grades 5-7. Teachers of students participating in the yoga program will be asked to complete a 15-minute survey upon completion of the yoga program. This questionnaire will ask questions regarding observations of your students’ behaviour and attitudes towards the yoga program. The questionnaire will include questions about your perception of the program as well.

**Confidentiality:** All of your answers are confidential. Only the researchers will have access to the questionnaires. Questionnaires will be coded with an identification number and will not include your name or any other identifying information. If there are any questions you do not feel comfortable answering, please omit these questions.

**Contact:** If you have any questions, please ask the researchers or contact Morgan McKusick at [redacted]. If you have any concerns or complaints about your rights as a research participant and/or your experiences while participating in this study, contact the Research Participant Complaint Line in the UBC Office of Research Ethics at 604-822-8598 or if long distance e-mail RSIL@ors.ubc.ca or call toll free 1-877-822-8598.

**Consent:** Your participation is voluntary. You may withdraw from the study until completion of the questionnaire. If you experience distress at any time as a result of the questionnaire, please let the researcher know and/or contact the school counsellor. A bookmark with crisis and distress related resources will be provided to you upon completion of the survey.

Sincerely,

Morgan McKusick,  
M.A. Counselling Psychology Student  
University of British Columbia

Rhea Owens, Ph.D.  
Assistant Professor of Counselling Psychology  
University of British Columbia

I am willing to participate in this study (please check one box):

YES, I consent to participate in this study.  NO, I do not consent to participate in this study.

First and Last Name (Printed): \_\_\_\_\_

Signature: \_\_\_\_\_ Date: \_\_\_\_\_

## Appendix B: Parent/Guardian Consent Form and Demographics



Department of Educational &  
Counselling Psychology & Special Education  
Faculty of Education  
2125 Main Mall  
Vancouver, B.C., Canada V6T 1Z4  
Tel: (604) 822-6022  
Fax: (604) 822-3302

### Parent/Guardian Consent Form

#### Sun Salutations in School: Exploring the Effect of Mindful Yoga on Students

Dear parent/guardian,

We are writing to invite your child to participate in a research project being conducted at your school by Morgan McKusick and Rhea Owens from the University of British Columbia. This research, which will inform the Co-Investigator's Master's thesis, will explore how mindful yoga, such as the 10-week yoga program your child is participating in at school, effects wellbeing and ability to regulate emotions. All Grade 5-7 students participating in the Mind Your Movements Yoga program at Ladner Elementary will be invited to take part in this project, providing they have the English reading and comprehension skills to complete a questionnaire. Students require parent/guardian consent and must also give personal assent before participating. This research project is optional and the following information is provided for you to decide whether or not your child can participate in the study.

**Principal Investigator:** Rhea Owens, Department of Educational & Counselling Psychology, and Special Education. The University of British Columbia  
Email: \_\_\_\_\_, Phone number: \_\_\_\_\_

**Co-Investigator:** Morgan McKusick, Graduate Student, Department of Educational & Counselling Psychology and Special Education. The University of British Columbia  
Email: \_\_\_\_\_

**Purpose:** The purpose of this study is to investigate how participation in yoga impacts elementary school students' levels of mindfulness, emotional experiences, and wellbeing.

**Description:** Participation in this study will require students to complete a questionnaire two times throughout the course of the study. This questionnaire will take approximately 30-45 minutes to complete, and contains multiple choice questions about students' mood, sense of mindfulness, emotional awareness, regulation strategies, life satisfaction, and self-worth. Parents/guardians will be asked to complete a demographic questionnaire about your child, which can be found at the end of this packet.

**Potential Risks and Benefits:** We believe that our study presents minimal risks and will help examine the effectiveness of school yoga programs, which will hopefully aid in further development and implementation of such programming. There is the possibility that some individuals might feel upset when answering questions related to self-concept, negative experiences, or life satisfaction. The researchers have minimized this risk by ensuring to clearly explain the purpose and content of the study, which will allow the children to make an informed decision to participate or not participate. Students will have the option of omitting any question they do not wish to answer for any reason, and

are free to withdraw from the study at any given time without any negative consequences to themselves or anyone else. Additionally, the students will be monitored during questionnaire administration, and if any students do feel upset upon completion of the questionnaires, researchers will provide students with various ways to access support if necessary, including encouraging them to talk to a school counselor or other trustworthy adult. While there is no direct benefit for participating in this research, reflecting on the survey questions may increase awareness of one's emotional experiences and wellbeing. Additionally, reflecting on survey questions may result in increased interest in learning strategies to regulate emotion and foster wellbeing.

**Confidentiality:** The researchers will prioritize participants' anonymity. Researchers will ensure that all information is kept strictly confidential and only seen by the Primary Investigator, Co-Investigator, and research assistants. The questionnaires will not include any personal identifiers or information that could be used to identify participants. Consent and assent forms will be the only form with identifying information, and will be collected at a separate time and stored independently of the survey packages.

Only randomly generated identification numbers will be used to identify participants. The list of names and ID numbers will only be seen by the research team and will be stored in a secure location. The list of names and ID numbers, consent forms and completed surveys will be kept in a locked file cabinet in the PI's research lab or office. Digital data will be stored in password-protected and encrypted files on a secure computer. No names or identifiers will be stored will be stored on computer files.

Group based results from this study may be published in books and journal articles or presented at conferences. No individual information will be shared or released.

**Compensation:** Students who return this consent form signed, whether or not their parent/guardian agrees to let them to participate, will be entered in a draw for a \$10 gift card.

**Contact for information about the study:** If you have any questions or would like further information, you may contact the Co-Investigator at \_\_\_\_\_ or the Primary Investigator at \_\_\_\_\_. If you have any concerns or complaints about your rights as a research participant and/or your experiences while participating in this study, contact the Research Participant Complaint Line in the UBC Office of Research Ethics at 604-822-8598 or if long distance e-mail [RSIL@ors.ubc.ca](mailto:RSIL@ors.ubc.ca) or call toll free 1-877-822-8598.

Sincerely,

Rhea Owens,  
Assistant Professor of Counselling Psychology  
University of British Columbia

Morgan McKusick,  
M.A. Student, Counselling Psychology  
University of British Columbia

**\*\*\* PLEASE KEEP THIS LETTER AND FIRST COPY OF THE CONSENT  
FORM FOR YOUR RECORDS \*\*\***



**\*\*\*PLEASE KEEP THE FIRST COPY OF THE CONSENT FORM FOR YOUR RECORDS \*\*\***

**Parent/Guardian Consent Form**

**Project:** Sun Salutations in School: Exploring the Effect of Mindful Yoga on Students

**Principal Investigator:** Rhea Owens, Ph. D., Department of Educational & Counselling Psychology, and Special Education, The University of British Columbia

**Co-Investigator:** Morgan McKusick , Graduate Student, Department of Educational & Counselling Psychology and Special Education, The University of British Columbia

**Consent:** I have read the above information regarding “Sun Salutations in School: Exploring the Effect of Mindful Yoga on Students.” I understand that my child’s participation is completely voluntary and that he/she may withdraw at any time with no consequences. I have received a copy of this form to keep for my own records

I give my permission for my child to participate in this study. *Please check one:*

YES, I consent to my son/daughter’s participation in this project.

NO, I do not consent to my son/daughter’s participation in this project.

\_\_\_\_\_  
Son/Daughter’s Name (please print)

\_\_\_\_\_  
Teacher’s Name

\_\_\_\_\_  
Parent/Guardian Signature

\_\_\_\_\_  
Date

**\*\*PLEASE COMPLETE AND RETURN THIS PAGE TO THE SCHOOL\*\***

**Parent/Guardian Consent Form**

**Project:** Sun Salutations in School: Exploring the Effect of Mindful Yoga on Students

**Principal Investigators:** Rhea Owens, Ph.D., Department of Educational & Counselling Psychology, and Special Education, The University of British Columbia

**Co-Investigators:** Morgan McKusick Graduate Student, Department of Educational & Counselling Psychology and Special Education, The University of British Columbia

**Consent:** I have read the above information regarding “Sun Salutations in School: Exploring the Effect of Mindful Yoga on Students”. I understand that my child’s participation is completely voluntary and that he/she may withdraw at any time with no consequences. I have received a copy of this form to keep for my own records

I give my permission for my child to participate in this study. *Please check one:*

YES, I consent to my son/daughter’s participation in this project.

NO, I do not consent to my son/daughter’s participation in this project.

\_\_\_\_\_  
Son/Daughter’s Name (please print)

\_\_\_\_\_ Teacher’s Name

\_\_\_\_\_ Parent/Guardian Signature

\_\_\_\_\_ Date

## Child Demographic Questionnaire

Please answer the following questions about your child and your child's family. You do not have to answer any questions you are not comfortable with.

Your child's age: \_\_\_\_\_ Your child's gender: \_\_\_\_\_ Male \_\_\_\_\_ Female

Your child's grade in school: \_\_\_\_\_ 5<sup>th</sup> \_\_\_\_\_ 6<sup>th</sup> \_\_\_\_\_ 7<sup>th</sup>

### Your child's race/ethnicity:

\_\_\_\_\_ African; African-American; Black

\_\_\_\_\_ American Indian; Native American; First Nations

\_\_\_\_\_ Arab American; Middle Eastern

\_\_\_\_\_ Asian; Asian American; Chinese; Filipino; Southeast Asian; West Asian; Japanese; Korean

\_\_\_\_\_ Asian Indian

\_\_\_\_\_ Hispanic; Latina/o American

\_\_\_\_\_ Pacific Islander

\_\_\_\_\_ White; European American; Caucasian

\_\_\_\_\_ Multiracial

\_\_\_\_\_ Other (please list): \_\_\_\_\_

### What is your family make up?

\_\_\_\_\_ 1 parent/guardian

\_\_\_\_\_ 2 parent/guardian

### What is your education?

\_\_\_\_\_ Less than high school degree

\_\_\_\_\_ High school diploma or equivalent

\_\_\_\_\_ Bachelor's degree

\_\_\_\_\_ Master's/Ph.D./M.D./J.D.

### What is your family's income level?

\_\_\_\_\_ \$10,000 - \$14,999

\_\_\_\_\_ \$50,000 - \$74,999

\_\_\_\_\_ \$35,000 - \$49,999

\_\_\_\_\_ \$75,000 - \$99,999

\_\_\_\_\_ \$15,000 - \$24,999

\_\_\_\_\_ \$100,000 – and above

\_\_\_\_\_ \$25,000 - \$34,999

\_\_\_\_\_ unknown

## Appendix C: Measures

### Child and Adolescent Mindfulness Questionnaire (CAAMM)

We want to know about what you think, how you feel and what you do. Please read each sentence. Then **circle the number that tells how often each sentence is true for you.**

	Never True	Rarely True	Someti mes True	Often True	Always True
1. I get upset with myself for having feelings that don't make sense.	0	1	2	3	4
2. At school, I walk from class to class without noticing what I'm doing.	0	1	2	3	4
3. I keep myself busy so I don't notice my thoughts or feelings.	0	1	2	3	4
4. I tell myself that I shouldn't feel the way I'm feeling.	0	1	2	3	4
5. I push away thoughts that I don't like.	0	1	2	3	4
6. It's hard for me to pay attention to only one thing at a time.	0	1	2	3	4
7. I get upset with myself for having certain thoughts.	0	1	2	3	4
8. I think about things that have happened in the past instead of thinking about things that are happening right now.	0	1	2	3	4
9. I think that some of my feelings are bad and that I shouldn't have them.	0	1	2	3	4
10. I stop myself from having feelings that I don't like.	0	1	2	3	4

## The Emotional Regulation Questionnaire for Children and Adolescents (ERQ-CA)

We would like to ask you some questions about your emotional life, in particular, how you control (that is, regulate and manage) your emotions. The questions below involve two distinct aspects of your emotional life. One is your emotional experience, or what you feel like inside. The other is your emotional expression, or how you show your emotions in the way you talk, gesture, or behave. Although some of the following questions may seem similar to one another, they differ in important ways.

For each item, please answer using the following scale:

<b>1</b>	<b>2</b>	<b>3</b>	<b>4</b>	<b>5</b>
<b>Strongly</b>	<b>Disagree</b>	<b>Half and Half</b>	<b>Agree</b>	<b>Strongly</b>
<b>Disagree</b>				<b>Agree</b>

1. \_\_\_ When I want to feel happier, I think about something different.
2. \_\_\_ I keep my feelings to myself.
3. \_\_\_ When I want to feel less bad (e.g. sad, angry or worried), I think about something different.
4. \_\_\_ When I am feeling happy, I am careful not to show it.
5. \_\_\_ When I'm worried about something, I make myself think about it in a way that helps me feel better.
6. \_\_\_ I control my feelings by not showing them
7. \_\_\_ When I want to feel happier about something, I change the way I'm thinking about it.
8. \_\_\_ I control my feelings about things by changing the way I think about them.
9. \_\_\_ When I am feeling bad (e.g. sad, angry, or worried), I'm careful not to show it.
10. \_\_\_ When I want to feel less bad (e.g. sad, angry, or worried) about something, I change the way I'm thinking about it.
11. \_\_\_ When I am feeling bad (e.g. sad, angry, or worried), I'm careful not to show it.
12. \_\_\_ When I want to feel less bad (e.g. sad, angry, or worried) about something, I change the way I'm thinking about it.

**Positive and Negative Affect Schedule for Children (PANAS-C)**

I'm going to ask you how much you have felt a certain way during the last few weeks. People feel different ways a lot of the time. I am interested how you feel. Pick the response that best describes how much you have felt each feeling over the past few weeks.

**How much have you felt \_\_\_\_\_ (fill in emotion below) over the last few weeks?**

	Very Slightly	A Little	Sort Of	Quite a Bit	A Lot
Sad	1	2	3	4	5
Happy	1	2	3	4	5
Scared	1	2	3	4	5
Miserable	1	2	3	4	5
Cheerful	1	2	3	4	5
Proud	1	2	3	4	5
Afraid	1	2	3	4	5
Joyful	1	2	3	4	5
Mad	1	2	3	4	5
Lively	1	2	3	4	5

### Student's Life Satisfaction Scale (SLSS)

We would like to know what thoughts about life you have had during the past several weeks. Think about how you spend each day and night and then think about how your life has been during most of this time. Here are some questions that ask about your satisfaction with your overall life. Pick the words next to each statement that indicate how much you agree or disagree with each statement.

**For example, if you think “Life is great,” is Sort of True, circle those words.**

**1. My life is going well.**

Really Not True	Sort of Not True	A Little Not True	A Little True	Sort of True	Really True
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**2. My life is just right.**

Really Not True	Sort of Not True	A Little Not True	A Little True	Sort of True	Really True
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**3. I would like to change many things in my life.**

Really Not True	Sort of Not True	A Little Not True	A Little True	Sort of True	Really True
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**4. I wish I had a different kind of life.**

Really Not True	Sort of Not True	A Little Not True	A Little True	Sort of True	Really True
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**5. I have a good life.**

Really Not True	Sort of Not True	A Little Not True	A Little True	Sort of True	Really True
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**6. I have what I want in life.**

Really Not True	Sort of Not True	A Little Not True	A Little True	Sort of True	Really True
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**7. My life is better than most kids.**

Really Not True	Sort of Not True	A Little Not True	A Little True	Sort of True	Really True
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### Optimism Subscale

Please circle the answer that best describes how true each statement is for you.

	<b>Not at All Like Me</b>	<b>A Little Bit Like Me</b>	<b>Kind of Like Me</b>	<b>A Lot Like Me</b>	<b>Always Like Me</b>
1. I have more bad times than good.	<b>1</b>	<b>2</b>	<b>3</b>	<b>4</b>	<b>5</b>
2. More good things than bad things will happen to me.	<b>1</b>	<b>2</b>	<b>3</b>	<b>4</b>	<b>5</b>
3. I start most days thinking I'll have a bad day.	<b>1</b>	<b>2</b>	<b>3</b>	<b>4</b>	<b>5</b>
4. Even if there are bad things, I'm able to see the good things about me and my life.	<b>1</b>	<b>2</b>	<b>3</b>	<b>4</b>	<b>5</b>
5. I'm bored by most things in life.	<b>1</b>	<b>2</b>	<b>3</b>	<b>4</b>	<b>5</b>
6. I think things will get worse in the future.	<b>1</b>	<b>2</b>	<b>3</b>	<b>4</b>	<b>5</b>
7. I am optimistic about school life.	<b>1</b>	<b>2</b>	<b>3</b>	<b>4</b>	<b>5</b>
8. I think that I am a lucky one.	<b>1</b>	<b>2</b>	<b>3</b>	<b>4</b>	<b>5</b>
9. When something bad happens to me, I think that it will last long.	<b>1</b>	<b>2</b>	<b>3</b>	<b>4</b>	<b>5</b>



### Classroom Supportiveness Scale

Please read the question and circle the number that best describes how you feel about your classroom and your classmates.

	<b>Disagree a Lot</b>	<b>Disagree a Little</b>	<b>Do Not Agree or Disagree</b>	<b>Agree a Little</b>	<b>Agree A Lot</b>
1. Students in this class are willing to go out of their way to help each other.	<b>1</b>	<b>2</b>	<b>3</b>	<b>4</b>	<b>5</b>
2. My classmates care about my work just as much as their own.	<b>1</b>	<b>2</b>	<b>3</b>	<b>4</b>	<b>5</b>
3. This class is like a family.	<b>1</b>	<b>2</b>	<b>3</b>	<b>4</b>	<b>5</b>
4. The students in this class really care about each other.	<b>1</b>	<b>2</b>	<b>3</b>	<b>4</b>	<b>5</b>
5. Students in this class like to put others down.	<b>1</b>	<b>2</b>	<b>3</b>	<b>4</b>	<b>5</b>
6. Students in this class help each other learn.	<b>1</b>	<b>2</b>	<b>3</b>	<b>4</b>	<b>5</b>
7. Students in this class help each other, even if they are not friends.	<b>1</b>	<b>2</b>	<b>3</b>	<b>4</b>	<b>5</b>

		<b>Disagree a Lot</b>	<b>Disagree a Little</b>	<b>Do Not Agree or Disagree</b>	<b>Agree a Little</b>	<b>Agree A Lot</b>
8.	Students in this class get along together very well.	<b>1</b>	<b>2</b>	<b>3</b>	<b>4</b>	<b>5</b>
9.	Students in this class just look out for themselves.	<b>1</b>	<b>2</b>	<b>3</b>	<b>4</b>	<b>5</b>
10.	Students in this class are mean to each other.	<b>1</b>	<b>2</b>	<b>3</b>	<b>4</b>	<b>5</b>
11.	When I'm having trouble with my work in this class, at least one of my classmates will try to help me.	<b>1</b>	<b>2</b>	<b>3</b>	<b>4</b>	<b>5</b>
12.	Students in this class treat each other with respect.	<b>1</b>	<b>2</b>	<b>3</b>	<b>4</b>	<b>5</b>
13.	Students in this class work together to solve problems.	<b>1</b>	<b>2</b>	<b>3</b>	<b>4</b>	<b>5</b>
14.	When someone in my class does well, everyone in the class feels good.	<b>1</b>	<b>2</b>	<b>3</b>	<b>4</b>	<b>5</b>

## Student Satisfaction Questionnaire (SSQ)

**SECTION ONE:** Please read the question and circle the number that best describes how you feel.

	Not at all true	A little bit true	True most of the time	True all of the time
1. The yoga program has helped me to improve my <b>balance.</b>	1	2	3	4
2. The yoga program helped me become more <b>flexible.</b>	1	2	3	4
3. The yoga program helped me learn how to <b>know what emotions I am feeling.</b>	1	2	3	4
4. The yoga program helped me learn tools that can <b>help when I feel negative or overwhelming emotions.</b>	1	2	3	4
5. The yoga program helped me learn how to be <b>optimistic, and think more positively.</b>	1	2	3	4
6. The yoga program helped me learn more about how <b>I can help myself be happy.</b>	1	2	3	4
7. The yoga program helped me learn about <b>how positive affirmations (statements) can help me in daily life.</b>	1	2	3	4
8. The yoga program helped me learn about how <b>breathing can help me in my daily life.</b>	1	2	3	4
9. Since the yoga program, I try to <b>treat others with kindness more often.</b>	1	2	3	4
10. The yoga program helped me learn how to <b>calm down.</b>	1	2	3	4
11. The yoga program helped me learn how to <b>focus my attention.</b>	1	2	3	4
12. The yoga program helped me feel more <b>confident in myself.</b>	1	2	3	4

**SECTION TWO:** Please read the question and circle the number that best describes how you feel.

**1. How much did you like the yoga program?**

- |                           |                            |            |             |                   |
|---------------------------|----------------------------|------------|-------------|-------------------|
| 1                         | 2                          | 3          | 4           | 5                 |
| I did not like it at all! | I did not like most of it. | It was OK. | I liked it. | I liked it a lot! |

**2. How much did you learn in the yoga program?**

- |         |          |                    |                    |       |
|---------|----------|--------------------|--------------------|-------|
| 1       | 2        | 3                  | 4                  | 5     |
| nothing | a little | more than a little | quite a few things | a lot |

**3. How many of the things that you learned about in the yoga program can you use in your life at school or at home?**

- |         |          |                    |                    |       |
|---------|----------|--------------------|--------------------|-------|
| 1       | 2        | 3                  | 4                  | 5     |
| nothing | a little | more than a little | quite a few things | a lot |

**4. Have you taught anyone else any of the things that you learned in the yoga program?**

Yes  No If yes, who did you teach? Circle all that apply:

Mother    Father    Sister    Brother    Friend    Other

**Describe what you taught them:**

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**SECTION THREE**

**1. Is there anything else that you learned about in the yoga program?**

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**2. What did you like best about the yoga program?**

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**3. Was there anything that you did not like?    No    Yes**

**If so, please explain:**

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**4. Would you recommend the yoga program to a friend?    Yes    No**

**Why or why not?**

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**SECTION ONE:** We want to know what you observed during the yoga program your students took part in. Please read the question and circle the number that best describes how you feel.

	Strongly Disagree	Disagree	Neither Agree nor Disagree	Agree	Strongly Agree
1. Since participating in the yoga program, my students have increased in their ability to <b>know what emotions they are feeling.</b>	1	2	3	4	5
2. Since participating in the yoga program, my students have more tools that can <b>help when they feel negative or overwhelming emotions.</b>	1	2	3	4	5
3. Since participating in the yoga program, my students have appeared more <b>optimistic</b> , and <b>think more positively.</b>	1	2	3	4	5
4. Since participating in the yoga program, my students appear to know more about how <b>they can help themselves be happy.</b>	1	2	3	4	5
5. Since participating in the yoga program, my students have learned <b>how positive affirmations (statements) can help in their daily lives.</b>	1	2	3	4	5
6. Since participating in the yoga program, my students have learned how <b>breathing can help in their daily lives.</b>	1	2	3	4	5
7. Since participating in the yoga program, my students appear to <b>treat others with kindness more often.</b>	1	2	3	4	5
8. Since participating in the yoga program, my students have learned how to <b>calm down.</b>	1	2	3	4	5
9. Since participating in the yoga program, my students have learned how to <b>focus their attention.</b>	1	2	3	4	5
10. Since participating in the yoga program, my students appear to be more <b>confident in themselves.</b>	1	2	3	4	5

**SECTION TWO:** We want to know more about what your students learned from the yoga program. Please answer the questions below.

5. Did you participate in the yoga program with your students?

Yes  No If yes, how many classes did you attend? \_\_\_\_\_

If yes, what did you personally learn during the yoga program?

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6. From your perspective, how much did your students learn in the yoga program?

1	2	3	4	5
Nothing	A Little	More than a little	Quite a few things	A Lot

7. From your perspective, how many of the skills or concepts your students learned during the yoga program can be used in their lives at school or at home?

1	2	3	4	5
Nothing	A Little	More than a little	Quite a few things	A Lot

8. Are you aware of your students sharing/teaching you or anyone else skills or concepts they learned in the yoga program?

Yes  No If yes, who did they teach? Circle all that apply:

**Y**ourself (Teacher)    **F**amily    **F**riend    **O**ther

Please describe what they taught you or others:

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5. Are you aware of anything else your students learned about in the yoga program?

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**SECTION THREE:** We want to learn more about how you felt about the yoga program your students participated in. Please answer the questions below.

1. What did you like best about your students participating in the yoga program?

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2. Was there anything that you did not like about your students participating in the yoga program?

Yes  No If so, please explain:

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3. Would you recommend the yoga program to other teachers or schools?

Yes  No Why or why not?

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