Evaluating the Effects of a Six-Session Book Study on Educators' Mindfulness Practices

By

Michelle Kellogg

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The members of the Committee approve the thesis of

Michelle Kellogg presented on May 7th, 2021

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Dr. Mickey Crothers, Chair

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Dr. Mary Beth Tusing

_____

Dr. Jerry Worley

APPROVED: _____

Dean of Graduate Studies

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Under the Supervision of Dr. Mickey Crothers

Mindfulness-based practices have increasingly been implemented in schools in recent years. Research has reflected that mindfulness interventions may provide positive results for students (e.g., Schonert et al., 2015). Little research has been conducted regarding educators' experiences and perceptions of mindfulness prior to implementation in the classroom, which may influence the success of interventions. This pilot study explores a potential way to increase educators' personal mindfulness practices and increase their perceptions of the acceptability of mindfulness practices through participation in a book study. A comparison of pretest and posttest scores on the Behavior Intervention Rating Scale and the Five Facet Mindfulness Questionnaire displayed an increase in educators' ratings of appropriateness of a mindfulness-based intervention designed for students and their own self-perceived mindfulness. Scores on other scales measuring educators' perceptions of their own mindfulness did not change significantly from pretest to posttest.

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Thesis Adviser (Signature)   Date

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Evaluating the Effects of a Six-Session Book Study on Educators' Mindfulness Practices

Mindfulness-based practices have gained popularity in many arenas including business, sports, self-help, the treatment of emotional and behavioral disorders and, most recently, education. Jon Kabat-Zinn (1994) has conceptualized mindfulness as "paying attention in a particular way: on purpose, in the present moment, and nonjudgmentally" (p. 4). Mindfulness practices can take many forms including breathing exercises, mindful eating, mindful walking, and meditation. Those unfamiliar with mindfulness-based practices may immediately associate the term with Buddhism; however, the practice itself is secular and can be applied in many diverse circumstances. Mindfulness has become widely recognized in popular culture in recent years, appearing on the cover of *Time* magazine and in popular talk shows such as the one hosted by Oprah Winfrey, and often being referenced by both Hollywood stars and professional athletes as a tool they find useful in their daily lives.

Preceding the recent surge of interest in mindfulness in the mainstream and its applications in numerous areas of life, the research on mindfulness-based practices in the United States initially gained momentum in the 1980s and focused on the physiological and psychological effects of mindfulness practices on the body. Jon Kabat-Zinn, founding Executive Director of the Center for Mindfulness in Medicine, Health Care, and Society at the University of Massachusetts Medical School, pioneered much of this initial research. In an early study, Kabat-Zinn (1985) recruited chronic pain patients and randomly assigned them either to a control group that received treatment as usual, or to an experimental group that received a 10-week Stress Reduction and Relaxation Program that incorporated mindfulness meditation. The results showed statistically significant

differences between participants receiving the mindfulness intervention, and those in the control group. Specifically, those in the mindfulness group showed more pronounced reductions in pain, overall symptoms, mood disturbance, anxiety, depression, and negative body image, than those in the control group (Kabat-Zinn et al., 1985). In another study led by Kabat-Zinn and colleagues, patients receiving light treatments for moderate to severe psoriasis experienced more rapid healing of their skin lesions when their treatment protocol included both light treatments and meditative stress reduction exercises, as compared to patients receiving light treatments only (Kabat-Zinn et al., 1998).

Research by Davidson and colleagues (2003) has further demonstrated links between mindfulness meditation and both psychological and physiological functioning. These researchers have suggested that mindfulness meditation may have a positive effect on both brain and immune function. In comparison to those in the wait-list control group, participants in the experimental group of this randomized, controlled study displayed increased activity in areas of the brain associated with positive affect as well as increases in antibody titers to influenza vaccine after they completed an eight-week mindfulness meditation program (Davidson et al., 2003).

Other research has demonstrated long-term beneficial effects of mindfulness meditation for individuals with diagnosed anxiety disorders (Miller et al., 1995). Three years after the completion of an eight-week outpatient stress reduction intervention based on mindfulness meditation, patients continued to maintain the gains they had made in the original study, suggesting that mindfulness meditation can have long-term positive effects in the treatment of individuals with diagnosed anxiety disorders (Miller et al.,

1995). As the impacts of mindfulness-based interventions have received increased research attention, the demonstrated psychological and physiological effects have captured the attention of professionals beyond the medical field, including those working in the fields of mental health and education.

Interest in incorporating mindfulness-based practices into the field of education has grown rapidly in recent years, perhaps sparked by the growing body of research demonstrating the importance of social emotional development of students in schools. For example, Durlak and colleagues (2011) conducted a meta-analysis of 213 universal social and emotional learning programs conducted in schools and compared student outcomes in those schools with student outcomes in schools that did not provide such programs. Results for the students in schools that provided social and emotional learning programs showed not only significant improvement in students' social and emotional skills, attitudes, and behavior but, more remarkably, an 11% increase in academic performance as measured by standardized reading and math achievement, overall GPA, and specific subject grades, when compared with students in schools that did not provide social and emotional learning programs (Durlak et al., 2011). These findings suggest that incorporating social emotional curricula for all students at a universal level is not only beneficial for their emotional health but may also have a positive impact on their academic performance.

Along related lines, initial studies of the effects of specific mindfulness-based interventions for students appear promising, and this literature is developing rapidly. A recent meta-analysis of 76 group design studies supports the categorization of mindfulness-based interventions as social-emotional learning interventions and

demonstrates a small overall positive influence on numerous therapeutic outcome domains, including improved academic achievement and school functioning; decreased externalizing problems; decreased internalizing problems; decreased negative emotions and subjective distress; increased positive emotions; more positive self-appraisal; improved physical health; and increased social competence and prosocial behavior, with an effect size of $g = .29$ (Klingbeil et al., 2017).

Students participating in mindfulness-based interventions in schools have exhibited increases in attention, self-control, caring/respect for others, and social competence, and reductions in off-task behavior (Black & Fernando, 2013; Felver et al., 2014; Flook et al., 2015). The potential benefits of mindfulness-based interventions for students continues to be the focus of ongoing research efforts, but exploration of broader benefits is also gaining momentum. For example, researchers have recently begun investigating whether mindfulness practices may help educators cope with stress and prevent burnout. Researchers are also studying the fidelity of mindfulness-based interventions as they are being delivered to students. The literature review that follows will provide a summary of mindfulness-based practices; identify the need for mindfulness-based interventions for educators due to the high stress and high incidence rates of burnout in their field; and review the possible indirect benefits to students by increasing teacher mindfulness.

Review of Literature

Summary of Mindfulness-Based Practices

The term 'mindfulness' is often misunderstood. One misconception about mindfulness is that many people assume it is inherently and invariably connected to the

Buddhist religion. Historically, mindfulness indeed has roots in Eastern religions – particularly Buddhism, but it has been modified for use in secular settings utilizing a variety of techniques. For example, it can be represented in practices such as meditation, yoga, or tai chi. Mindfulness is incorporated in all these practices for similar purposes – to help steady the mind and train attention capacity while increasing focus (Zenner, Herrnleben-Kurz, & Walach, 2014).

A second misconception is the notion that mindfulness is synonymous with attention. While attention is a central aspect of mindfulness, the focus of the attention is purposeful, and goes beyond what would typically be described as simply paying attention. For example, during a lecture in class, a student may be paying attention, but may not be mindful if they are focusing on how hard the test is going to be and already worrying about failing it.

These two misconceptions can often leave people misinformed about the practice of mindfulness. It is important to address these misconceptions about mindfulness, as they may narrow the scope of applied mindfulness practices, thereby hindering their potential benefits. For example, if one holds the misconception that practicing mindfulness means adoring a deity that is unfamiliar to them, they may avoid the practice altogether.

Like any skill, mindfulness can be taught and learned. Individuals can practice mindfulness in a variety of ways. Some of the basic practices focus on breathing techniques, emphasizing direct and purposeful focus on the breath coming into the body and exiting the body. Practicing slow, deep breathing tends to be calming and allows more airflow into the lungs (Mayo Clinic, 2013). This type of intentional breathing draws

the individual's attention to the breath, thereby taking the focus away from stimuli that may be causing emotional reactions. Mindful breathing and other mindfulness-based strategies may help reduce stress and increase relaxation. A hallmark of mindfulness practice is that, if a distracting thought floats into the mind, the person is to acknowledge that thought and let it pass without becoming attached to it or getting caught up in it, and then re-focus their attention on their breathing. This exercise of continually bringing awareness back to the breath every time another thought enters the mind is a fundamental principle of mindfulness and may strengthen a person's ability to be more fully present in situations throughout their daily life (Kabat-Zinn, 2005).

Body sensation meditations are another form of mindfulness practice. Humans unconsciously and instinctually place their experiences into three categories: pleasant, unpleasant, or neutral. The tendency is either to hold onto an experience or push it away, depending on how the person perceives and interprets the experience (Salzberg, 2014). These instinctual reactions may result in the person not actually enjoying a pleasant experience because they are trying so hard to hold onto it, or the person may place judgment on their negative feelings, which may then lead to a self-perpetuating spiral of negativity. Body scan meditation involves the individual lying in a comfortable position and sequentially focusing attention on specific parts of the body. If positive or negative sensations are observed, the practice is simply to notice those sensations and move on without making any judgment, without trying to interpret or alter them, and without trying to hold onto them or push them away (Salzberg, 2014).

Walking meditation, eating meditation, and drinking meditation are examples of other mindfulness practices that focus intentional attention on everyday activities that

have become automatic. During walking mediation, individuals focus their attention on the movements of their legs and feet with every step they take. In drinking and eating meditations, the individual eats or drinks in silence, focusing intently on texture and taste, and on each individual bite, sip, and movement of the jaw, rather than engaging in conversation or eating so quickly that the food is hardly even tasted. The key element with any mindfulness practice is that the individual's attention is intentionally focused on an action or experience, allowing them to observe what is happening in that moment without placing judgment on the situation or experience (Salzberg, 2014).

The first mindfulness-based intervention developed specifically for the therapeutic setting was called Mindfulness-Based Stress Reduction (MBSR) and was created by Jon Kabat-Zinn (1990) at the University of Massachusetts Medical School. The full MBSR treatment regimen includes body scan meditations, sitting meditations, walking meditations, informal meditation practices examining pleasant and unpleasant events, daily home practice, individual and group dialogue, and a full-day silent retreat (Kabat-Zinn, 1994). Kabat-Zinn's physician colleagues were initially skeptical and dismissive regarding the potential benefits of mindfulness-based interventions to assist with patients' medical concerns, such as chronic pain. However, Kabat-Zinn and his colleagues showed consistent and compelling evidence for the efficacy of mindfulness interventions, particularly in helping patients manage chronic pain conditions (Kabat-Zinn et al., 1985). For example, in one of Kabat-Zinn and colleagues' (1985) early studies chronic pain patients who participated in a mindfulness meditation stress reduction and relaxation program showed clinically significant reductions in pain and reductions in psychological symptoms characteristic of anxiety and depression, as

compared with patients who did not receive MBSR. Additionally, a review of literature that included 16 studies (eight controlled and eight uncontrolled trials) indicated that mindfulness-based interventions reduced pain intensity for individuals experiencing chronic pain (Reiner et al., 2013). Kabat-Zinn's pioneering research served as the springboard for myriad studies that have shown the benefits of mindfulness for conditions such as anxiety (Miller et al., 1995; Hoge et al., 2013), psoriasis (Kabat-Zinn et al., 1998), brain and immune function (Davidson et al., 2003), major depression (Chisea & Serretti, 2011), hypertension (Hughes, et al. 2013), and asthma (Pbert et al., 2012).

Mindfulness-based practices have also been incorporated as integral components of other evidence-based therapies. Perhaps most notable is the inclusion of mindfulness as one of the four modules (Mindfulness, Interpersonal Effectiveness, Distress Tolerance, and Emotion Regulation) of Dialectical Behavior Therapy (DBT) (Linehan, 1993). Although DBT was initially developed to treat borderline personality disorder, it has since been broadly and successfully applied in the treatment of additional disorders including anxiety, depression, and other mood disorders (Linehan et al., 2015; Mochrie et al., 2018). Mindfulness practices have also gained credibility in the business world, where prominent companies like General Mills, Target, Google, and Aetna have developed mindfulness programs for their employees to help lower stress, increase focus, and alleviate depression (Gelles, 2016). In the world of sports, professional basketball stars including Michael Jordan, the late Kobe Bryant, Andrew Bynum, and Lamar Odom; Olympic athletes; and professionals from numerous other sports have relied on mindfulness as a strategy to optimize their performance (Mumford, 2016). In summary, mindfulness-based practices have become well-established in the psychotherapy field and

a variety of other professional contexts. Drawing from these foundations in other settings, it seems reasonable to hypothesize that mindfulness practices may also have the potential to benefit students and teachers.

Teacher Burnout and Stress

Teachers enter their profession for a variety of reasons, most of which center on the desire to have a positive impact on the lives of children and/or adolescents. Some hold the perspective that the work of educators has become clouded by the strong emphasis on test scores and the stagnant availability of resources alongside an ever-increasing list of initiatives staff are responsible for (Vollmer, 2010). These factors, coupled with other challenges such as student poverty, student mental health challenges, and concerns about school violence, can make teachers' responsibilities extremely demanding. These stressors weigh too heavily for some educators, causing them to leave education and seek employment in other fields.

Of the teachers who left the profession in Academic Year 2012-13, 51% reported that the manageability of their workload was better in their new line of work, and 53% reported that their general work conditions were better in their current positions than in their past teaching positions (U.S. Department of Education, 2014). In a survey of 158 high school AP statistics teachers, one-third indicated they had considered leaving education in the past year, and 46% had considered leaving within the past five years (McCarthy et al., 2010). This group of teachers was specifically sought out to participate in the study due to their perceived dedication to the field (based on their participation in a summer training program and their overall higher-than-average level of training) (McCarthy et al., 2010). McCarthy and colleagues' findings suggest that even education

professionals who seem highly invested in their work, may leave or have thoughts of leaving due to the high stress entailed in their work. Of the 2% of teachers surveyed who indicated intentions to leave the teaching field altogether, the most frequently endorsed reason for this decision was dissatisfaction with working conditions, which ranked above factors such as salary, benefits, job security, and retirement (McCarthy et al., 2010). Many educators who remain in the profession report that their overall happiness with their job is compromised by some of the same factors as for those who leave the profession.

According to the MetLife Survey of the American Teacher (Markow et al., 2013), teacher job satisfaction reached a near all-time low in 2013, with only 39% of teachers reporting being very satisfied with their jobs. This finding represented a significant decline compared to responses gathered between 1995 and 2009, when the percentage of job-satisfied educators had consistently remained much higher (52 – 62%). Fifty-one percent of teachers surveyed for the 2013 study also reported experiencing great stress almost every day or several days of the week (Markow et al., 2013). It seems likely that this increase in stress experienced by teachers may also permeate the classroom environment, potentially resulting in an adverse impact on their students.

A frequent method for quantifying stress in research is to measure the levels of cortisol in saliva samples. In a study of 406 fourth to seventh grade students, researchers found that higher levels of classroom teacher burnout were associated with higher levels of student cortisol levels (Oberle & Schonert-Reichl, 2016). Although the design of the study does not support causal inference, and any potential causal relationship might be reciprocal, the association between these variables certainly warrants further exploration.

Teachers play a vital role in facilitating student success not only in academics, but also in developing social-emotional competence. A large proportion of a student's waking life is spent in school, so teachers need effective tools to help them manage the stress of these responsibilities. In turn, if teachers experience more success in managing their own stress, these improvements may be associated indirectly with decreased stress for students.

Impact of Mindfulness-Based Interventions for Teachers

As mentioned above, the value of mindfulness-based practices has been recognized in the business, sports, medical, and mental health arenas, and the potential benefits of implementing mindfulness practices in the educational setting are currently garnering broad interest. One potentially beneficial application may be to use mindfulness-based strategies to combat stress and burnout among teachers. Many schools are implementing mindfulness practices, which are typically presented as interventions and curricula designed for use with students. Relatively less research attention has been given to the potential benefits of mindfulness practices for teachers. In recent years, this focus has begun to shift, as professionals have begun to recognize the deep need for stress management strategies for teachers.

Flook and colleagues (2013) adapted John Kabat-Zinn's (1990) Mindfulness-Based Stress Reduction program for systematic use with elementary school teachers. The researchers provided 10 teachers with a mindfulness intervention that entailed eight weeks of 2.5-hour, weekly sessions and one, seven-hour day of mindfulness practice. Results for the teachers in the intervention group reflected increases in mindfulness and self-compassion, reductions in psychological symptoms and burnout, increases in

effective teaching behavior as rated by independent observers (measured in terms of providing classroom organization and emotional and instructional support), and reductions in attentional bias as compared to the wait-list control group (Flook et al., 2013). A major strength of this study was that the results were based, in part, on behavioral ratings made by independent observers, thereby providing rich information in addition to the more commonly used self-report-only method of data collection in similar studies.

Reiser, Murphy, and McCarthy (2016) incorporated elements of Kabat-Zinn's (1990) Mindfulness-Based Stress Reduction, but their intervention was designed as a psychoeducational support group for teachers that included mindfulness-based elements in combination with education about stress. The researchers used the Five-Facet Mindfulness Questionnaire (Baer et al., 2006) to measure participants' mindfulness before and after the intervention. They also asked the teachers to rate their job satisfaction at pre- and post-test. The intervention consisted of six, weekly one-hour sessions. Relative to those in the comparison group (consisting of teachers who either did not participate at all, or who attended three or less sessions, *n = 8)*, the seven teachers in the intervention group displayed positive trends in their mean ratings of job satisfaction. The teachers in the intervention group also showed increased scores on the Observe subscale of the Five-Facet Mindfulness Questionnaire that were not seen in the comparison group, indicating that participation in the intervention was associated with increases in awareness of both internal sensations and external stimuli (Reiser et al., 2016).

Additional findings suggest that there may be observable positive changes in the classroom when teachers alone participate in mindfulness-based interventions (i.e., separately from students). Cultivating Awareness and Resilience in Education (CARE for Teachers) is a 30-hour intervention delivered over five in-person training days that provides instruction in emotion regulation skills, mindful awareness and stress reduction practices, and caring and listening practices. The purposes of CARE for Teachers are to promote improved emotion regulation, teaching efficacy and mindfulness; and to reduce teachers' psychological and physical distress (Jennings et al., 2017).

The researchers trained independent raters in the use of the Classroom Assessment Scoring System (CLASS) (Pianta et al., 2008) to observe and measure the quality of classroom interaction over the course of one school year. The results showed that participation in the CARE program was associated with positive outcomes in terms of the emotional support the teachers provided for their students, teacher sensitivity, and positive classroom climate. In contrast, observer ratings of the teachers that had been assigned to the control group indicated a decline in the emotional support provided to students. Results from the same study indicated that participation in the CARE program was also associated with increases in classroom organization and productivity for the classrooms of teachers in the intervention group. No such increases were evident in the control group (Jennings et al., 2017). The improvements observed in teacher/student interactions for the participants in the intervention group suggest the potential for students to receive indirect benefits if their teachers participate in mindfulness-based interventions.

Statement of Problem

The purpose of this study was to evaluate the effects of a six-session book study on elementary school educators' personal mindfulness practices and their perceptions of the value of developing mindfulness skills. The technique of mindfulness is operationally defined as "paying attention in a particular way, in the present moment, on purpose, nonjudgmentally" (Kabat-Zinn, 1994, p. 4). Mindfulness-based practices have increasingly been implemented in schools over the past few years and their use continues to grow. Research has shown that mindfulness interventions with students may provide positive results in areas including self-regulation, prosocial behaviors, and executive functioning (Schonert et al., 2015). While the scientific literature regarding the effectiveness of mindfulness interventions for students is growing, little research attention has been devoted to exploring educators' mindfulness experiences and their perceptions of mindfulness prior to implementing mindfulness practices in their classrooms. Gaining knowledge of teachers' perceptions of mindfulness interventions may provide valuable implications for successful classroom implementation. This study adds to the literature by providing information about a method that may potentially be utilized to increase educators' mindfulness and enhance their perceptions of the appropriateness and value of using brief mindfulness strategies in the classroom, before asking them to implement a mindfulness curriculum with students.

The present study measured educators' perceptions of their own mindfulness characteristics and their perceptions of the appropriateness of using mindfulness techniques with students in the classroom, both before and after participation in a six-session book study on mindfulness. The aim of this research was to explore whether the

educators' participation in the book study was associated with changes in their personal mindfulness characteristics, and their perceptions of the appropriateness of mindfulness interventions for classroom use.

The first research hypothesis was that educators' self-perceived mindfulness characteristics would increase after participation in a study of the book titled, *Real Happiness* by Sharon Salzberg (2014). The second research hypothesis was that the educators would assign more positive ratings to the appropriateness of implementing mindfulness interventions in the classroom after participating in the book study. These hypotheses were tested by comparing teachers' pretest and posttest scores on a composite measure comprised primarily of the items from the Five Facet Mindfulness Questionnaire (Baer et al., 2006), the Toronto Mindfulness Scale (Lau et al., 2006)*,* the Teacher Mindfulness in the Classroom Scale (Rickert, 2016), the Behavior Intervention Rating Scale (Elliott & Treuting, 1991), and the Marlowe-Crowne Short-Form Social Desirability Scale (Strahan & Gerbasi, 1972)*.* (See Appendix B) The pretest survey was administered before the start of the book study on November 3rd, 2016 and the posttest survey was sent out to participants on January 26th, 2017, the week after the conclusion of the book study.

II. Methods

Participants

The school psychology practicum supervisor sent an email to all staff members at three elementary schools in a Midwestern school district, inviting them to participate in a discussion of the book titled, *Real Happiness* (Salzberg, 2014). Twenty-six individuals responded, expressing interest in the book study. These 26 individuals initially comprised

the convenience sample designated as the intervention group. The individuals invited to participate in the comparison group were a stratified random sample from the remaining staff members (of the same three schools) that had not indicated interest in the book study. The selection was stratified to match the anticipated intervention group regarding the proportion of teachers and specialist/support staff members. The final sample size was much smaller than anticipated because (a) only a few of the individuals who initially expressed interest, actually participated in the book discussion group; (b) there was some further attrition between pretest and posttest; and (c) none of those invited to participate in the comparison group responded.

When data collection was initiated, the intervention group was comprised of the eight individuals (two teachers and six specialist or support staff members) who completed the pretest. Membership in the intervention group did not remain consistent and, because responses were anonymous, it was not possible to track the responses of specific individuals from pretest to posttest. Seven individuals submitted responses to the posttest (three teachers and four specialist or support staff members). All participants who responded to the posttest reportedly participated in at least four of the six sessions of the book study. The mean number of sessions attended was 5.14 out of six. Due to a methodological limitation that was identified retrospectively, it was not possible to establish with certainty that the seven posttest responders were a subset of the same participants that completed the pretest.

Unfortunately, no responses were received on either the pretest or the posttest from any of the individuals invited to participate in the comparison group. Due to the lack of any response from the intended comparison group, all references to the participants of

this study will from this point forward refer only to those individuals who participated in the book discussion sessions.

Materials and Measures

Participants completed pretest and posttest rating scales (electronically, via Qualtrics) related to perceptions of their own mindfulness experiences, and their degree of acceptance of mindfulness interventions in the school setting. In addition, they completed a measure of social desirability at pretest and again at posttest. Two separate mindfulness scales were employed with the aim of capturing two rather different dimensions of the mindfulness construct.

Mindfulness can be interpreted and measured in a variety of ways. The decision to use two separate scales assessing mindfulness was related to this difference of opinion as reflected in the mindfulness literature. Mindfulness can be measured as either a state, relating to an attitude in a particular moment, or a trait, relating to a person's stable tendency to be mindful (Andrei et al., 2016). The Five Facet Mindfulness Questionnaire (FFMQ) relates more to a representation of the trait of mindfulness, or dispositional mindfulness. The Toronto Mindfulness Scale (TMS) is intended to assess one's state of mindfulness. Another factor taken into consideration when choosing to employ two measures to assess mindfulness for this study, was how the construct was represented by the subscales of each measure. The FFMQ consists of five subscales and is considered the broader of the two measures, while the TMS consists of two subscales, each representing unique aspects of the construct (Andrei et al., 2016). These specific subscales will be discussed further in the following section.

Five Facet Mindfulness Questionnaire (FFMQ)

The Five Facet Mindfulness Questionnaire (FFMQ) is a 39-item self-report questionnaire that attempts to operationalize the construct of mindfulness (Baer et al., 2006). Responses are recorded on a 5-point, Likert-type scale, where *1 = "never or very rarely true," 3 = "sometimes true,"* and *5 = "very often or always true."* The 19 reverse-scored items were re-coded manually. These reverse-scored items are denoted by (R) in the corresponding appendix. The overall score for the FFMQ was obtained by computing the sum of all item ratings (after reverse-scored items had been re-coded), with low scores indicating a relatively lower, and high scores indicating a relatively higher, level of mindfulness.

Construct validity for the FFMQ is demonstrated by significant ($p < .01$) and positive correlations ($r = .14$ to .35) with four of the facets (Observing, Describing, Nonjudging, and Nonreactivity) and meditation experience (Baer et al., 2008). These conclusions were the result of comparing a meditating sample (recruited from an international conference on mindfulness where individuals reported a regular meditation practice), to a nonmeditating sample.

According to Baer and colleagues, the internal consistency reliability of the five subscales of the FFMQ (Nonreactivity, Observing, Acting with Awareness, Nonjudging, and Describing) range from alpha coefficients of .75 to .91 (Baer et al., 2006). Convergent and discriminant validity for the FFMQ are evidenced by significant correlations ($p < .001$) between the FFMQ mindfulness facets and related variables from other validated scales, as shown in Table 1:

Table 1

Correlations Between FFMQ Subscales and Other Measures

r	FFMQ Subscale	Other Measure Subscale	Other Measure
.42***	Observing	Openness to Experience	NEO-FFI
-.68***	Describing	Alexithymia	TAS-20
.60***	Describing	Emotional Intelligence	TMMS
-.62***	Acting with Awareness	Dissociation	SODAS
-.61***	Acting with Awareness	Absent-mindedness	CFQ
-.56***	Nonjudging	Thought suppression	WBSI
-.55***	Nonjudging	Neuroticism	NEO-FFI
.53***	Nonreactivity	Self-Compassion	SCS

Note: NEO-FFI = Neo-Five Factor Inventory; TAS-20 = Toronto Alexithymia Scale; TMMS = Trait Meta-Mood Scale; SODAS = Scale of Dissociative Activities; CFQ = Cognitive Failures Questionnaire; WBSI = White Bear Suppression Inventory; SCS = Self-Compassion Scale. Adapted from Baer, R. A., Smith, G. T., Hopkins, J., Krietmeyer, J., & Toney (2006). Using self-report assessment methods to explore facets of mindfulness. *Assessment, 13*(1), p. 41. Copyright 2006 by Sage Publications. Adapted with permission.
***$p < .001$

Baer and colleagues (2006) demonstrated the incremental validity of the FFMQ via the relationships between selected FFMQ variables and scores on the General Severity Index of the Brief Symptom Inventory (BSI) (Derogatis, 1992). Only the General Severity Index from the BSI was used by Baer and colleagues for this anaysis; the additional nine psychological symptom scale results were omitted. The General Severity Index is an overall measure of symptom severity. Mindfulness is known to decrease the severity of the symptoms measured, so inverse relationships were expected (i.e., as mindfulness increases, symptoms are expected to decrease). Table 2 shows these relationships, as identified by Baer et al. (2006) using regression analyses:

Table 2

Five Facet Mindfulness Questionnaire and Brief Symptom Inventory Relationships

FFMQ Subscale	β with General Severity Index of the BSI
Acting with Awareness	-.29, *p* = .00
Nonjudging	-.36, *p* = .00
Nonreactivity	-.11, *p* = .01

Note: Adapted from Baer, R. A., Smith, G. T., Hopkins, J., Krietmeyer, J., & Toney (2006). Using self-report assessment methods to explore facets of mindfulness. *Assessment, 13*(1), p. 41. Copyright 2006 by Sage Publications. Adapted with permission.

These results suggest that the identified subscales of the FFMQ are significant predictors of overall symptom severity as measured by the General Severity Index of the BSI.

Toronto Mindfulness Scale (TMS)

The Toronto Mindfulness Scale (TMS) is a 13-item scale used "to investigate the mediating role of mindful awareness in mindfluness-based interventions and observed patient outcomes" (Lau et al., 2006, p. 1462). Responses are recorded on a 5-point, Likert-type scale, where *1 = "not at all," 3 = "moderately,"* and *5 = "very much."* The overall score for the TMS is obtained by computing the sum of all item ratings, with low scores indicating a relatively lower, and high scores indicating a relatively higher, degree of mindfulness. The TMS is comprised of two distinct factors: Curiosity and Decentering. Curiosity refers to "an attitude of wanting to learn more about one's experiences" (Lau et al., 2006, p. 1460). "A shift in one's cognitive perspective known as Decentering is thought to lead to a change in one's relationship to negative thoughts and feelings such that one can see negative thoughts and feelings simply as passing events in the mind rather than reflections of reality" (Lau et al., 2006, p. 1461).

The original TMS items are worded in the past tense because the instrument is used primarily to measure immediate responses following a mindfulness meditation

intervention. Since the original publication of the measure, many researchers have adapted the wording to the present tense in order to measure more general and less immediate mindfulness-related experiences (M. Crothers, personal communication, August 10, 2016). Similarly, and following that precedent for the study described herein, items were worded in the present tense because the aim was to measure and compare participants' mindfulness-related experiences prior to and following participation in the book study group.

Internal consistency reliability for the two factors within the TMS (Curiosity and Decentering) were demonstrated via coefficient alpha values of .86 and .87, respectively (Lau et al., 2006). According to Lau and colleagues, convergent validity is demonstrated by significant and positive correlations between the two subscales within the TMS (Curiosity and Decentering) and related scales on other measures, as shown in Table 3:

Table 3

Correlations of Toronto Mindfulness Subscales with Other Measures/Subscales

r	TMS Subscale	Other Measures/Subscales	Other Measure
.31***	Curiosity	Absorption	TAS
.22**	Decentering	Absorption	TAS
.16*	Curiosity	Awareness of Surroundings	SSAS
.21**	Decentering	Awareness of Surroundings	SSAS
.41***	Curiosity	Internal State Awareness	SSAS
.31***	Curiosity	Self-Consciousness	SSAS
.23**	Curiosity	Reflective Self-Awareness	RRQ
.42***	Decentering	Reflective Self-Awareness	RRQ
-.16*	Decentering	Cognitive Failures	CFQ
.23***	Decentering	Openness to Experience	NEO-FFI
.22**	Curiosity	Psychological Mindedness	PMS
.19*	Decentering	Psychological Mindedness	PMS

Note: TAS = Tellegen Absorption Scale; SSAS = Situational Self-Awareness Scale; RRQ = Rumination-Reflection Questionnaire; PMS = Psychological Mindedness Scale; CFQ = Cognitive Failures Questionnaire; NEO-FFI = NEO-Five Factor Inventory. Adapted from Lau, M. A., Bishop, S. R., Segal, Z. V., Buis, T., Anderson, N. D., Carlson, L., Shapiro, S., & Carmody, J. (2006). The Toronto Mindfulness Scale: Development and Validation.

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

Criterion validity is evidenced by significantly higher scores on the TMS Curiosity subscale for individuals with more than one year of mindfulness experience in comparison to those with less than one year of experience (*p* = .027) (Lau et al., 2006). Similarly, individuals with greater than one year of mindfulness or other meditation experience also scored significanlty higher on the TMS Decentering subscale (*p* < .001) than individuals with less than one year of experience (Lau et al., 2006).

Lau and colleagues (2006) conducted a study in which they invited participants (*n* = 99) with a variety of psychological and other health conditions to participate in an eight-week mindfulness-based stress reduction program. The researchers reported that the incremental validity of the TMS was demonstrated via the participants' responses at the end of the stress reduction program. Specifically, participants showed significantly increased mindfulness (as measured using the TMS) (Curiosity *p* < .01 and Decentering *p* < .001); significantly decreased symptom severity (as measured using the Brief Symptom Inventory) (*p* < .001); and significantly decreased stress (as measured using the Perceived Stress Scale) (*p* < .001) (Lau et al., 2006).

Teacher Mindfulness in the Classroom Scale (TMCS)

The Teacher Mindfulness in the Classroom Scale (TMCS) (Rickert, 2016) is a 31-item self-report scale that measures teachers' perceptions of their own mindful behaviors that occur spontaneously in the classroom. The six subscales are broken down into the two categories of Mindfulness (Calm, Clear, Kind) and Mindlessness (Reactive, Distracted, Critical). Participants indicate their responses on a 5-point, Likert-type scale,

where *1 = "almost never," 3 = "about half the time," and 5 = "almost always."* Per the instructions for the scale, the 16 reverse-scored items were re-coded manually (for the research presented herein). Reverse scored items are denoted by (R) on the measure in the corresopnding appendix. The overall score for the measure was computed by summing all item ratings (after reverse-scored items had been re-coded), with low scores indicating a relatively lower, and high scores indicating a relatively higher, degree of mindfulness in the classroom. Only those individuals who identified themselves as teachers or special education teachers completed this scale, as the items were not relevant to specialist or support staff members. The Qualtrics survey for the present study was designed such that individuals who identified as specialiast/support staff automatically bypassed this portion of the survey, using Qualtrics skip-logic technology.

Internal consistency reliabilities among the subscales of the TMCS are as follows: Calm α = .83, Clear α = .77, and Kind α = .73 (Rickert, 2016). Convergent validity is evidenced by significant positive correlations among the teacher subscales and teacher dispositional mindfulness, as measured by the Five Factor Mindfulness Questionnaire (Baer et al., 2006) (*r* = .34 to .47, *p* < .01). Divergent validity is evidenced by significant negative correlations between the TMCS subscales (Calm and Clear) and the Teacher Job Stress scale ranging from *r* = -.26 to -.30 (*p* < .05) (Rickert, 2016). Because the previous correlations were computed primarily on the basis of self-report measures, and because of the possibility of method bias related to socially desirable responding, the researchers also conducted a regression analysis to determine the predictive relationships between teacher dispositional mindfulness and job stress, and calmness, clarity, and kindness (Rickert, 2016). Results from this regression analysis identified a significant predictive

relationship between all three subscales of the TMCS and Teacher Dispositional

Mindfulness: Calm $\beta = .40$ ($p < .001$), Clear $\beta = .43$ ($p < .001$), and Kind $\beta = .31$ ($p < .05$)

(Rickert, 2016). No significant predictive relationship was noted between the TMCS

subscales and the Teacher Job Stress scale.

Behavior Intervention Rating Scale (BIRS)

Participants' perceptions of the appropriateness of a hypothetical mindfulness

intervention for implementation in a classroom setting were measured using the Behavior

Intervention Rating Scale (BIRS) (Elliott & Treuting, 1991). For this 24-item scale,

participants first read a scenario describing a hypothetical mindfulness intervention being

used in a classroom, then indicate their responses using a 5-point scale, where *1 =*

"strongly disagree," 3 = "slighty disagree," and *5 = "agree."* (Note: The Limitations

section of this report will describe an error made in the present study regarding the range

of the rating scale completed by the participants.) The overall BIRS score is computed by

summing all ratings, with a low score indicating a low level of acceptance and a high

score indicating a high level of acceptance of the hypothetical mindfulness intervention

as presented via a written scenario (to be described below). The internal consistency

reliability of the BIRS yields a coefficient alpha of .97 (Elliott & Treuting, 1991).

Concurrent validity was evidenced through comparison with another treatment

acceptability scale, the Semantic Differential (Osgood et al., 1957). This comparison

yielded relatively high correlation values (ranging from .52 to .78) between subscales

(Elliott & Treuting, 1991).

To complete the BIRS, participants first read a scenario describing a student with

a presenting problem and a brief description of a mindfulness-based intervention. The

student in the scenario is described as having difficulty regulating their emotions, becoming upset easily, and often engaging in disruptive behaviors such as crying, yelling, and work refusal. The scenario also describes a mindfulness intervention that includes teaching the student to increase their awareness of their thoughts and emotions, as well as having the student directly participate in a mindfulness exercise, such as awareness of the breath. After reading the scenario participants completed the BIRS, indicating the degree to which they found the intervention acceptable for implementation, and the degree to which they thought the intervention would be effective. (Note: For the development of the BIRS, teachers read common classroom problem behavior descriptions and rated their acceptance of interventions including token reinforcement, a response cost, and a time-out procedure. For the present study, the case example was created by the researcher.)

Marlowe-Crowne Short-Form Social Desirability Scale

The Marlowe-Crowne Short-Form Social Desirability Scale (Strahan & Gerbasi, 1972) is an abbreviated 10-item measure derived from the original 33-item Marlowe-Crowne Social Desirability Scale (Marlowe & Crowne, 1960). The scale measures the extent to which individuals' responses to self-report measures may be influenced by a desire to portray themselves in a positive, socially desirable light (Reynolds, 1982). Five of the items represent desirable (but common) behaviors, and the other five items represent undesirable (but common) behaviors (Thompson & Phua, 2005). Participants indicate their agreement or disagreement with each statement using a *True/False* format. The sum of all item scores can potentially range from 0-10, with higher scores indicating a higher level of social desirability bias. The KR(20) reliability coefficients for the Marlowe Crowne Short-Form Social Desirability Scale range from .59 to .70, with a

mean of .64 (Strahan & Gerbasi, 1960). This abbreviated form of the scale is suggested for use when participants' time is a concern and decreased reliability is allowable (Strahan & Gerbasi, 1960). Concurrent validity is evidenced by the correlation between the Marlowe-Crowne Short Form and the Marlowe-Crowne Standard Form, $r = .85$ (Reynolds, 1982). The abbreviated form of this scale was selected to keep the overall survey as brief as possible, thereby minimizing demands on participants' time.

Mindfulness Book that Served as the Basis for the Book Study Intervention

The text used for the book study intervention in the present research was *Real Happiness* by Sharon Salzberg (2014). The book focuses on six mindfulness subject areas, each of which was the topic for one of the six study sessions: (1) introduction to mindfulness; (2) focus on the breath; (3) focus on the body; (4) emotions, thoughts, and feelings; (5) lovingkindness; and (6) maintaining mindfulness practice. Sections of the book describing various mindfulness practices provide background knowledge, tips for engaging with the practice of mindfulness, and a compact disc that provides audio recorded, guided meditations for participants to use as they practice individually between sessions.

Procedures

The school psychology practicum supervisor sent an email inviting faculty and staff members to participate in the book group. Individuals who participated in the book group were asked to complete an online pretest survey during the first two weeks of the book group. The pretest opened on the date of the first session and closed on the date of the second book group session. The online posttest survey was delivered within the week after the final session of the three-month book study.

To maintain participants' anonymity, the only demographic data they were asked to provide was their position title (teacher or specialist/support staff). As a further measure to protect anonymity, at the time of the pretest participants were asked to create for themselves a unique identification number, known only to them. The initial intent of the researcher was for participants to remember this number and use it again at posttest. Unfortunately, five out of the seven participants who completed the posttest created an entirely different identification number than they used on the pretest, making it impossible to draw comparisons between specific individuals' pretest and posttest scores. Consequently, analyses were conducted based on group means. A further concern is that this design flaw renders it impossible to know with certainty that the seven individuals who completed the posttest were a subset of the same eight individuals who completed the pretest.

At pretest, participants were asked to report on whether they had any previous experience with mindfulness-related practices (by responding either yes or no), and if they responded in the affirmative, they were invited to describe those prior experiences. Participants completed the pretest electronically during the first two weeks of the book study. The book study entailed six, one-hour sessions across the course of three months and was facilitated by the school psychology practicum supervisor at one of the area elementary schools. Each session covered a specific section of content from the book *Real Happiness* (Salzberg, 2011). Each book study session began with a mindfulness practice exercise, after which participants discussed the chapter they had read, and asked questions of each other. Each session ended with a mindfulness practice exercise. In the

week following the conclusion of the final session of the book study, participants

received an invitation to complete the posttest.

<div align="center">III. Results</div>

Statistical Analyses

Self-Perceived Teacher Mindfulness in the Classroom

An independent-samples *t*-test (two-tailed) was conducted to assess whether the

mean scores on the Teacher Mindfulness in the Classroom Scale (TMCS) differed pre- (n

= 2) and post- (n = 3) book study. (Readers are reminded that only a subset of the

participants were classroom teachers.) The Levene test indicated no violation of the

homogeneity of variance assumption, $F(1, 3) = 4.13$, $p = .14$. Therefore, the *t*-test for

pooled variances was used. Figure 1 is a bar graph with error bars denoting the 95%

confidence interval. The figure shows that the mean total posttest score on the TMCS (*M*

= 132.00; *SD* = 15.72) did not differ significantly from the mean total pretest score (*M* =

111.50; *SD* = 31.82), with $t(3) = -1.00$, $p = 0.39$. The Cohen's *d* value of -0.92 indicates a

large effect size. However, the means ranged from -85.60 to 44.60, with $r^2 = 0.25$. This

large range of error confirms the acknowledged fact that the sample size was too small to

support any definitive conclusions about changes in teachers' self-perceived mindfulness

in the classroom, associated with participation in the book study. The finding of a large

effect size with no statistical significance means that, although there was a large

difference between the teachers' pretest and posttest scores, this could easily be due to

chance and not due to participation in the book study intervention. The aforementioned

methodological flaw that resulted in lack of certainty as to whether the same individuals

completed the posttest as completed the pretest introduces further interpretive

uncertainty.

Figure 1

Pre- and Posttest Mean Total Scores on the Teacher Mindfulness in the Classroom Scale
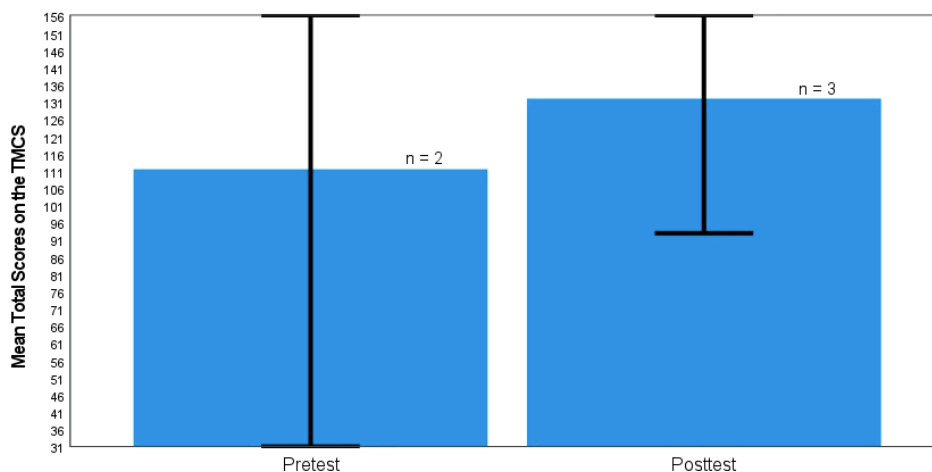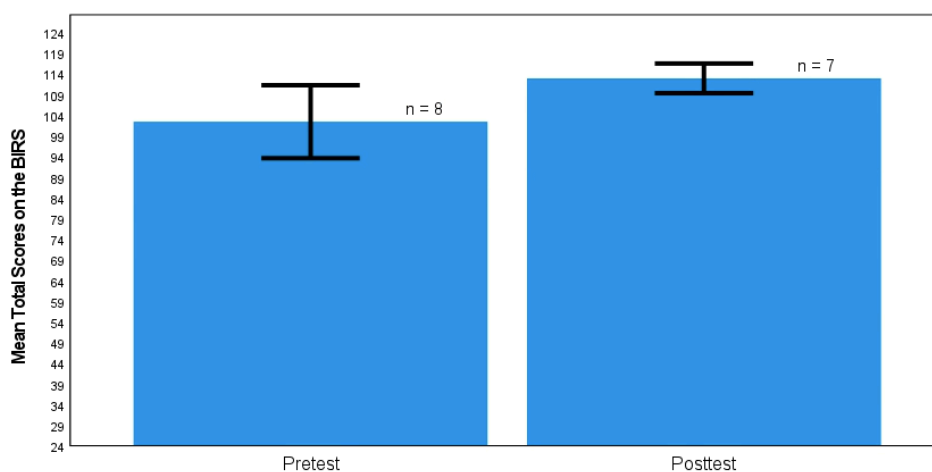

Behavior Intervention Rating Scale

An independent-samples *t*-test (two-tailed) was used to calculate the difference

between the mean total scores on the Behavior Intervention Rating Scale (BIRS) before

(n = 8) and after (n = 7) participation in the book study. Because the Levene test

indicated violation of the homogeneity of variance assumption, $F(1, 13) = 6.19$, $p = .03$,

the *t*-test for unequal variances was used. Figure 2 is a bar graph with error bars denoting

the 95% confidence interval. The figure shows that the mean total score on the BIRS

posttest ($M = 112.86$; $SD = 3.89$) differed to a statistically significant degree from the

pretest mean total score for this scale ($M = 102.38$; $SD = 10.57$) with $t(9.08) = -2.61$, $p =$

0.03. The Cohen's *d* value of -1.28 indicates a relatively large effect size. Figure 2 is a

bar graph with error bars denoting the 95% confidence interval for the difference between

the sample means ranged from -19.55 to -1.41, with $r^2 = 0.43$. Upon initial consideration,

this finding appears to indicate that the participants' judgments of the appropriateness of

the hypothetical mindfulness intervention for use in the classroom changed across the course of the book study group, such that they found the intervention more appropriate after participating in the book study group than before. However, caution must be exercised when interpreting the findings due to (1) the small sample size, (2) the fact that not all respondents were teachers, and (3) a methodological flaw that made it impossible to link the responses of specific participants at pretest to the responses of the same individuals at posttest.

Figure 2

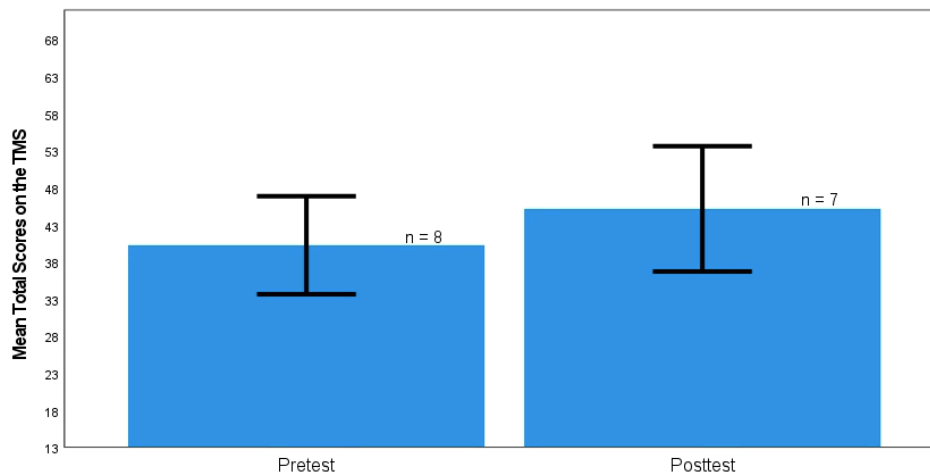*Pre- and Posttest Mean Total Scores on the Behavior Intervention Rating Scale*

Toronto Mindfulness Scale

An independent-samples *t*-test (two-tailed) was used to calculate the difference in mean total scores on the Toronto Mindfulness Scale (TMS) before (n = 8) and after (n = 7) the book study. The Levene test indicated no violation of the homogeneity of variance assumption, $F(1, 13) = 0.13$, $p = 0.72$, so the pooled variances version of the *t*-test was used. Figure 3 is a bar graph showing participants' mean total scores on the TMS before and after the book study. The error bars on Figure 3 denote the 95% confidence interval.

The mean total posttest score ($M = 45.14$; $SD = 9.14$) did not differ to a statistically significant degree from the mean total pretest score ($M = 40.25$; $SD = 7.91$) with $t(13) = -1.11$, $p = 0.29$. The Cohen's d value of -0.58 indicates a medium effect size. Despite this moderate effect size, these findings cannot be interpreted due to the lack of significance (which is likely related to the small sample size). The 95% confidence interval for the difference between the sample means ranged from -14.39 to 4.61, with $r^2 = 0.09$.

Figure 3

*Pre- and Posttest Mean Total Scores for the Toronto Mindfulness Scale*

Five-Facet Mindfulness Questionnaire

An independent-samples t-test (two-tailed) was used to calculate the difference between participants' mean total scores on the Five Facet Mindfulness Questionnaire (FFMQ) before (n = 8) and after (n = 7) the book study. The Levene test indicated no violation of the homogeneity of variance assumption, $F(1, 13) = 0.08$, $p = 0.79$, so the pooled variances version of the t-test was used. Figure 4 is a bar graph showing participants' mean total scores on the FFMQ at pretest and posttest. The mean total FFMQ score at posttest ($M = 137.14$; $SD = 23.51$) differed to a statistically significant

degree from the mean total pretest score ($M = 110.63$; $SD = 22.96$) with $t(13) = -2.21$, $p = 0.05$. The Cohen's d value of -1.14 indicates a large effect size. The 95% confidence interval for the difference between the sample means ranged from -52.48 to -0.56 and $r^2 = 0.27$. These findings suggest that participants' levels of mindfulness (as measured by the FFMQ) increased after their participation in the book study group. However, despite this seemingly notable finding, similar cautions must be considered when interpreting this finding as were discussed when interpreting the findings from the BIRS rating scale. Specifically, no conclusions can be drawn based on these findings due to (1) the small sample size, (2) the fact that not all respondents were teachers, and (3) a methodological flaw that made it impossible to link the responses of specific participants at pretest to the responses of the same individuals at posttest.

Figure 4

Pre- and Posttest Mean Total Scores for the Five-Facet Mindfulness Questionnaire
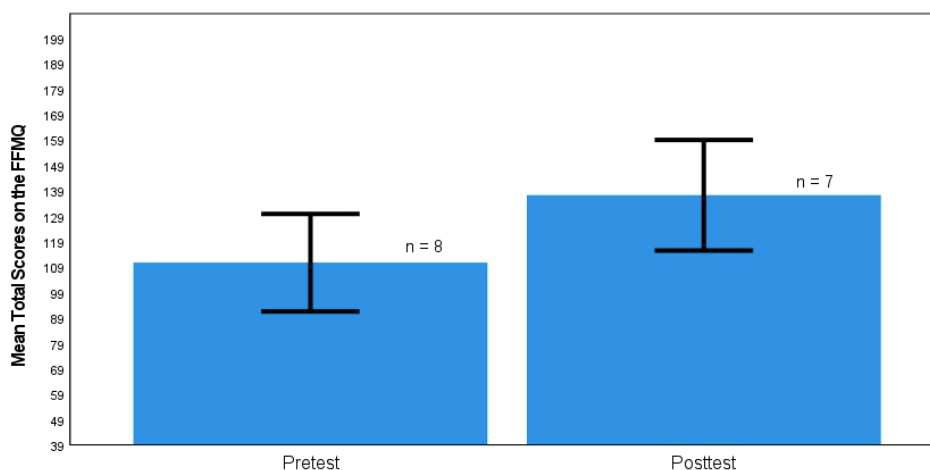
Summarized Comparison of Participant Scores on All Scales at Pretest and Posttest

It is useful to provide summary comparative data for all four measures at pretest and at posttest. To this end, Table 4 below shows these comparative data in tabular form.

Table 4

Means and Standard Deviations for All Scales at Pretest and Posttest

Measure	Pretest M	Posttest M	Pretest SD	Posttest SD	*t*-test	*d*	*p*
TMCS	111.50	132.00	31.82	15.72	-1.00	-0.92	0.39
TMS	40.25	45.14	7.91	9.14	-1.11	-0.58	0.29
FFMQ	110.63	137.14	22.96	23.51	-2.21	-1.14	0.05*
BIRS	102.38	112.86	10.57	3.89	-2.61	-1.28	0.03*

Note: TMCS = Teacher Mindfulness in the Classroom Scale; TMS = Toronto Mindfulness Scale; FFMQ = Five Facet Mindfulness Questionnaire; BIRS = Behavior Intervention Rating Scale.
*$p < .05$

Social Desirability

Social desirability was measured using the Marlowe-Crowne Short-Form Social Desirability Scale (Strahan & Gerbasi, 1972). The scale included 10 true/false items, each coded by the researcher as 1 or 0 based on the codebook for the scale. Scores range from 0-10, with lower scores indicating less influence of social desirability on responses, and higher scores indicating greater influence of social desirability on responses. High social desirability scores suggest that participants may have been motivated to respond in a way they thought others would approve of, rather than responding in a fully candid manner. The mean social desirability scores on the pretest and posttest (3.88 and 5.29, respectively) suggest that social desirability bias did not interfere to a large degree with participant responding.

Observations

Prior to participating in the book study, participants were asked (via an open comment box) to describe their previous exposure to mindfulness-based practices. Seven of the eight respondents indicated they had had some exposure to mindfulness practice prior to participating in the book study. Of these seven, two respondents had participated

solely in a one-hour professional development session on mindfulness provided by their school prior to the start of the school year in which the book study was conducted. Other respondents indicated varied experiences including reading books on the topic of mindfulness, working closely with or taking a course from another person who was trained in mindfulness practice, practicing yoga, meditating, having a positive mindset, taking courses on brain research, engaging in informal mindfulness practice with colleagues, using strategies to enhance their concentration, and focusing on their breathing. A review of participants' responses suggests that, while most participants had some type of exposure to mindfulness practice or related experiences before participating in the book study group, none had a regularly established, ongoing mindfulness practice prior to participation in the book study. One respondent, however, indicated practicing on a "mostly weekly basis."

On the posttest, respondents were again asked via an open comment box to describe the amount and type of mindfulness practice they engaged in independently outside of the book study sessions. All seven respondents who completed the posttest indicated that they practiced the mindfulness skills outside of the book study sessions, and three reported incorporating regular practice sessions into their daily routine. Of these three, one participant reported meditating for 20 minutes 3-4 times per week; the second reported practicing mindful breathing and focusing on their breath daily for 5-10 minutes in addition to practicing yoga 3-5 times per week; and the third reported practicing mindful breathing for five minutes at least four times per week. Other respondents provided less detailed descriptions of their post-participation engagement in mindfulness practices, but indicated that they practiced walking meditation, mindful

breathing, body scans, and/or being mindful while talking to people, driving, or sitting in lectures. All of these were forms of mindfulness presented in the Salzberg (2014) book and discussed in the book study sessions.

IV. Discussion

A comparison of pretest and posttest scores on the Behavior Intervention Rating Scale indicated a statistically significant increase in educators' ratings of appropriateness of using a mindfulness-based intervention with a student. Pre- and posttest measures of self-perceived mindfulness on the Five Facet Mindfulness Questionnaire also reflected statistically significant changes. Despite the additional finding of a large effect size for the results on the BIRS and FFMQ, these findings do not support meaningful interpretation because the small sample size results in an unacceptable level of imprecision. Additional limitations will be discussed in more detail in the following section. Scores on the Teacher Mindfulness in the Classroom Scale and Toronto Mindfulness Scale did not change significantly from pretest to posttest. A strength of this study is that it was conducted in a real-world school setting rather than a laboratory setting; therefore, the results are likely reflective of the real-world experiences of the small sample of educators in this study.

A review of the qualitative self-report data from pre- and posttest results suggests that individuals who participated in the study may have incorporated mindfulness practices into their lives on a more regular basis than they did prior to participating in the study. Pretest results indicated that despite most individuals having some degree of experience with mindfulness-based practices, only one respondent reported practicing mindfulness regularly (once weekly). By the time they completed the book study and the

posttest, three respondents reported that they had established a regular mindfulness practice. Due to uncertainty as to precisely which individuals comprised the pretest and posttest groups, it is difficult to determine whether participation in the book study influenced the apparent increase in regular mindfulness practice. It is not possible to determine whether the same group of individuals filled out the pretest and posttest, therefore, direct comparisons between the two cannot be made. However, all respondents on the posttest indicated attending a majority of the book study sessions ($M = 5.14$ of 6).

Limitations

This study shares several limitations with many other small exploratory studies in the field of psychology. Specifically, the sample size was small and, despite the fact that the study was designed to include a comparison group and the researcher sent out invitations for participants in that group, no one responded. The small sample size limits the ability to draw conclusions and impacts the overall validity and reliability of the results. Increasing the sample size in future studies will contribute to more robust findings. External validity could also be strengthened by increasing the sample size. Conducting a sample size calculation prior to carrying out a future study may help determine a sample size that would be more likely to yield results with adequate power. The reliability of the results is vulnerable to the inherent limitations of self-report data and the possible influence of social desirability factors. Although social desirability factors did not appear to exert undue influence in this study, use of the short-form version of the social desirability scale may have resulted in an underestimate of social desirability influence.

The research design did not include a mechanism for determining whether participants had read the material before attending each book study session. Further, attendance fluctuated from session to session and none of the participants attended every session. Internal validity could be improved by formally assessing participants' actual reading of the material; encouraging them to practice the skills daily between sessions and asking them to keep a record of their practice; and encouraging them to attend all sessions, if possible.

A somewhat more substantive limitation arose as the result of a researcher error in preparing the Qualtrics survey segment containing the items from the Behavior Intervention Rating Scale (BIRS). Specifically, the researcher prepared the Qualtrics scale using the anchor points that were visible in the electronic version of the original article (Elliott & Treuting, 1991), which showed only five anchor points on the scale. It was not recognized until after the data had been collected that this rating scale was imbalanced and did not seem to make conceptual sense. In subsequently reviewing the .pdf version of the BIRS, it was discovered that its authors intended the inclusion of a sixth anchor point, and that each anchor point should have corresponded to a specific descriptor, rather than showing scale anchors only at the low end, middle, and upper end. The correct desciptors should have been as follows: *1 = "strongly disagree," 2 = "disagree," 3 = "slighty disagree," 4 = "sightly agree," 5 = "agree,"* and *6 = "strongly agree."* The version of the scale used in the present study did not include the option to endorse "strongly agree."Although this error would not result in a change of *direction* in the results, participants were limited in the *degree* to which they could rate agreement accurately.

The most substantial methodological limitation of this study arose from the fact that the research design failed to provide a fail-safe mechanism for linking the pretest and posttest responses of specific individuals. This design flaw introduced two interpretive challenges. First, there was one less respondent at posttest than at pretest, and it is not possible to determine with certainty that the posttest respondents were a subset of those that completed the pretest. Second, it was not possible to compare specific individuals' pretest and posttest responses. Therefore, individual change scores could not be computed; it was feasible only to compare group means at pretest and posttest. In retrospect, it would have been preferable to assure participants only of confidentiality rather than assuring complete anonymity. This identification mechanism would have allowed researchers to assign specific ID numbers to specific participants and remind each participant at posttest of their ID number, so that change scores could have been computed. This identification mechanism would also have allowed the researcher to determine with certainty whether the posttest responders were, indeed, a subset of the pretest responders.

Finally, it is possible that this study may have failed to identify real benefits of participating in a mindfulness-based book study due to small sample size, less-than-optimal sensitivity of measures, and issues related to dose-response. For example, having a greater number of sessions, having the sessions be of longer duration, and incorporating more extensive practice opportunities within each session, might have resulted in larger pre- and post- changes.

Future research in this area may be strengthened by incorporating direct observations of teaching behavior in the classroom. This may provide more objective

information to complement the self-report measures. Adding a comparison group may result in the ability to isolate the effects of the predictor variable on the intervention group and minimize the influence of confounding variables. Offering incentives in future studies may potentially help to increase sample size, facilitate recruitment of a control group, increase regular attendance, and minimize attrition. Incorporating checks for comprehension of the material and practice of the skills between sessions may help ensure participants are engaging fully in the experimental condition.

Implications for School Psychologists

Based on the conclusions of this research and the research involved in preparing for this study, there are several implications for school psychologists. The first implication is related to the present popularity of mindfulness-based practices in schools. School psychologists engaging in continued professional development through attending conferences organized by state and national associations will often encounter sessions with topics regarding mindfulness-based practices. Other marketing materials often targeted towards school psychologists often include curriculums, books, and other resources about mindfulness-based practices. As scientist practitioners, the heavy presence of mindfulness within the field in various formats should encourage school psychologists to research and evaluate best practices when considering including incorporating these practices into their daily work, whether with students or for personal use. When bringing these practices into schools, school psychologists, teachers, and other pupil services staff should be trained and have a firm understanding of the potential benefits to both themselves and students. Fidelity of implementation of any program or practice will have a direct impact on the effectiveness of said practice.

Although mindfulness interventions have demonstrated promising results for use with children in the classroom setting, little research has been conducted to explore its potential benefits for teachers. Given the serious concerns about increasing stress and burnout, and decreasing job satisfaction among teachers, and the indirect adverse effects of teacher stress on students, interventions to support teachers in managing stress effectively are imperative. School psychologists may have opportunities to support teachers by introducing them to the benefits of engaging in personal mindfulness practices. Mindfulness interventions may have the potential to enhance teachers' job satisfaction and ability to manage stress and decrease their risk of burnout, thereby potentially enhancing outcomes for their students.

School psychologists play an integral role in launching, adapting, and sustaining school initiatives. To assure best practices, there are important considerations for school psychologists when introducing mindfulness interventions to both students and teachers. It is first important to lay the foundation for mindfulness-based interventions by providing empirical support for mindfulness as an evidence-based practice. School psychologists should consider providing teachers, administrators, and support staff members with an overview of research findings regarding the efficacy and applications of mindfulness-based practices to enhance their awareness of potential positive outcomes for students and teachers. Increasing teacher competence through a formal in-service, with ongoing trainings, will help support the roll-out of this initiative as it will give teachers the foundation for their own personal mindfulness practice.

Including mindfulness practices as a regular component of operations (e.g., incorporating a 5-minute mindfulness exercise during staff meetings) may help to build a

school culture that values and actively uses mindfulness. Additional formal training in mindfulness interventions as they relate to students, and regular collaboration among staff members are additional essential components. School psychologists should consider providing informational sessions for families and seeking family input and collaboration as another component to promote a whole child approach when adapting mindfulness-based interventions for implementation in schools. The benefits of mindfulness-based practices in schools are apparent, and their efficacy may be realized to a greater degree by providing foundational information, taking care to implement interventions with fidelity, training teachers in best practices, and developing a strategic plan to ensure that best practices are sustained across time.

V. Summary

The present study contributes to the literature by suggesting that involvement in a book study may increase educators' perceptions of appropriateness of utilizing a mindfulness-based intervention designed for students. As school psychologists are faced with competing initiatives within education, it is important to recognize what strategies and training methods are the most optimally useful in sustaining these efforts.

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Appendix A: Informed Consent

(Note: The survey was administered to participants electronically via Qualtrics. Therefore, the informed consent information was embedded as descriptive text in Qualtrics, prior to the start of the pretest.)

Dear School Staff:

We are looking to gather information about how participation in a six-session mindfulness book study may impact educators' perceptions of mindfulness practices as well as their perceptions of the feasibility of implementing mindfulness in the classroom. We will appreciate your responses, as they will help us explore these questions.

Title of Investigation: **Evaluating the effects of a six-session book study on elementary educators' mindfulness-based practices.**

Name of Principal Investigator: **Michelle Stanek** (name subsequently changed to Kellogg)

By clicking "yes" below, you indicate that you freely agree to participate in this research on a voluntary basis. The research project has been fully explained by Michelle Stanek, and you understand this explanation, including what you may be asked to do. A copy of the procedures of this investigation and a description of any risks, discomforts and benefits associated with your participation has been provided. You have been given an opportunity to ask questions, and all such questions and inquiries have been answered to your satisfaction. You understand that you are free to decline to answer any specific items or questions in this survey. You understand that all data will remain confidential with regard to your identity. You understand that, in the event of physical injury resulting from this investigation, neither financial compensation nor free medical treatment is provided for such physical injury. You certify that, to the best of your knowledge, you have no physical or mental illness or weakness that would increase your risk as you participate in this investigation. You understand that participation in this research project is voluntary and not a requirement or condition for being the recipient of benefits or services from the University of Wisconsin-Eau Claire. You understand that the approximate length of time required for participation in this research project is 20-30 minutes. You understand that if you have any questions concerning the purposes or the procedures associated with this research project, you may call or write: Michelle Stanek (608) 487-1551 stanekmr8412@uwec.edu. You understand that it will not be necessary to reveal your name in order to obtain additional information about this research project from the principal investigator. You understand that if you have any questions about the treatment of human subjects in this study, you may call or write: Dr. Michael Axelrod, Chair Institutional Review Board for Protection of Human Subjects Schofield 17 University of Wisconsin Eau Claire Eau Claire, WI 54702 Phone: (715) 836-2373. Although this person will ask your name, you understand that all inquiries will be kept in the strictest confidence. You understand that you are free to withdraw your consent and discontinue your participation at any time. Thank you very much for your participation!

Sincerely, Michelle Stanek, M.S.E. School Psychology Ed.S. Student School Psychology Ed.S. Student.

Do you give your consent to participate in this study? (Yes/No)

Appendix B: Pretest

(Note: The scales are labeled for organizational purposes only; participants did not see the names of the scales when taking the electronic survey. Participants were not alerted when response items changed between scales, but they always saw each possible response for each individual item. After establishing informed consent, but prior to beginning the pretest, participants received the following instructions:)

Please record the four-digit code that is unique to you that you created the first time you took this survey. (Ex. mother's birthdate)

Select the option that best describes your role in schools.
    Teacher (General education or special education)
    Specialist or Support Staff (ex. Counselor, Occupational Therapist, EL Teacher, Title 1 Teacher, Assistant, Lit Coach)

(Note: If respondents indicated that they were a Specialist or Support Staff, the electronic survey was set to bypass the Teacher Mindfulness in the Classroom Scale portion of this survey.)

Teacher Mindfulness in the Classroom Scale (TMCS)
(Rickert, 2016)

Responses Displayed for Each Item:
Almost never
Sometimes
About half of the time
Most of the time
Almost always

1. I can get so busy thinking about other things that I am not really listening to my students. (R)
2. I feel tender towards my students and all they are dealing with.
3. I try to be understanding and patient towards those aspects of my class I don't always like.
4. If I can't get through my whole lesson, I get frustrated. (R)
5. If I get angry or unhappy about students' behavior, I step back and try to see what's going on.
6. If I get upset in class, I get over it quickly.
7. If students do not do well in my class, they only have themselves to blame. (R)
8. If students don't listen, I get pretty irritated at them. (R)
9. Once I get angry in class, my temper tends to take over. (R)
10. Sometimes I feel like students are trying to push my buttons. (R)
11. When class is going badly, I find it hard to figure out what is happening. (R)
12. When class is not going well, I can find the right words to explain to students what is happening.
13. When dealing with problem students, I often find myself thinking, "What is wrong with you?" (R)
14. When I am in the classroom, I am fully focused on teaching.
15. When I am not happy with my class, I calmly talk to students about what I would like to see happen.
16. When I am teaching I seem to be running on automatic, without much awareness of what I am doing. (R)
17. When I am unhappy with a student's behavior, I'm good at finding ways to let him or her know what I am thinking and feeling.
18. When I am upset with my class I can still calmly communicate how I am feeling.
19. When I am upset with students, I have trouble finding the right words to express what I am feeling. (R)
20. When I am working with students, I think about all the struggles that come with this age.
21. When I see a student being treated unfairly, I want to step in.
22. When my class upsets me, it takes me a long time to calm down. (R)
23. When my students are going through a hard time, I try to give them the caring and nurturing they need.
24. When something bad happens at school, I tend to blow it out of proportion. (R)

25. When something or someone upsets me in class, it takes me some time to come to a less emotional, and more rational, perspective on the situation. (R)
26. When something or someone upsets me in the classroom, I am able to take a balanced view of the situation.
27. When something painful happens at school, I cannot stop thinking about it. (R)
28. When students do something wrong, I tend to over-react. (R)
29. When students don't understand the material we are covering in class, I assume it's because they did not do their homework. (R)
30. When things go wrong, I bounce back pretty fast.
31. While I am listening to one student, I am still aware of the whole class.

Toronto Mindfulness Scale (TMS)
(Lau et al., 2006)

<u>**Responses Displayed for Each Item**</u>**:**
Not at all
A little
Moderately
Quite a bit
Very much

1. I experience myself as separate from my changing thoughts and feelings.
2. I am more concerned with being open to my experiences than controlling or changing them.
3. I am curious about what I might learn about myself by taking notice of how I react to certain thoughts, feelings, or sensations.
4. I experience my thoughts more as events in my mind than as a necessarily accurate reflection of the way things "really" are.
5. I am curious to see what my mind is up to from moment to moment.
6. I am curious about each of the thoughts and feelings that I am having.
7. I am receptive to observing unpleasant thoughts and feelings without interfering with them.
8. I am more invested in just watching my experiences as they arise, than in figuring out what they could mean.
9. I approach each experience by trying to accept it, no matter whether it was pleasant or unpleasant.
10. I remain curious about the nature of each experience as it arises.
11. I am aware of my thoughts and feelings without over-identifying with them.
12. I am curious about my reactions to things.
13. I am curious about what I might learn about myself by just taking notice of what my attention gets drawn to.

Five Facet Mindfulness Questionnaire (FFMQ)
(Baer et al., 2006)

Responses displayed for each item:
  Never or very rarely true
  Rarely true
  Sometimes true
  Often true
  Very often or always true

1. When I'm walking, I deliberately notice the sensations of my body moving.
2. I'm good at finding words to describe my feelings.
3. I criticize myself for having irrational or inappropriate emotions. (R)
4. I perceive my feelings and emotions without having to react to them.
5. When I do things, my mind wanders off and I'm easily distracted. (R)
6. When I take a shower or bath, I stay alert to the sensations of water on my body.
7. I can easily put my beliefs, opinions, and expectations into words.
8. I don't pay attention to what I'm doing because I'm daydreaming, worrying, or otherwise distracted. (R)
9. I watch my feelings without getting lost in them.
10. I tell myself I shouldn't be feeling the way I'm feeling. (R)
11. I notice how foods and drinks affect my thoughts, bodily sensations, and emotions.
12. It's hard for me to find the words to describe what I'm thinking. (R)
13. I am easily distracted. (R)
14. I believe some of my thoughts are abnormal or bad and I shouldn't think that way. (R)
15. I pay attention to sensations, such as the wind in my hair or sun on my face.
16. I have trouble thinking of the right words to express how I feel about things. (R)
17. I make judgements about whether my thoughts are good or bad. (R)
18. I find it difficulty to stay focused on what's happening in the present. (R)
19. When I have distressing thoughts or images, I "step back" and am aware of the thought or image without getting taken over by it.
20. I pay attention to sounds, such as clocks ticking, birds chirping, or cars passing.
21. In difficult situations, I can pause without immediately reacting.
22. When I have a sensation in my body, it's difficult for me to describe it because I can't find the right words. (R)
23. It seems I am "running on automatic" without much awareness of what I'm doing. (R)
24. When I have distressing thoughts or images, I feel calm soon after.
25. I tell myself that I shouldn't be thinking the way I'm thinking. (R)
26. I notice the smells and aromas of things.
27. Even when I'm feeling terribly upset, I can find a way to put it into words.
28. I rush through activities without being really attentive to them. (R)
29. When I have distressing thought or images I am able to just notice them without reacting.

30. I think some of my emotions are bad or inappropriate and I shouldn't feel them. (R)
31. I notice visual elements in art or nature, such as colors, shapes, textures, or patterns of light and shadow.
32. My natural tendency is to put my experiences into words.
33. When I have distressing thoughts or images, I just notice them and let them go.
34. I do jobs or tasks automatically without being aware of what I'm doing. (R)
35. When I have distressing thoughts or images, I judge myself as good or bad, depending what the thought/image is about. (R)
36. I pay attention to how my emotions affect my thoughts and behavior.
37. I can usually describe how I feel at the moment in considerable detail.
38. I find myself doing things without paying attention. (R)
39. I disapprove of myself when I have irrational ideas. (R)

Case Example

*(Note: This case example was authored by the researcher for the present study,
and was used as the Basis for the Behavior Intervention Rating Scale.)*

A student in your school has been brought to your attention because they are having difficulty regulating their emotions. They can become upset easily which results in either sadness or anger expressed by crying, yelling, or refusing to complete work in the classroom. A teacher in the school suggests that you try using a mindfulness intervention with this student to help improve their self-regulation. The intervention includes lessons teaching the student about increasing their awareness of their thoughts, emotions, sensations, and their surrounding environment in a nonjudgmental way. The intervention also includes aspects to nurture a positive mind state including kindness and compassion. Throughout the lessons the student practices being aware of their breath, the sounds around them, their bodily sensations, as well as their thoughts and emotions. You have just read about a child with a classroom problem and a description of an intervention for improving the problem. Please evaluate the intervention by selecting the answer which best describes your agreement or disagreement with each statement.

Behavior Intervention Rating Scale (BIRS)
(Elliott & Treuting, 1991)

(Note: The original scale included an additional response option, "strongly agree." This response choice was mistakenly left out of the survey utilized in the present study due to an error. In the scanned version of the article including this scale that the researcher referenced, the "strongly agree" option was not visible, and this omission was discovered after the conclusion of the study, during data analysis.)

<u>**Responses displayed for each item**</u>:
        Agree
        Slightly agree
        Slightly disagree
        Disagree
        Strongly disagree

1. This would be an acceptable intervention for the child's problem behavior.
2. Most teachers would find this intervention appropriate for behavior problems in addition to the one described.
3. The intervention should prove effective in changing the child's problem behavior.
4. I would suggest the use of this intervention to other teachers.
5. The child's behavior problem is severe enough to warrant use of this intervention.
6. Most teachers would find this intervention suitable for the behavior problem described.
7. I would be willing to use this in the classroom setting.
8. The intervention would not result in negative side-effects for the child.
9. The intervention would be appropriate intervention for a variety of children.
10. The intervention is consistent with those I have used in classroom settings.
11. The intervention was a fair way to handle the child's problem behavior.
12. The intervention is reasonable for the behavior problem described.
13. I like the procedures used in the intervention.
14. This intervention was a good way to handle this child's behavior problem.
15. Overall, the intervention would be beneficial for the child.
16. The intervention would quickly improve the child's behavior.
17. The intervention would produce a lasting improvement in the child's behavior.
18. The intervention would improve the child's behavior to the point that it would not noticeably deviate from other classmates' behavior.
19. Soon after using the intervention, the teacher would notice a positive change in the problem behavior.
20. The child's behavior will remain at an improved level even after the intervention is discontinued.
21. Using the intervention should not only improve the child's behavior in the classroom, but also in other settings (e.g., other classrooms, home).
22. When comparing this child with a well-behaved peer before and after use of the intervention, the child's and the peer's behavior would be more alike after using the intervention.

23. The intervention should produce enough improvement in the child's behavior so the behavior no longer is a problem in the classroom.
24. Other behaviors related to the problem behavior also are likely to be improved by the intervention.

Marlowe-Crowne Short-Form Social Desirability Scale
(Strahan & Gerbasi, 1972)

<u>Responses displayed for each item</u>:
True
False

1. You are always willing to admit it when you make a mistake.
2. You always try to practice what you preach.
3. You never resent being asked to return a favor.
4. You have never been annoyed when people expressed ideas very different from your own.
5. You have never deliberately said something that hurt someone's feelings. (R)
6. You like to gossip at times. (R)
7. There have been occasions when you took advantage of someone. (R)
8. You sometimes try to get even rather than forgive and forget. (R)
9. At times you have really insisted on having things your own way. (R)
10. There have been occasions when you felt like smashing things. (R)

Thank you for your participation! Feel free to add any comments.

Appendix C: Additional Questions Included Only on the Posttest

(Note: The posttest was the exact same as the pretest, except that participants were asked to respond to the following additional questions prior to completing the remainder of the posttest survey.)

Did you participate in the 6 session book study on Real Happiness by Sharon Salzberg? (Yes/No)

How many of the book study sessions were you able to attend? (0, 1, 2, 3, 4, 5, 6)

Were you able to practice the skills outside of the book study sessions? (Yes/No)

If yes, describe in some detail the amount and type of practice you engaged in independently, outside of the book study sessions.

Appendix D: Tables

Table 1

Correlations Between FFMQ Subscales and Other Measures

r	FFMQ Subscale	Other Measure Subscale	Other Measure
.42**	Observing	Openness to Experience	NEO-FFI
-.68**	Describing	Alexithymia	TAS-20
.60**	Describing	Emotional Intelligence	TMMS
-.62**	Acting with Awareness	Dissociation	SODAS
-.61**	Acting with Awareness	Absent-mindedness	CFQ
-.56**	Nonjudging	Thought suppression	WBSI
-.55**	Nonjudging	Neuroticism	NEO-FFI
.53**	Nonreactivity	Self-Compassion	SCS

Note: NEO-FFI = Neo-Five Factor Inventory; TAS-20 = Toronto Alexithymia Scale; TMMS = Trait Meta-Mood Scale; SODAS = Scale of Dissociative Activities; CFQ = Cognitive Failures Questionnaire; WBSI = White Bear Suppression Inventory; SCS = Self-Compassion Scale. Adapted from "Using Self-Report Assessment Methods to Explore Facets of Mindfulness," by R.A. Baer, G.T. Smith, J. Hopkins, J. Krietemeyer, and L. Toney, 2006, *Assessment, 13*(1), p. 41. Copyright 2006 by Sage Publications. Adapted with permission.
**$p < .001$

Table 2

Five Facet Mindfulness Questionnaire and Brief Symptom Inventory Relationships

FFMQ Subscale	β with General Severity Index of the BSI
Acting with Awareness	-.29, *p* = .00
Nonjudging	-.36, *p* = .00
Nonreactivity	-.11, *p* = .01

Note: Adapted from "Using Self-Report Assessment Methods to Explore Facets of Mindfulness," by R.A. Baer, G.T. Smith, J. Hopkins, J. Krietemeyer, and L. Toney, 2006, *Assessment, 13*(1), p. 41. Copyright 2006 by Sage Publications. Adapted with permission.

Table 3

Correlations of Toronto Mindfulness Subscales with Other Measures/Subscales

r	TMS Subscale	Other Measures/Subscales	Other Measure
.31***	Curiosity	Absorption	TAS
.22**	Decentering	Absorption	TAS
.16*	Curiosity	Awareness of Surroundings	SSAS
.21**	Decentering	Awareness of Surroundings	SSAS
.41***	Curiosity	Internal State Awareness	SSAS
.31***	Curiosity	Self-Consciousness	SSAS
.23**	Curiosity	Reflective Self-Awareness	RRQ
.42***	Decentering	Reflective Self-Awareness	RRQ
-.16*	Decentering	Cognitive Failures	CFQ
.23***	Decentering	Openness to Experience	NEO-FFI
.22**	Curiosity	Psychological Mindedness	PMS
.19*	Decentering	Psychological Mindedness	PMS

Note: TAS = Tellegen Absorption Scale; SSAS = Situational Self-Awareness Scale; RRQ = Rumination-Reflection Questionnaire; PMS = Psychological Mindedness Scale; CFQ = Cognitive Failures Questionnaire; NEO-FFI = NEO-Five Factor Inventory. Adapted from "The Toronto Mindfulness Scale: Development and Validation," by M.A. Lau, S.R. Bishop, Z.V. Segal, T. Buis, N.D. Anderson, L. Carlson, S. Shapiro, and J. Carmody, 2006, *Journal of Clinical Psychology, 62*(12), p. 1455. Copyright 2006 by Wiley Periodicals, Inc. Adapted with permission.
p < .05. **p* < .01. ***p* < .001

Table 4

Means and Standard Deviations for All Scales at Pretest and Posttest

Measure	Pretest M	Posttest M	Pretest SD	Posttest SD	*t*-test	*d*	*p*
TMCS	111.50	132.00	31.82	15.72	-1.00	-0.92	0.39
TMS	40.25	45.14	7.91	9.14	-1.11	-0.58	0.29
FFMQ	110.63	137.14	22.96	23.51	-2.21	-1.14	0.05*
BIRS	102.38	112.86	10.57	3.89	-2.61	-1.28	0.03*

Note: TMCS = Teacher Mindfulness in the Classroom Scale; TMS = Toronto
Mindfulness Scale; FFMQ = Five Facet Mindfulness Questionnaire; BIRS = Behavior
Intervention Rating Scale.
*p < .05

Appendix E: Figures

Figure 1

Pre- and Posttest Mean Total Scores on the Teacher Mindfulness in the Classroom Scale
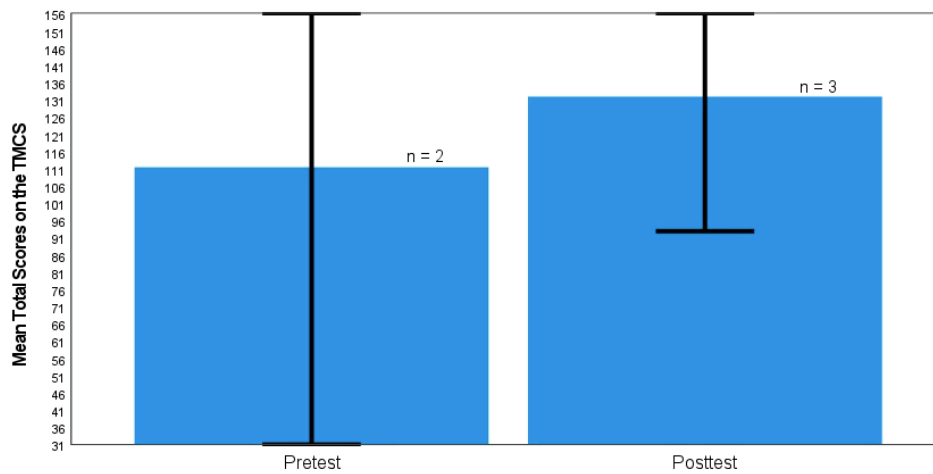
Figure 2

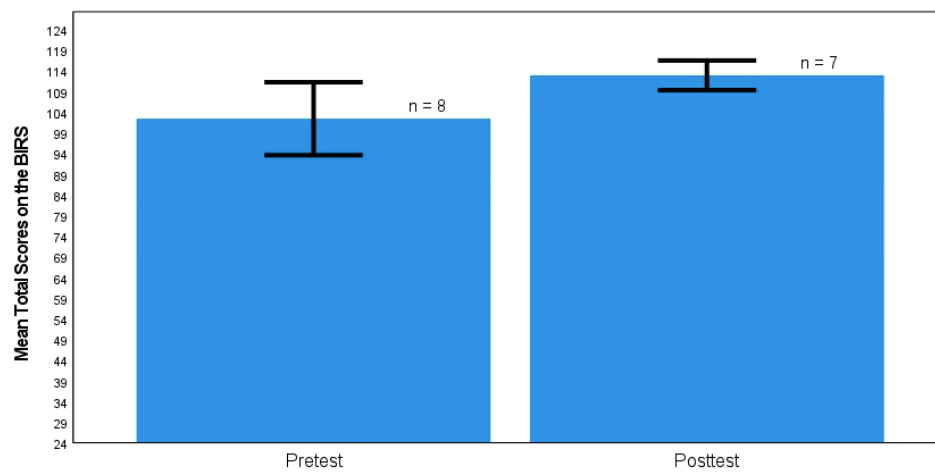*Pre- and Posttest Mean Total Scores on the Behavior Intervention Rating Scale*

Figure 3

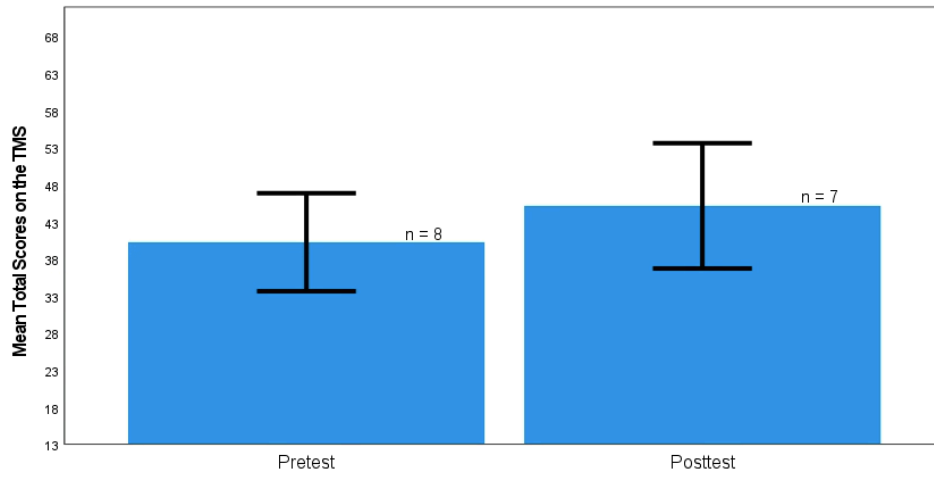*Pre- and Posttest Mean Total Scores for the Toronto Mindfulness Scale*
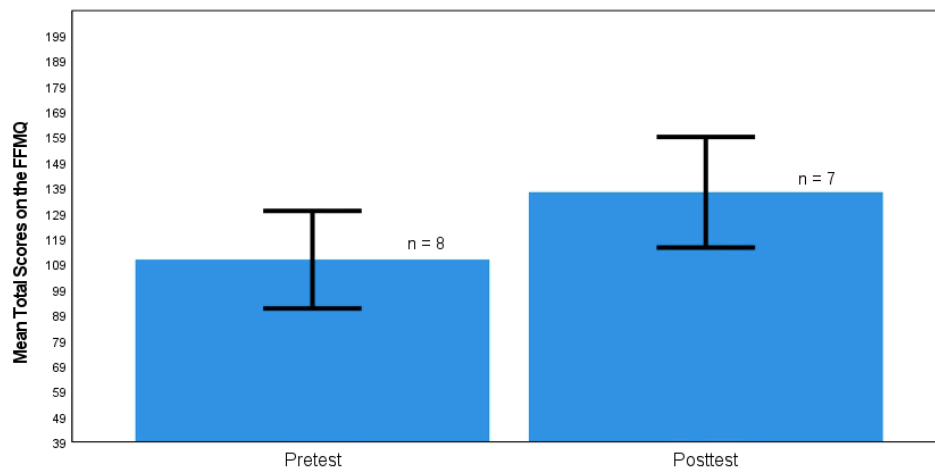
Figure 4

Pre- and Posttest Mean Total Scores for the Five-Facet Mindfulness Questionnaire

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