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The Dyadic Relationship of Student and Teacher Anxiety and the Process for Applying Mindfulness Based Practices in the Classroom

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THE DYADIC RELATIONSHIP OF STUDENT AND TEACHER ANXIETY AND THE PROCESS FOR APPLYING MINDFULNESS BASED PRACTICES IN THE CLASSROOM

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Abstract

Teachers and students are increasingly suffering from mental health problems. It's prevalence places anxiety out in front of other psychological disorders plaguing the education system. The growing body of research on mindfulness-based interventions is showing promising results for combating mental health problems in the classroom.

The dominant explanation for this trend in increased anxiety for students is evaluation and environmental factors, whereas, workload, student behavior, employment conditions, and vicarious trauma are influencing the suffering of teachers. It has increasingly become an urgent topic of research, with many people concerned for the success of our education system, feeling disturbed by the rising trend, yet hopeful in the potential of mindfulness.

Confirming the benefits of the fast-growing health trend, mindfulness is demonstrating major benefits in the classroom. Findings indicate improved physical well being, emotional regulation, focus, academic performance, cognitive functioning, and resilience (Deplus, Billieux, Scharff, & Phillippot, 2016). The impact has also demonstrated reduced anxiety and a calmer amygdala, the brain region associated with anxiety. Studies are proving that mindfulness can reduce stress and cortisol levels responsible for many ailments (Skoranski, 2018). There continues to be evidence for expanding mindfulness practices in the classroom to tame students behavior and make for a more calm focused classroom where teachers can thrive and be fulfilled and satisfied with their career.

Acknowledgements

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Chapter 1: Introduction

Background

"I think I know the answer. Don't put your hand up. You could get it wrong. Then everyone will think you're an idiot," may be close to the internal monologue of a student struggling with anxiety. "I forgot to ask if Will understood the lesson today. Am I getting observed tomorrow? You're not going to make rent this month. Did you finish the lesson plan for Wednesday?" are the thoughts of a teacher struggling with anxiety. These thoughts, or similar anxious thoughts are becoming chronic and are plaguing the once eager and healthy minds of students and teachers. Mental health disorders like anxiety and depression are increasing amongst students and teachers. These debilitating disorders are preventing students from learning, and teachers from teaching.

Student Mental Health

As cited in Scheffler et al., (2018) The American College Health Association's National College Health Assessment (NCHA) gives pertinent information about the health and perceptions of students. In the study's preliminary findings Scheffler et al. (2018) point out that adolescents are faced with far more anxiety than generations before. Anxiety disorder has become the most common mental disorder among teens today; in fact, the study found 32% of 13-17 year olds have been reported as meeting the criteria for an anxiety disorder at one point in their lives. They have found that of all the mental health disorders combined, anxiety is increasing at the fastest rate. From 2008 to 2014 the rates of having been diagnosed with anxiety

in students aged 18-26 rose by 48%. With so many young people experiencing anxiety, the effects are pouring out into classrooms across the United States. Anxiety, experienced in the classroom, can affect students' ability to focus and learn, participate in class, be efficient and remember, make friends, join clubs or sports, and attend school and class on a regular basis (Barrows et al., 2013; Killu, Marc, & Crundwellet, 2016; Owens et al., 2012; La Greca & Lopez, 1998; Bledsoe & Baskin, 2014; Anxiety Disorders in Children, 2018). Students are feeling excessive worry and are simply overwhelmed, leading those that care for them to wonder how they can help. Teachers are feeling it too.

Teacher Mental Health

In 2015, concerns for the health and well-being of teachers were brought forward to the American Federation of Teachers (AFT). In response they designed an 80-question survey that 30,000 educators responded to. The survey was designed to assess well-being, working conditions and stressors for educators. According to the AFT (2015), 26% of educators responded that within 30 days of answering the survey their mental health was not sound for nine days or more. Two years later, 5,000 educators responded to a shortened 30 question survey which found that 58% of respondents described their mental health as "not good" for a minimum of seven of the previous 30 days, an increase of 24% in just two years. A different question on the same AFT (2017) survey asked respondents, "How often is work stressful?" The question demonstrated that educators find their work stressful 61% of the time, but the general population reported work being stressful only 30% of the time. Borrelli et al., (2014) understand that mental health is an important occupational health problem for teachers. Their work demonstrates work

stress as a major risk factor for anxiety and depression. A cross-sectional questionnaire was randomly given to teachers from six elementary and middle schools. The questionnaire used the Karasek Job Content Questionnaire, the Self-Rating Anxiety Scale (SAS), and the Center for Epidemiologic Studies Depression Scale (CES-D) to measure how high job demand may be associated with anxiety and depression in teachers. Of the 180 teachers who received the questionnaire 113 responded with data demonstrating that only about half of the teachers in the sample were above the threshold for depression, suggesting correlations between job demand and mental health symptoms. Poor mental health is a precursor to the nationwide teacher shortage (Wiggan, Smith, & Watson-Vandiver, 2020). As solid teachers become harder to find, caring for our pre-existing teacher workforce should become vital. Henry Seton said it best, "Teachers are attuned to the social-emotional wellbeing of our students and trained to monitor for signs such as trauma, anxiety, bullying, or microaggressions. Yet we are still just learning how to discuss a huge, lurking threat to our work: our own mental health" (as cited in Boudreau, 2019, p.1). Only now are policy makers waking up to see the importance of caring for the mental health of teachers.

The Link

The need to address both student and teacher mental health is pressing due to the fact that they directly influence one another. Student mental health is interconnected to teacher mental health in a cyclical relationship. This dichotomous relationship that teachers and students have with one another, along with the ability to feel vicariously for each other, holds immense importance to be noted and studied. Vicarious trauma happens when an individual intensely

experiences the emotions of someone else. It's also known as secondary trauma (Singh, Lancioni, and Karazsia et al., 2016). The evidence supporting student success being linked to teacher mental health is clear. According to Herman et al. (2020) teacher stress and poor coping can lead to high burnout, and lower learning outcomes for students. It suggests that when teachers are struggling psychologically, it results in academic decline for their students. Arens and Morin (2016) reiterate this point as their findings point to emotionally exhausted teachers being less able to provide quality instruction, which ultimately leads to lower levels of achievement with students. On the flip side, student anxiety can also intensely affect teachers, resulting in vicarious trauma. Teachers can absorb the feelings and struggles of their students as if they were their own. It's much like the relationship between plants and humans. Plants produce oxygen gas as a waste product that very much facilitates human life. In turn, humans produce carbon dioxide gas as a waste product that promotes plant life. You can't have one without the other, much the same for teacher and student anxiety. These findings give rise to concern for both parties in the classroom, teachers and students.

Hope for Students Via Mindfulness Practices

With far too many students struggling with mental illness such as anxiety and depression, mindfulness provides a haven for relief. It's critical for us to understand well the extent of the mental health crisis that students are facing. We have a moral obligation to ensure that students are getting help when they need it most, in their formative years. This leaves schools with a ripe opportunity to combat this problem. Mindfulness practices are showing immense promise in helping to provide students lifelong coping skills and wellness. According to Trafton (2019), two

recent studies by MIT have helped to understand that practicing mindfulness in the classroom, in these cases with middle schoolers, can enhance the mental health and academic performance of students.

Hope for Teachers Via Mindfulness Practices

Although teaching may breed mental health struggles due to the highly stressful work environment, there is hope that the stress and anxiety of the job can be mitigated with effective mindfulness practices. Research on teacher burnout, anxiety, and stress can inform ways to improve teacher well-being and student success. Mindfulness has exciting promises for struggling teachers. According to Jennings (2015), mindfulness practices help teachers become less reactive and better able to spot their own emotional patterns, which leads to teachers responding in the ways they want to rather than reactively and without intention. Additionally, mindfulness can help teachers revel in the joys of teaching. Teachers can better hold onto positive feelings when a student learns something new for the first time or a strong connection is formed. Keeping in mind the reciprocity between student and teacher mental health, this is an advantage for students as well. Direct evidence of the benefit to teachers is provided by Eva and Thayer (2017), who claim the body of research to support the positive and measurable outcomes from mindfulness is continuing to grow, and continuing to show opportunities for dramatic improvements in teacher mental health.

Review of the Literature

This thesis investigates the decline of both students' and teachers' mental health while seeking to understand how mindfulness practices in the classroom may help. Mindfulness practices are derived from ancient Buddhist teachings, but have inspired a secular movement. Hospitals, clinics, and even work places are offering mindfulness as treatment to alleviate ailments, primarily mental health disorders. Mindfulness may seem like a buzzword today because the word is at the forefront of health and wellness magazines, websites, and advertisements. It's talked about on the nightly news, business leaders swear it conquers burnout, celebrities rave about it, and neurologists study it. Perhaps this wave of mindfulness is catching hold in education as well, as it is now being included in a number of public school curricula to help students and teachers cope with and regulate their emotions.

This investigation begins with a review of the rise in mental health disorders, first in students, then in teachers. Discussion of the benefits of secularized mindfulness practices for improving overall mental health of students and teachers follows. Though there are many positive outcomes for teachers practicing mindfulness, decreasing stress and anxiety is the major focus of this review of the literature. The benefits of mindfulness have been well-established in clinical settings and there is now a need to study whether the effects transfer into the school setting. Students and teachers today are struggling with mental health disorders like no other generations before them, certainly there are reasons to fix this problem.

Definition of Terms

Anxiety.

Understanding and defining both "anxiety" and "mindfulness" will create the parameters of this literature review. First, consider anxiety as a hypernym. Anxiety encompasses a whole range of negative emotions. Frenzel et al. (2016) address the semantic field for the emotion of anxiety which includes the terms: anxious/anxiety, tense, nervous, worry/worried, and uneasy. According to Anxiety Disorders Association of America (ADAA, 2018), the term "anxiety disorder" refers to a group of mental illnesses that includes generalized anxiety disorder (GAD), obsessive-compulsive disorder (OCD), panic disorder, posttraumatic stress disorder (PTSD), social-anxiety disorder (also called social phobia), and specific phobias. For this review the term anxiety will be used as an umbrella term in reference to the group of disorders as well as test anxiety for students, and non-debilitating, but work-related stress and anxiety for teachers.

Test anxiety, according to Chapell et. al (2005), is a phenomenon that causes those affected to become preoccupied by the possible negative outcomes of academic scores. It's accompanied by worry, emotionality, and behavioral responses. Test anxiety causes students to worry about the personal and social consequences of doing poorly on a test, often at a detriment to their performance even when they've prepared sufficiently. This form of anxiety will be considered in the review.

Work-related stress is a precursor to anxiety. According to the Centers for Disease Control and Prevention (CDC, 2014), job stress is the harmful physical and emotional response

that manifests when the needs and resources of the worker are unmet, and the job doesn't match the worker's capabilities. When work-related stress is prolonged it manifests as anxiety. Chronic stress easily becomes anxiety as a reaction to the stress. Because anxiety is a reaction to stress they are inextricably connected. The term stress in the context of this review will refer to psychological symptoms, such as depression, anxiety and burnout. In the literature review weight is given to reviewing information about stress in the workplace as it applies to anxiety and the mental health of teachers.

Finally, it is important to differentiate between acute anxiety and chronic anxiety. Acute anxiety, a normative response is different from anxiety disorder. Acute anxiety incites people to prepare for a crisis with the fight or flight response, or freezing to avoid looming suffering. Whereas anxiety disorder prevents regulation of the normal anxiety response system and manifests as dysregulation (Weems et al., 2013). Moderate anxiety is something we all experience. Since the time when our primitive ancestors were roaming the land hunting and gathering, anxiety has served as a beneficial physiological reaction. When face to face with a real threat like a bear or a large mammal, a beneficial physiological response is to send the sympathetic nervous system into drive. During this response, heart rate increases, digestion stops, and the pupils dilate to let in more light and allow the person to be more alert and focused. It is an emotional fear response to threat. Therefore, moderate anxiety can help mobilize us to act, help create better performance, and better outcomes. In fact, moderate anxiety is experienced by everyone before a job interview or before meeting someone new for the first time. Experts such as Dr. Gene Beresin, the executive director of the Clay Center for Healthy Young Minds at

Massachusetts General Hospital, argues that anxiety is a normal experience (as cited in Coltrera, 2018, p. 1). A small amount of anxiety can, at times, be productive.Killu et al. (2016) suggest that anxiety is normal when it results in the person taking action to deal with the threat (physical, social or performance related). It's just that sometimes the systems that cooperate with our anxiety response become confused and dysregulated. This causes us to react to the wrong situations. Although anxiety is normal and we all experience it, sometimes the body can't decipher a real threat and a feigned threat. In the latter situation the anxiety response can be negative, even detrimental. That is why it is important to differentiate between healthy levels of anxiety and anxiety disorder. Healthy anxiety turns into a disorder when the anxiety stops facilitating adaptive functioning (Pine, 2009, 0:22). When it is not normal, the person is in a chronic state of worry. The worry can then cause the person to avoid situations, and impact their ability to function in their daily endeavors. Under these circumstances the behavior would be classified as an anxiety disorder.

Mindfulness.

The process of defining mindfulness is similar to anxiety in that it is also an umbrella term. Mindfulness today could mean a variety of different things like practicing yoga, tai chi, cognitive therapy, positive psychology, or Mindfulness-Based Stress Reduction (MBSR). To define mindfulness it often helps to imagine complete attentiveness to the present moment; nothing else matters, but breathing. Being completely immersed in the pace, the sound, and the feeling of breath, without judgement. When thoughts creep into the mind, just as quick as they enter, they're allowed to leave and a focus on the breath is resumed. This is mindfulness. The

literature, however, conceptualizes mindfulness in a number of ways. According to Kabat-Zinn (2003) the founder of Mindfulness-Based Stress Reduction (MBSR) and the MBSR clinic, mindfulness is, "the awareness that emerges through paying attention on purpose, in the present moment, and nonjudgmentally to the unfolding of experience moment to moment" (p.145). This definition of mindfulness does not require a direct connection to breath. Rather, mindfulness could be anything from paying attention to a book, a conversation, or a meal. It's a form of awareness requiring intentional cognitive presence while acknowledging your feelings, thoughts, and bodily sensations with a calm acceptance. It is being fully present and aware of our thoughts and intentions. Mindfulness also encourages detached, non-judging observation or witnessing of thoughts, perceptions, sensations, and emotions, which provides a means of self-monitoring and regulating one's arousal with detached awareness (Tacón et al., 2003). Given these definitions, for the purpose of this thesis, mindfulness is conceptualized as the process of applying deliberate awareness to a task while maintaining an uninvolved recognition of momentary internal mental processes and external situational factors across various circumstances.

Research Question

The purpose of this study is to review literature to assess the current information and statistics on mental health diagnosis of students and teachers, to review the sources of anxiety for students and teachers, to assess the impacts of anxiety on student and teacher outcomes, and to review the effects of mindfulness-based interventions in clinical and educational settings. The research questions include: What are the effects of mindfulness on anxiety? More specifically what are the effects on students and teachers' anxiety? In order for mindfulness practices to take

root in our classrooms, both the need for and the value of mindfulness need to be evident. I hope that through my work I can bring some clarity and demystify some commonly held misconceptions about mindfulness in education, and show how it can benefit school communities

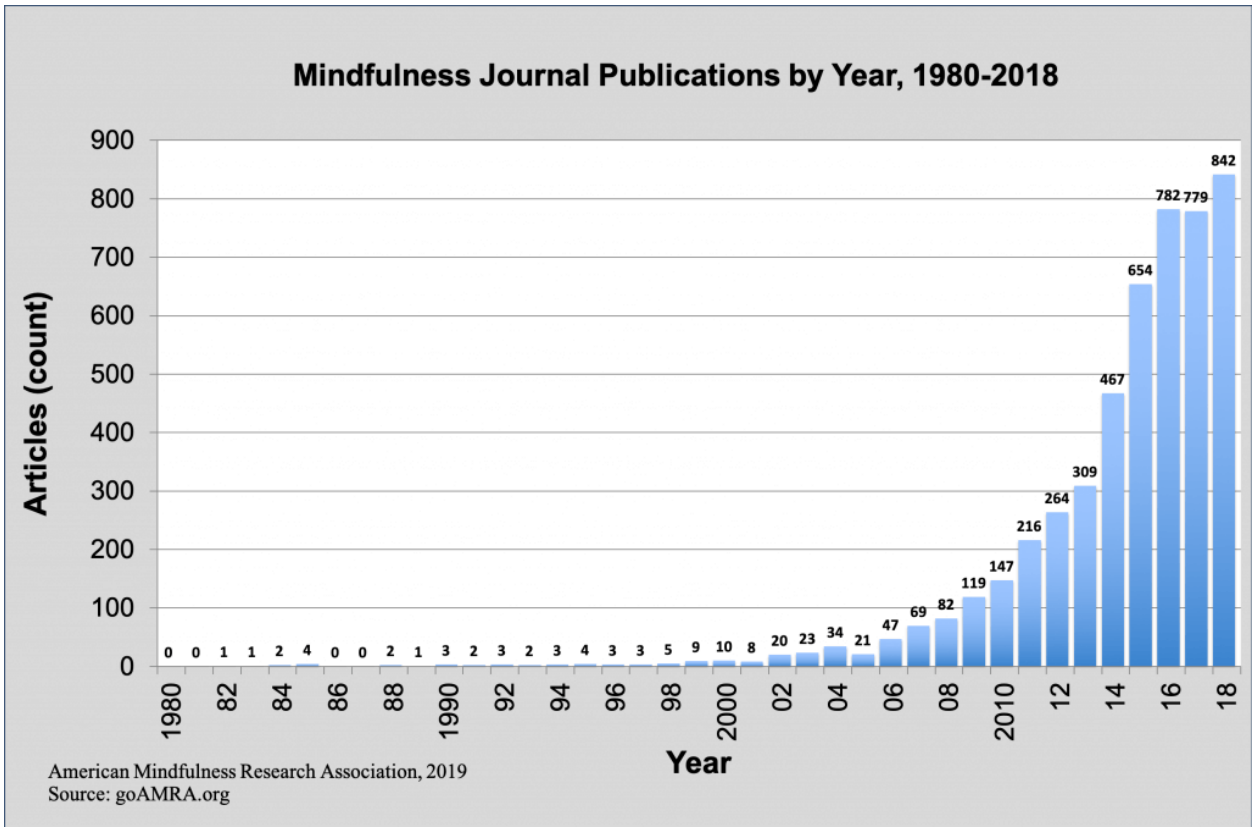
Chapter II: Literature Review

Methods

This review of the literature examines the trend of rising mental health diagnoses, the sources and impact of anxiety in the classroom, and the secular mindfulness practices that can help alleviate the burden anxiety brings to the classroom for both students and teachers. The dates selected for a literature search were from 2010 to 2020, across a multitude of databases, primarily ERIC (EBSCOhost), SAGE Journals online, ProQuest, PsycINFO, and PsycARTICLES. The following search terms pertaining to students, teachers, and the classroom were included: mental health, burnout, anxiety, depression, and mindfulness. The criteria for literature to be included were: peer-reviewed articles, titles containing anxiety, studies with a control group, and the lead practice in the intervention being mindfulness. While anxiety has been a thoroughly researched topic for many years, there were few scholarly articles or research studies published on secular mindfulness and meditation prior to the 1990s. The boom in the research took off in 2006, a likely cause being public interest in mindfulness meditation. The increase in popular acceptance has caused parallel scientific curiosity (Wisner, 2017). As mindfulness met scientific inquiry, the quality of the research began to increase, as well as the number of randomized controlled trials. In fact, according to Powell (2018), the number of randomized controlled trials jumped from one to 11 to 216 when looking at the following two year interval time spans: 1995-1997, 2004-2006, and 2013-2015. This data going back to the 1990s demonstrates a clear increase in the interest of mindfulness practices, the curiosity to know how mindfulness may benefit people is reaching out to many different journals in many

different fields, making it an exciting time to investigate its success in education. Figure 1 illustrates how expansive the research on mindfulness practices has become in the last 14 years (American Mindfulness Research Association, 2019, p. 1).

Figure 1. Mindfulness journal publications by year, 1980-2018



The principal interest for the literature review is mindfulness-based interventions (MBIs) in educational workplaces, and the secondary focus is clinical and non-intervention studies on mindfulness.

Mental Health Diagnoses of Anxiety

The following section will review the current statistics and key findings of studies pertaining to the increase in mental health diagnoses of anxiety. A study designed to provide the first epidemiological data on generalized anxiety disorder compiled information from 147, 261 adults aged 19 to 99 who responded to a mental health survey from the World Health Organization (WHO). The authors, Ruscio et al. (2017), found that GAD is more common in high-income countries than in low income countries. The study also confirmed an expected increase in the prevalence of anxiety throughout the United States. This may be due to the changing psychiatric classifications occurring since 2013 as the Diagnostic and Statistical Manual of Mental Disorders (DSM) has been revised and expanded from the DSM-IV to DSM-V. However, with a 37% increase, it is still important to note. The newly identified individuals were previously barred from a GAD diagnosis due to their concomitant mood disorders, but the prevalence of the disorder is clear. The Anxiety and Depression Association of America (ADAA) (2018) confirms so, reporting that 18.1% of the population or 40 million adults in the U.S. suffer from anxiety, the most common mental illness. Craske (2016), also highlights the prevalence stating one in nine people worldwide have had an anxiety disorder. Not only is anxiety the most common mental illness, but it's the most burdensome.

Stein et al. (2017) conducted an epidemiological study looking at survey data from The ECA (Epidemiological Catchment Area), the National Comorbidity Survey (NCS, 2017) and similar data in other countries. Stein et al. (2017) found that anxiety disorders were the most

prevalent and burdensome class of psychiatric disorders. Anxiety causes disability, academic impairments, financial loss, and disease. Creating a burden for society and the economy far beyond the stress, fatigue, and quality of life. The research also notes that anxiety disorders have an earlier onset then other disorders making it more likely to affect children and be a lifetime disorder in comparison to other mood disorders. A look at the prevalence of anxiety in students will help illuminate this increasing issue, and give rise to the importance of schools detecting and combating early onset.

Mental Health Diagnoses for Students

According to the Anxiety and Depression Association of America (ADAA, 2018), anxiety disorders affect one in eight children. These children are more likely to perform poorly in school and engage in substance abuse. The National Institutes of Health (NIH, 2017) echoes those statistics by revealing that nearly a third of all U.S. adolescents, ages 13 to 18, will have an anxiety disorder at some point in their life. It's estimated that 31.9% of adolescents have an anxiety disorder based upon data from the National Comorbidity Survey Adolescent Supplement (NCS-A, 2005). Bitsko et al. (2018) found 2.6 million American children and adolescents had diagnosed anxiety and/or depression in 2011-12, a 3% increase from 2003. Scheffler et al. (2018) looked at reports from the Association for University and College Counseling Center and found that 2016 was the seventh year in a row that anxiety was the top complaint among students seeking mental health services. Anxiety has surpassed depression, and is now the leading mental health concern for college-age students. Anxiety disorder is harmful to children as well as adults. Leading a life where worry and nervousness prevents you from focusing on daily tasks can have

a crippling effect in the classroom when a child is trying to learn. According to the Centers for Disease Control and Prevention (CDC, 2020), 7.1% of kids, ages three to seventeen have diagnosed anxiety, and in a span from 2007 to 2011 anxiety has increased from 5.5% to 6.4%. Even more alarming are the findings from Plemmons et al. (2018), who examined the trends in emergency and inpatient encounters for children struggling with suicidal ideation and suicidal attempts. The study shows the increase in young people struggling with GAD, a comorbid disorder with depression, substance abuse, and suicide. They found that between 2008 and 2015 the number of children and adolescents aged 5-17 admitted to the hospital for suicidal ideation and suicidal attempts more than doubled in the last decade. It's also mentioned, with an acknowledgement that more research needs to occur, the need to understand the role schools play in hospitalizations occuring more often during the academic school year (Plemmons et al., 2018). Not only are the rates increasing for young children and adolescents, but the rates of college students suffering is startling too (Scheffler et al., 2018). Perhaps this is an indicator that there aren't enough effective solutions at work in the elementary and secondary years to prevent this post-secondary trend.

Mental Health Diagnoses for Teachers

Rising Mental Health Concerns.

Teachers are leaving the profession at alarming rates. According to Sutcher, Darling-Hammond, and Cerver-Thomas (2016), attrition rates in the U.S. are high, at 8%. Rates in Finland, Singapore, and Canada are 3% to 4%. These rates are even higher for new teachers

and teachers in high-poverty schools and districts. According to Ingersol (2001), the attrition rate is 50% higher in high poverty school districts. Retirement is not causing the high attrition rates, it's due to teachers being dissatisfied with the profession and the mental health disruption it causes. According to qualitative research conducted by the Department for Education, Gibson (2017) found that anxiety issues, as well as others, such as panic attacks and sleeping problems contributed to teachers leaving the profession. As previously stated this review of the literature, the American Federation of Teachers found high rates of self-respondent dissatisfaction with their mental health.. According to the AFT (2015) 26% of educators responded that within 30 days of answering the survey their mental health was not sound for nine days or more. Two years later, AFT (2017) found that 58% of respondents described their mental health as "not good" for a minimum of seven of the previous 30 days, an increase of 24%.

Teaching as an occupation has high rates of stress and burnout that interfere with the mental health of teachers, in K-12 education, and at the university level (Geving, 2007). Pithers (1998) interviewed 332 Scottish and Australian vocational and further education teachers, and found that one-third of all teachers claim the profession to be "stressful" or "extremely stressful". According to Jones-Rincon and Howard (2018) teachers with GAD are absent more frequently and report less job satisfaction based on an online questionnaire with 3,361 public school teacher respondents. In a caring profession teachers are called to care about the wellbeing of their students, but it's well known that in order to do so teachers must care for themselves first. Since caring for the mental health of teachers is of low priority, stress and anxiety that leads to burnout can be more prevalent. Burnout in teachers has been extensively studied which continually

shows a direct correlation between demanding working conditions and increases in occupational distress which can lead to anxiety disorders (Jones & Howard, 2018).

This idea is reiterated in a study of Italian teachers assessing generalized anxiety in Italy. Borrelli et al. (2014) demonstrated teacher anxiety through the use of a self-rating anxiety scale (SAS), called the Karasek Job Content Questionnaire, which was designed to investigate the prevalence of depression and anxiety symptoms and their correlations with job content. Teachers reporting greater job demands also rated high on the anxiety scale, the SAS was positively correlated with job demand ($r = 0.408$, $P < 0.01$). The study highlights how directly linked working conditions are to predicting psycho-pathological symptoms in teachers.

The United Kingdom has taken the lead in understanding and studying the mental health of their teachers. Jerrim et al. (2020) of University College London (UCL) conducted an investigation into whether teachers were suffering from anxiety more today than in the past. Their paper is one of the first long run investigations of the mental health and wellbeing of teachers. Findings from the Labour Force Survey and Health Survey for England were cited, and Jerrim et al. (2020) found that over a period from 1990 to the 2000s 1% of teachers reported a long-lasting mental health problem and taking antidepressants, but in the late 2000s and early 2010s it rose to 2%. The five years from 2013 to 2018 showed the most noticeable increase, from 2% to 5%, of teachers reporting a long-lasting mental health problem. The data collected demonstrated that one in twenty teachers are suffering with a mental health issue that has lasted, or is likely to last, more than a year. This data coincides with the rise in the percentage of educational professionals who are taking medication prescribed for depression. The research

from the United Kingdom is important to note because it seems as if the U.S. is trending in the same direction.

According to data from the Gallup-Healthways Well-Being Index survey (2013), 46% of teachers in K-12 settings report high levels of daily stress during the school year. Students' mental health is studied and reported on robustly. With all the attention focused on students' mental health, there is a lack of effort on exploring ways of understanding and supporting teachers who experience high levels of stress and mental health disorders too. There is room for more energy to be spent on understanding teacher wellness, when we know teachers' mental health affects their students' mental health.

The Link Between Student and Teacher Anxiety.

In a study focused on understanding the association between teacher and student mental health and wellbeing, 3,215 students ages 12 to 13 participated in data collection along with 1,182 teachers. The Warwick Edinburgh Mental Wellbeing Scale (WEMWBS) was used to measure both teacher and student wellbeing. Psychological distress was measured using the Strengths and Difficulties Questionnaire (SDQ). Harding et al. (2019) found that better teacher wellbeing is associated with better student wellbeing and with lower student psychological difficulties. Lower teacher depressive symptoms were also associated with better student wellbeing. The study suggests there is a significant link between teachers and students' mental health, and that perhaps focusing on improving and addressing teacher wellbeing and symptoms of depression may improve outcomes for students.

Geving (2007) demonstrates the cyclical relationship between student and teacher mental health. The study investigated student behaviors that were associated with teacher stress and vice versa. It was found that student lack of effort was most strongly associated with teacher stress, and teacher behaviors were correlated to students coming to class unprepared. The study demonstrates teacher/student interactions being a continual cycle in which both parties influence one another. The study supports the fact that students cause stress for teachers, and teachers cause stress for students. When the teacher is well, the student is well. When the student is well, the teacher is well, and in both cases, the environment is conducive to positive mental attitudes.

Sources of Anxiety: Originating or Exacerbated by School

Anxiety felt by students and teachers can be compounded by the school environment. A look at the many sources of anxiety for both students and teachers sets up the foundation for how mindfulness practices can help. Being a student is inherently stressful, for many reasons including evaluation and environmental factors.

Sources of Student Anxiety

Evaluation.

There are a number of factors under the umbrella of evaluation that are causing anxiety for students. The following will be addressed: high stakes tests and assessments, attachment to objects and outcome, and intense competition.

High Stakes Tests and Assessments.

Classrooms by nature are evaluative, and an evaluative environment can cause anxiety for just about anyone. If you've ever given a speech or taken a high stakes test you know that being evaluated can cause stress and anxiety. That said, some stress and anxiety can be healthy. Stress is a helpful biological tool for preparing for evaluations. Symptoms start to ease up in response to the amount of studying and preparation that goes in, as a sort of natural monitor for your body. The more you study the more confident you feel, and the more calm takes over. However, evaluative environments can trigger students with genetic or biological predispositions toward high levels of anxiety, generalized anxiety disorder, or maladaptive coping mechanisms.When stress becomes chronic due to the evaluative nature of the classroom, anxiety starts to set in. What is disheartening is that today almost all students feel this anxiety on some level. Especially in regards to assessments, and in particular high stakes tests, but they're unequipped with tools like mindfulness to help. Allen and Klein (2012) explain that in the US today, test anxiety has become a nearly universal experience for students. In the US students find themselves trying to learn in a test-conscious culture. Test taking, everyday classroom achievement, and competition to succeed are consistently causing stress that results in high anxiety and poor performance on IQ tests. The pressure is coming from parents, teachers, and peers.

According to Gillen and Gillen (2007), youth today are feeling an immense amount of stress from academic pressure. There's an imbalanced emphasis in today's school systems on standardized tests. The drive to do well on these tests simply leads to our students feeling less

excited about learning and more and more burnt out. This test anxiety continues to creep up in so many different areas of research. Shahidi (2017) helps to explain that fear of failure, lack of preparation, and bad experiences of examination are the drivers of test anxiety, a specific type of performance anxiety. It can cause physical, emotional, and cognitive behavioral symptoms in someone who's suffering from the disorder. This negative testing experience is what causes the anxiety. The feeling of anxiety can be compounded when you are an anxious student already.

Cunha & Jacinta Paiva (2012) remind us that anxious students are generally quite vulnerable to signs of evaluation situations. They're worried and doubtful through all phases of the evaluation, before, during, and after tests and exams. This kind of vulnerability leads to even more maladaptive coping and physiological symptoms from the anxiety. Carsley (2018) studied the Effectiveness of Mindfulness-Based Colouring for Test Anxiety in Adolescents demonstrated that a third of teens are experiencing test anxiety. They're either experiencing test anxiety states, which are immediate concerns before a test, or individual traits, which are daily concerns associated with testing situations (Carsley, 2018). Students are feeling tremendously stressed by the stakes of their assessments to the point that, kids' greatest worry and cause of anxiety are from tests. Unlike other fears test anxiety increases with age, as the stakes for tests become greater and as adolescents progress through school (Carsley, 2018). The fear of who you will sit by at lunch or will you be able to make it to class on time is entirely masked by the stress of test taking. It's so severe, this type of stress, that it takes over our primitive response systems. Mindful Schools (2019) explains, the old survival hardware, remnants of our evolutionary biology are tapped into during chronically stressful situations. Toxic stress is challenging

because it taps into our primitive physiology and is hard to control. One 4th grader even reported that she felt like she “was going to die” from test anxiety (Mindful Schools, 2019, p. 5). She is, in some ways, telling the truth as her autonomic nervous system is lighting up and firing in the same way that it would if she were in physical danger. The stress felt from taking tests is causing student anxiety and it’s causing real physiological responses in our students' bodies.

Attachment to Objects and Outcome.

The competition is especially intense at the collegiate level. Students are feeling anxiety from attaching themselves and their self worth to their grades. According to a study from Crowley and Munk (2017) of Grand Valley State University, anxiety comes on from attachment to outcomes or certain objects such as a grade in a class. Wanting that object begins to create tension that is painful, especially if the desired outcome doesn’t play out. There is often a fear of losing the object or outcome once it’s been obtained. Even when the desired goal is fulfilled the cycle rages on, wanting, working, gaining. The cycle of expectations and desired outcomes creates anxiety (Crowley & Munk, 2017). Student anxiety is tied directly with students holding tightly to their future achievements. This adherence to their grades, graduation, or employment is cause for a very stressful experience that can be compounded. The demands of learning new and complex material while striving to hit deadlines even with a part time job or a full course load can exacerbate the symptoms of an anxious student (Crowley & Munk, 2017).

Students are starting to feel the lack of connection with learning, and the real consequences of an education system that is built off of success and competition. Researchers Illiuk & Chorney (2017) explored how students may learn to calm and control their mind

through mindfulness training. They share that mindfulness can help change the reality that the current system encourages, an environment of competition. They explain that specialized programs, university degrees, and jobs all require the statistically best student. Students are experiencing a lack of connection with the school communities, because schools are catering to students that can learn through standard teaching methods, and thrive in highly competitive environments. These same environments can cause high stress for many students. Many students are successful in this environment, but the anxiety they feel trying to stay on top is crippling. The lack of connection to their peers and students that young people today are feeling in schools is compounded by the intense competition that exists in the modern day education system.

The stakes are so high, at all levels. Marco Grados (as cited in Nutt, 2018) an associate professor of psychiatry and clinical director of child and adolescent psychiatry at Johns Hopkins Hospital, is quoted in The Washington Post saying, "Now we're measuring everything.. School is putting so much pressure on them with competitiveness… I've seen eighth graders admitted as inpatients, saying they have to choose a career!" The intense competition begins at a very young age now. Students are told that they must think about their future earlier and earlier. They are fed lines like, 'you'll never get into college unless you have good grades', or 'how are you going to compete with other students that are working harder than you, both in the classroom and out'. That is enough to demonstrate the clear connection evaluation and competition have with student anxiety.

Environmental Factors.

There are a number of environmental factors that are causing anxiety for students. The following will be addressed: sleep, parents, adults, primary caretakers and teachers, trauma, experiences or life events, frequent exposure to stress, and bullying.

Sleep.

The idea that the cause of anxiety can be related to the environment is reaffirmed by Landgraf et al. (2016) who exposed mice to chronic mild stress and their circadian clocks were altered. The study revealed that when sleep rhythms in the SCN (hypothalamic suprachiasmatic nucleus) were disturbed it caused helplessness, behavioral despair, anxiety-like behavior, and increased sensitivity to stress. Even a simple environmental change such as altered sleep can affect a person's ability to cope with stress that leads to symptoms of anxiety. A good night's sleep could be the difference between a person's ability to deal with stress or not. Anxiety can manifest when being able to get a good night's rest is unable to be controlled. We've known for some time that a good night's rest for a student can make all the difference in the world for their ability to focus and learn. According to Eide and Showalter (2012) there is a statistically significant relationship that exists between sleep and test scores. Using nationally representative data on students 10-19 years old, Eide and Showalter (2012) were able to determine sleep patterns that result in better test scores. It's likely that many of our students are not getting enough sleep which is leading to anxiety and in turn to low test scores. In fact, Blake et al.

(2018) found that poor sleep is the precursor to anxiety and depression for teens rather than the reverse, depression and anxiety causing poor sleep.

It is often the question, “which came first: the chicken or the egg?” when it comes to anxiety and sleep. The answer, poor sleep comes first, and anxiety follows. When students aren’t getting restful sleep it increases their risk of anxiety. Adolescents should be getting 9 hours of sleep a night. What has been found is that teens who have clinical levels of anxiety and depressive symptoms benefit largely from sleep interventions (Blake et al., 2018). This suggests that sleep interventions are helpful, but are more helpful for students suffering from anxiety.

Parents/Adults/Primary Caretakers/Educators.

The idea that parents, adults, primary caretakers, and educators can trigger anxiety in children is unsettling. With all that they do to help students, it's striking to find that certain ways that adults interact with children can trigger feelings of anxiety in a child. When a child is deeply experiencing anxiety they can start to freeze, and feel like they’re out of control. Oftentimes adults around them will ask them to comply with their directives, but the child will refuse or act as if they haven’t heard. This often sends the adult to the next level (“If you don’t do this, I will…”), this time with more threat. This can make the child feel even more anxious, threatened, and out of control. This sort of interaction happens often in the classroom. Especially when the teacher themselves feels like the class is getting “out of control”. These attempts for immediate compliance are leaving our anxious children feeling more anxious, threatened, and in extreme cases terrorized (Perry et al., 1995). Perry (1995) discusses the irony of the way adult brains perceive resilience in children. He explains that adults default to presuming a child has the most

resilience when they are young, but actually a human is most vulnerable to the effects of trauma during infancy and childhood. What is true is the opposite of what most adults intuitively understand. Patience as educators, in understanding what is really going on with a child in terms of their anxious brain, is so critical. It's one thing to understand that a human is most vulnerable during childhood, but to put that knowledge into practice is another. Parents, adults, caretakers, and educators can cause anxiety, and exacerbate it if it already exists.What's more is that some children are more likely to develop anxiety when their own parents have anxiety or depression according Mayo Clinic Staff (2018). The cause of anxiety for children can quite literally be vicarious exposure. Simply living and being around someone else that suffers from anxiety can cause the disorder. Especially in children as their brains are malleable and plastic, and easily shaped by their environment. If loving adults can have such a profound impact on a child then so too can a traumatic event.

Trauma.

We understand that childhood trauma can profoundly impact the emotional, behavioral, cognitive, social and physical functioning of children (Perry, 1995). A traumatic event can shape a student's brain and manifest as anxiety. According to the Mayo Clinic Staff (2018), kids who grow up getting abused or traumatized are at high risk of developing an anxiety disorder later in life. Trauma is a contributor to whether or not a child will experience anxiety in school. Although we don't fully understand why people experience anxiety disorders, we do understand that genetics and life experiences play a part. If children are exposed to traumatic experiences this sort of exposure greatly increases their chances of having anxiety at school. Traumatic

childhood experiences could be: sexual or physical abuse, a natural disaster, car crashes, war, witnessing a death, murder or suicide, kidnapping, rape, shootings, incest, fires, severe neglect, hostage situations, or violence in the home (Casa Palmera Staff, 2012). All of these traumatic experiences can lead to changes in the brain which lead to anxiety. This is confirmed by Benson et al. (2000), who share that repeated exposure to violence can lead to the development of psychological problems such as depression and posttraumatic stress disorder. To get a picture of how many students have experienced a traumatic event, the Centers for Disease Control and Prevention (2020) says 35% of children have experienced more than one type of traumatic event. This prevalence of trauma in students' lives helps us to understand how malleable children's brains are when they're exposed. Just as a negative encounter can change the plasticity of a child's brain so too can positive empathetic redirections.

Experiences/Life Events.

According to the ADAA (2020), the arrival of anxiety disorders is complex. Risk factors include genetics, brain chemistry, personality, and life events. The ADAA shares that anxiety disorders are not solely characterized by genetics and inheritance, but also a person's experiences. Stressful events such as starting school, moving, or losing a grandparent can trigger the onset of an anxiety disorder (ADAA, 2018). However, anxiety disorders, as believed by experts, are often caused by a combination of factors, and stress alone does not cause an anxiety disorder. Anxiety does not limit itself to lack of sleep or childhood trauma. Pretty much any stressful or new situation can be a trigger for a child. The ADAA also adheres to the idea that anxiety is hereditary, and can be passed down from generation to generation. However, not

everyone who suffers passes it onto their children. Life events and experiences are certainly going to shape the number of anxious students. The conditions that kids are growing up in today make for an environment of fear. It's clear that more kids are being identified as struggling with serious anxiety, because they are growing up in an environment that is volatile where they must practice lockdowns, environmental degradation, social injustice, economic distress, and political corruption. Our children are growing up in an environment that anticipates catastrophe (Nutt, 2018). Volatile environments cause anxiety, and these turbulent environments exist for kids in real life and in their virtual worlds.

Human Connection and Social Media.

According to Lucas-Thompson et al. (2019), mobile phones are being used by 78% of teens, and most of them use text messaging. In fact, on average 60 messages are sent and/or received per day, making mobile technology an integral part of an adolescents' life. Anxiety in children can be linked to their lack of connection or perceived lack of connection to their friends, family, or teachers. Students with anxiety often have a circulating idea in their minds that no one likes them, their family doesn't love them, or they don't have friends. Illiuk and Chorney (2017) illuminate this distorted reality amongst adolescents on social media explaining that anxiety is often the product of teens feeling inadequate, unconnected, or out of control.

In our fast paced world where more and more students are dependent on their social interactions that occur in the digital realm these emotions can be very confusing and sometimes misleading, which may lead to feelings of disconnect. Students are striving for more and more "likes" in their digital world which leaves them feeling inadequate if they don't get enough. They

are putting weight on interactions that are not true meaningful human connections. These digital interactions provide students with a quick rush of dopamine to their brains which tells them, I'm liked, and I'm validated. However, just as quickly as the rush of dopamine hits they are left feeling discontent, without the benefits of true human connection.

There is growing concern for how social media influences student anxiety. Researchers are starting to put together a scale to assess social anxiety for social media users. Social media use is ubiquitous and it's starting to impact mental health, psychological adjustment, and quality of life (Alkis, 2017). Fulweiler & John (2018) propose causes for anxiety disorders as: pressure to succeed academically, insecurities about the mind and body, bullying (particularly online), and peer judgement on social media. All of these factors are contributors to the rise of juvenile anxiety, but they pay particular mention to cyber-bullying and peer judgement on social media sites. There is a clear association between the two experiences, anxiety and the digital world. Damico (2018) warns of the danger that social media causes for young people. He explains that the danger in social media is not the sole contributor to anxiety-producing overstimulation. Antisocial behavior brought on by social media use also contributes to the anxiety-producing overstimulation. How ironic that a tool designed to bring people together has now become the antithesis of its original design. Digital platforms also make it very easy for young people to speak their minds freely with little consequence especially if it is cruel and mean. This leads to the next contributor of the anxious child, bullying.

Bullying.

Using electronic means to bully is becoming more prevalent. The digital world lends itself to anonymity and hard to trace behavior that leads to little or no consequences from adults. This lack of connection is visible through the current levels of cyber-bullying online. People can hide behind their screens and make rude or disrespectful comments without feeling uncomfortable. People can say things they would never say to someone in real life. Face to face connection typically deters people, and makes them reconsider their words (Illiuk & Chorney, 2017). We know that the inconspicuous culture of bullying online is causing real hurt and real anxiety for students. Long (2012) says, children that are bullied are more likely to be anxious and depressed. Bullied youth often have low self esteem, feel unwell, and think about suicide. When students are bullied they become anxious.

Sources of Teacher Anxiety

Teachers too, hold an inherently stressful position. According to Ferguson et al. (2011), workload, student behaviour, and employment conditions were significant predictors of anxiety. The aforementioned origins of anxiety, and vicarious trauma will be the focus for this section.

Workload.

Scouring through the literature on teacher anxiety you'll find that the most cited ongoing stressor for teachers is excessive workload (Mahan et al., 2010). Workload is consistently listed as one of the top contributing factors. It is no question that teachers are asked to do more work then there are hours in the day. Teachers are known to put in many hours before or after school

grading papers, making phone calls to parents, and prepping for class. The 2016 Teacher Workload Survey from the UK asked teachers to self report the number of hours they worked per week. Higton et al. (2017) found that primary classroom teachers are working on average 54.4 hours a week and secondary teachers reported an average of 60. Teachers reported working almost 17 hours per week outside of school hours What's more is that teachers are clearly feeling it and recognizing it as a problem. The majority of respondents to the survey (93%) believed that teacher workload was a fairly serious problem, and over half (52%) said it was a very serious problem. A significant precursor to anxiety is the chronic feeling that there will always be work to do, and not enough time to complete it.

Researchers are recognizing that excessive workload is contributing to teacher anxiety. Oberle (2016) notices how unfortunate it is that heavy workloads and lack of support have become such a common problem in public education. These conditions don't leave teachers in a state of calm, or in any condition to form close relationships with students, but rather in a state of anxiety. Teachers don't have enough time embedded in their work day to get through all there is to do. They protest that there is a severe lack of time for grading, and they're right. In the book, *Where Teachers Thrive*, Susan Johnson (2019) researched 14 schools with differing required work hours for teachers. She found that it didn't matter how long their workday was, the majority of teachers reported that they didn't have enough time to complete their tasks. Work responsibilities like grading seemed to always fall into out-of-school hours.

Sauter et al. (1999) mention that stressors at work include a demanding workload, decreased autonomy, and lack of support, all which lead to negative mental health diagnoses like

depression and anxiety. The demands of the job, often juggled with family life, increase anxiety and decrease affinity for the profession. New teachers especially feel the pressures of the excessive workload. According to Jones-Rincon and Howard (2018), teachers who have less experience teaching are more likely to meet the criteria for anxiety disorder. The high amounts of work stressors and burnout contribute to rates of GAD and other psychological issues. The level of skill and workload expectations are the same for novice teachers as they are for more experienced teachers. These high expectations for new teachers go to show why the burnout rate is so high for teachers in their first five years of the profession. According to Foster (2019), retention for qualified new teachers is low, one third of new teachers leave in the first five years. The demands continue to get piled on with little additional support. Some teachers need additional time and support, especially new teachers or teachers who teach students with special learning needs. Grievances reported by teachers are simply that there is too much work, and the workload continues to increase (Ferguson, 2011).

The mounting demands for teachers and the lack of discussion or implementation of plans for the mental health of teachers is a bubble bound to burst. Schonert-Reichl & Roeser (2016) understand that with all the stressors teachers deal with, compounded by the lack of support, there is no question why teachers consequently are ailed with physiological, emotional, and behavioral manifestations of stress. They are silently protesting by leaving the profession altogether.

We're very intent on caring for the social and emotional needs of our students, so much so that there is little effort and energy put towards teacher wellbeing. This concept is recognized

by Seton (2019) who agrees with the notion that teacher mental health is often neglected, but is vital to safe and healthy students and schools.Henry Seton, a long time high school teacher writes about safeguarding the mental health of teachers. Seton (2019) expresses unequivocally that teachers are highly in tune with the social-emotional wellbeing of their students. They are trained to look for signs of trauma, anxiety, bullying, or microaggressions. Yet, they are heedless to the enormous lurking threat to themselves: their own mental health. Workload is a clear contributor to teacher anxiety, with research still in its infancy to support its immense threat.

Student Behavior.

Managing student behavior is a complex task that gets better with years of experience in the classroom. Yet student behavior, even for veteran educators, is a major contributor to teacher anxiety. According to Ferguson et al. (2011) the following behavior is especially anxiety producing: poorly motivated students, disruptive students, and students' negative attitudes toward work. Often student behaviour feels unmanageable, especially for new teachers. New teachers that lack practice in the classroom find the complex relationships between managing their classroom, student behavior, and academic tasks to be difficult. Teachers often misinterpret the severity of their student behavior, which causes increases in anxiety (Prilleltensky, 2016). Often student behaviour feels unmanageable especially for new teachers.] Anxiety typically happens when the teacher feels like they don't have control over the situation, where it's assessed as 'potentially threatening' (Frenzel et al., 2016). Poor student behavior has the potential to leave teachers feeling threatened and the classroom feeling out of control. The loss of control is what creates anxiety for teachers.

Chang (2013) investigated how teachers regulate their emotions when they're facing classroom management challenges, and 2,710 randomly selected teachers were contacted with 717 participating in a self reporting survey. Their emotional regulation was measured using a 10 item emotion regulation scale. The higher the intensity of the emotion the teacher experienced during the reported incident, the higher the level of overall job burnout that the teacher reported which resulted in evidence that supports episodic unpleasant emotion causes teacher burnout.

Some research suggests that poor student behavior is incited by teacher anxiety and burnout. McLean et al. (2019) note that when teachers are feeling burnt out and their efficacy is low, poor student behavior starts to ramp up. Thus, there is a large incentive to invest in the cyclical correlation of teacher anxiety and student behavior. Addressing teacher anxiety and decreasing the negative psychological distress may have a positive and direct effect on student behavior. The cyclical nature of this relationship is echoed by Hastings and Bham (2003) who mention that difficult student behavior and teachers that lack efficacy in their classroom management skills can contribute to teacher burnout, but the reverse relationship is true too. Research from Jennings (2016) reiterates the urgency of the problem, teacher stress. Teacher stress and anxiety is taking an emotional and psychological toll on school staff and it's ultimately impacting student behavior and achievement. It's clear that teacher anxiety and student behavior are intertwined with each affecting the other.

Employment Conditions.

Economic anxiety.

Student behavior contributes to the climate of the classroom, which leads to the next cause of teacher anxiety, employment conditions. Teachers' work conditions play a large role in their job satisfaction. Lack of job satisfaction leads to teacher anxiety. Employment conditions such as time demands, financial instability, job security, poor promotion opportunities, lack of professional development, unpredictable environments, unhealthy technological environments, and lack of social recognition are the most important determinants of anxiety in teachers (Coates & Thoreson, 1976, Ferguson et al., 2011). It's long known that teachers don't make a robust income, and according to Telles et al. (2018) a stressor that contributes to high levels of stress for teachers is inadequate pay. Teachers find that inadequate pay elicits anxiety, demonstrating that financial security is important for teachers to feel mentally stable. Dizon-Ross et al. (2019) utilized the General Social Survey which was given to track national attitudes and beliefs after the great recession. They found that the percentage of teachers who believed their financial situation was improving was between 27% and 38% compared to respondents that were not teachers was 37% to 53% from 2010 to 2016. The data suggests that the financial landscape for teachers does not keep pace with other middle-income professions.This financial problem has been a long standing trend that can be seen in a review of educational research from the National Education Association (NEA), Gray and Taie (2015) reports inadequate salary as a significant source of anxiety from experienced teachers. In fact, teachers are earning 19% less than similarly

skilled and college educated professionals. The penalty for being a teacher has increased in the past 20 years from 2% in 1994 to 19% in 2017 (NEA, 2018). The wage stagnation and pay gap between other educated professionals is a key reason for colossal attrition rates. Dison-Ross et al. (2019) affirms that economic anxiety predicted teachers' decision to leave the profession. Dison-Ross et al. 's findings are unsurprising, because according to the National Center for Educational Statistics (NCES, 2015) 17% of teachers leave the profession within the first five years. The high attrition rate occurring due to teacher burnout has, according to Ingersoll and Merrill (2013), implications for pension systems. Very few teachers are staying in the system long enough to gain the benefits of a pension. In some states it can take 10 years for a teacher to become fully eligible to receive funds from their employers to their pension plans. Some school system's pension plans are not increasing evenly with each year of classroom experience, and payouts are small until two or three decades of teaching experience has been accumulated. This ultimately means that fewer teachers are withdrawing from pension systems, but more of the teaching force is paying in. High attrition rates and the teaching force becoming younger and less expensive are contributing to the problem of the current retirement systems systematically disadvantaging young teachers, and preventing schools distracts from compensating high-quality teachers.

Poor Promotion Opportunities.

Next, poor promotion opportunities can cause teacher anxiety. Teachers often feel like they are stuck, that there aren't opportunities for advancement in the profession. Ferguson et al. (2011) showed that poor promotion opportunities is one of the highest statistically significant

predictors of anxiety in teachers. Teacher roles or assignments are often ambiguous. Causes of stress are often from the ambiguities and conflicts of the teaching role resulting from its complexity and from the administration's conflicting demands (Papastylianou et al., 2009). The ambiguity causes anxiety, especially when the assignments include administrative tasks. It's clear that teachers need to be stimulated, pushed to grow and given more responsibility while being financially compensated and recognized. When these things are missing from the job, teachers get anxious.

Unpredictability.

Oftentimes teachers may find the classroom to be an unpredictable environment, in which they have little control. Events that are uncontrollable cause anxiety. Ferguson et al., (2011) explain that teachers feel distress when negative events occur, which they have little or no control over. These events tend to happen quite often for teachers. Teachers are often working under conditions where it's difficult to discipline students in the interest of diminishing the school to prison pipeline. This is especially true for schools in urban and low income neighborhoods. The result is an out of control classroom where learning doesn't occur. In addition, tech consumed children and substitute shortages can lead to the unpredictability of the job. When school policies leave teachers with little control over student cell phone use and addiction, or the teacher shortage forces teachers to pick up extra classes and give up their preparation time it leads to working conditions that cause anxiety.

Vicarious Trauma.

Last, vicarious trauma exacerbates teacher anxiety. Handling intense situations with students can prove especially difficult when dealing with students that have adverse childhood experiences (ACEs). According to The CDC-Kaiser Permanente ACE study, Feletti et al. (1999) report that two thirds of respondents have experienced more than one type of traumatic event. These ACEs can have impacts that extend far beyond childhood, including higher risks for alcoholism, liver disease, suicide, and other health problems later in life. Students with ACES are coming into classrooms unequipped to handle their emotions. The good news is some students feel safe and comfortable disclosing information to their teachers. Teachers are sometimes the sole stable adult in these children's lives, and they are increasingly the front line for students disclosing intense personal information. Teachers are bearing the burden of these intense emotions and stories of their students. Teachers carry around stress from their students, and many of them are uneducated on how to cope with the stress or even pinpoint where it's coming from or give it a name. To explain further and provide an account of one teacher's experience Minero (2017) shares that the trauma students experience can take a toll physically and emotionally on their teachers. A drama teacher by the name of Alysia Ferguson Garcia wasn't expecting to hear intense stories from her students. She shares,

> "When you're learning to be a teacher, you think it's just about lesson plans, curriculum, and seating charts. I was blindsided by the emotional aspect of teaching- I didn't know how to handle it. I was hurt by my students' pain, and it was hard for me to leave that behind when I went home" (Garcia as cited in Minero, 2017, p. 1).

Students' stories of abuse, hunger, and suicide are internalized by teachers, and are not easily forgotten. There is a term for this kind of emotional bearing, vicarious trauma. Defined by the American Counseling Association (ACA, 2011), "Vicarious trauma is the emotional residue of exposure that counselors (and teachers) have from working with people as they are hearing their trauma stories and become witnesses to the pain, fear, and terror that trauma survivors have endured" (p.1). Increasingly, the residual emotions students leave behind are left on the shoulders of teachers rather than counselors. This is in large part due to student to counselor ratios in the United States. The American School Counselor Association (ASCA), compiles a report each year on student-to-school counselor ratios, based on data from the U.S. Department of Education's National Center for Education Statistics. According to the ASCA (2020), the ratio of students to school counselors in the 2018-2019 school year was 430 to 1. The ASCA recommends a ratio of 250-to-1. Although it's good that students feel comfortable disclosing information to their teachers and counselors, there are simply not enough counselors, and some teachers are not equipped with the skills necessary to handle the stressors of students disclosing personal information.

Impact of Anxiety on Student Outcomes

Given what we now know about the causes of student anxiety it's only natural to investigate next what impact anxiety has on students in the classroom. What are the symptoms and effects of anxiety that students experience in the classroom? This section addresses the

following: the effects of anxiety on social and emotional wellness, physiological wellness, and academic performance.

Social- Emotional Wellness

When high levels of anxiety are sustained for long periods of time it affects the ability to adapt, and function normally, in ways that most others can. In fact these maladaptive qualities can lead to many negative characteristics. Students can become dependent, carry a low self-concept, be less flexible and highly rigid, behave aggressively, be defensive, carry guilt, and have disturbed relationships with their peers, teachers, and parents (Long, 2012). All of these are incredibly detrimental characteristics to the success of students. Long (2012) helps us to understand that the social and emotional wellness of a student is interrupted by anxiety disorders. When relationships begin to suffer, with peers, teachers, and parents, the student starts to feel isolated and altogether unworthy and worthless. The mind has no ability to function optimally when these feelings are present. The neurophysiology brought on by the mental illness severely hinders students' ability to learn and succeed in school. Another impact is covered in the work of Hambour et al. (2019), students that suffer from anxiety, in particular social anxiety, have less of an ability to regulate their emotions. This phenomenon is referred to as dysregulation, and impacts how intensely, when, and which emotions are felt. Dysregulation can cause a student to struggle with controlling impulses, which can impact the flow of a classroom for them and other students around them. Students that struggle with emotional dysregulation also have trouble staying focused on their goals and have decreased clarity. Without being able to focus and stick

to goals, students with anxiety can struggle meeting educational standards and accomplishing tasks given to them by their teachers.

Physiological Wellness

It's long known that anxiety symptoms manifest in very physical ways. Students with anxiety can suffer from headaches, nausea, stomachaches, vomiting, increased heart rate, sweaty palms, tense muscles, and increased respirations (Mayo Clinic Staff, 2018). According to Long (2012), the fight or flight response is initiated when a child is faced with a stressful situation. Catecholamine hormones are released from adrenal glands which turn on the autonomic nervous system. This causes increases in blood pressure, heart rate, alertness, and muscle tension, but other systems in the body, like digestion and elimination, are suppressed. When a student is feeling anxious their whole body goes into a primitive defensive state. Their reptilian brain, the amygdala, is operating and the sympathetic nervous system is stimulating an increase in heart and breathing rates. All energy is going toward keeping the body alert, on guard, for the perceived threat. Over time this stress on the heart can be extremely detrimental. Tacón (2003) looked at the effects that mindfulness and meditation have on anxiety and heart disease. It was shown that people with anxiety have reduced heart rate variability that creates an increased risk for hypertension, arrhythmias, and vagal tone, all of which have been linked to cardiac mortality (Tacón, 2003). Anxiety can be extremely hard on the heart. Students that suffer from this extreme physical stress can come home from school feeling extremely exhausted, as if they've just been running all day. It's true that the same physical sensations are felt for a student experiencing anxiety as they are for a student undergoing intense physical activity. The GI tract

can also become seriously compromised in students with anxiety as blood flow is diverted from the abdominal organs to the brain. Some people can have such exacerbated GI symptoms that it can lead to chronic conditions like irritable bowel syndrome (IBS). The nerves that help regulate excretion become hypersensitive and can lead to symptoms such as: abdominal pain, bloating, diarrhea, and constipation (Harvard Women's Health Watch, 2008). Physiological stress on the body can thus manifest in poor academic performance because all of these symptoms can cause a student to end up with frequent visits to the nurse instead of being in the classroom. These types of absences leave the student with extra academic challenges. It is simply true that when the body is ailing so will the mind, which leads us to the next topic of student performance.

Academic Performance

While students are feeling physical symptoms from their anxiety, these physical symptoms can lead to detrimental performance in the classroom. Their academic performance is hindered as is described by Carsley (2018) who reports that students suffering from test anxiety often have lower standardized achievement scores, and course grades. Low self esteem and negative self evaluation is often coupled with test anxiety as well, which often prevent students from being motivated, and in the worst cases it can even lead to school dropout. To find out if academic performance is reduced in young people with high levels of anxiety, Owens et al. (2012) assessed the relationship between negative affect, worry, working memory, and academic performance of 12-13 year olds by using self-report questionnaires, school-administered academic test data, and computerized working-memory tasks. What they found was that higher levels of anxiety and depression were linked to lower academic performance. Anxiety and

depression were found to interfere with working memory. Students who struggle with anxiety often worry, especially on tests, and this leads to lower test performance, and the inability to think clearly while working on complex problems. At the college level there is evidence to support that anxiety and achievement go hand in hand as well. According to Barrows et al. (2013), a relationship exists between self-efficacy, test anxiety, and single test grades. As test anxiety increases, academic success flounders. This study allowed researchers to obtain students' single test grades after an exam in order to determine the correlation between anxiety and test scores. The students were given a pre and post-test questionnaire assessing anxiety. The questionnaire established a clear correlation between high test anxiety and low academic performance on the test grade. It's no wonder that when a student doubts themselves they become fixated on their poor grades and cannot focus on academia. The results of the study indicate that anxiety will have a detrimental effect on student performance, particularly in testing situations. Their grades are going to be lower and their standardized test scores are going to be lower. Students are going to struggle with learning and retaining new material as their brains are not operating to optimize retention but rather operating to "fight or flight".

Impact of Anxiety on Teacher Outcomes

The effects of teacher anxiety are far reaching. It's clear that teacher anxiety can have an impact on the classroom and the students in that classroom. By identifying and reducing sources of teacher anxiety, the entire educational environment will be improved. We'll take a look at the effects of anxiety on teacher wellness, teacher burnout, and their students.

Teacher Wellness

Teachers with anxiety can experience determinants in their overall wellness and physiology. For example, Tobin et al. (2016) explain that anxiety is associated with the body's monitoring system. In high-anxiety events heart rate increases, blood oxygen levels decrease, and teachers' prosody would proceed with ineffective and confusing patterns, including intonation, and pace of speaking and pausing. Anxious situations lead to control of the unmyelinated vagus nerve causing irregularities in the expression of emotion. Teachers can physiologically internalize their anxiety, and it can manifest in their teaching, especially in their relationships with students. The anxiety that teachers carry can start to build and when left unattended can have negative consequences. According to Singh et al. (2016), teachers with stress and anxiety that aren't tended to have less empathy, react faster, and lose creativity. Their ability to regulate their emotions starts to wither. Emotional regulation allows for calm within the storm that healthy teachers embody, and students depend on. A short fuse is a symptom of anxiety, and it is not good for teachers or for their students.

Teacher Attrition

The impact that anxiety is having on teachers' ability to stay in the profession for the duration of their careers is significant. Anxious teachers are leaving the profession early, and the link between anxiety and burnout is clear. Cooper Gibson Research (2018) demonstrates qualitative research carried out by the Department of Education. Teachers professed insomnia, panic attacks and anxiety contributed to their decision to leave the teaching profession. Teaching

is emotionally taxing, requiring a high amount of emotional labor. This high amount of emotional labor becomes extremely stressful which leads to anxiety, then teacher burnout, and ultimately teachers leaving the profession altogether. According to the National Association of Schoolmasters Union of Women Teachers (NASUWT, 2013) teachers share that the current teaching environment breeds high levels of stress that lead to work-related fatigue, depression and anxiety, cynicism and low self-efficacy. Most teachers have a strong desire to be effective teachers when they enter the profession. In fact, teacher self-efficacy is often considered a protective factor against the effects of burnout. When it starts to break down due to stress, teachers find little motivation to stay in the field.

Over the last 30 years teachers' attrition rates have increased to the point where most teachers leave the job before making it a career. The potential negative and costly effects of teacher burnout and high attrition are motivation to identify effective interventions to support teachers' mental health, keep them healthy, and prevent them from leaving the profession.

Students

When teachers feel anxious, their body language and non-verbal communication can signal stress to students. It can change the dynamic in the classroom. It is acknowledged and continually being investigated that teacher anxiety can induce student anxiety. In a study by Oberle and Schonert-Reichl (2016), cortisol activity in elementary students was measured in accordance with teacher burnout rates. They concluded that cortisol activity was an indicator of stress regulation in students and that it was linked with teacher's stressful occupational

experiences. When teacher burnout was considered in relation to students' cortisol levels it was found that classroom-specific variability was reduced by more than 50%, from 10% to 4.6%. This finding is new and important as it suggests that teachers' anxiety can and does affect students' physiology. Oberle and Schonert-Reichl (2016) go on to mention that, higher levels of occupational stress in classroom teachers transfer to students in the classroom. This explanation substantiates stress contagion theory, which says that within a shared social setting stress can cross over from person to person (Milkie & Warner, 2011).

Often teachers will react out of an innate fight or flight response. They act toward students with the intent to discipline, that only serves to increase tension between teacher and student. This tension and stress produces anxiety. According to Nagel and Brown (2003), if teachers are "stressed out" they stress out their students who then behave differently, and oftentimes worse. There is a positive feedback relationship between teacher anxiety and student anxiety. There exists a circle of stress, and once it's initiated it's difficult to break. Nagel and Brown (2003) remind us that anxiety can become a vicious cycle. One that compounds and can get worse with the conditions of our environment. It should also be noted that because the nature of teacher anxiety affecting students is cyclical, and it can go both ways. Student anxiety can affect teachers too, as aforementioned in the section on vicarious trauma. This is echoed by Oberle and Schonert-Reichl (2016) who demonstrate that teacher anxiety is caused by poor student behavior and a lack of efficacy in classroom management.

Classrooms with high numbers of students with behavior problems can cause teacher stress and anxiety. The idea being that poor student behavior could cause stress and anxiety for

the teacher that may lead to teacher burnout. There are clear physiological effects on students who are subject to an anxious teacher's classroom. Teachers can absorb the feelings and struggles of their students as if they were their own (Oberle & Schonert-Reichl, 2016). The importance of analyzing the topic of teacher anxiety cannot be understated. If its effects are not understood it will continue to have far reaching consequences for teachers and students alike.

Understanding Mindfulness Practices in the Classroom

The research used to help understand the sources and impacts of student and teacher anxiety culminates in the connection to mindfulness practices in the classroom. Covering the sources and impacts of anxiety provides a better scope for understanding how mindfulness practices in the classroom affect students and teachers. Mindfulness practices are now being used in educational settings in addition to hospitals, clinics, and workplaces. They've been studied extensively and have been said to provide benefits proven by science. This investigation covers an overview of mindfulness, the effects of mindfulness studied in a clinical setting, mindfulness in education, resistance to and criticism of mindfulness in school, and the effects of increased mindfulness practices in school.

Overview of Mindfulness

While mindfulness has been practiced for thousands of years in eastern philosophy and religion, it has recently been adopted in western secular culture by Jon Kabat-Zinn, Mark Williams, John Teaasdale, and Zindel Seagal. Kabat-Zinn is credited as the founding father of mindfulness-based stress reduction (MBSR). He brought mindfulness practices to the

mainstream of medicine and society and his research has provided evidence for MBSR effectiveness in helping patients struggling with anxiety. His work has paved the way for mindfulness programs in the classroom. In the 1990's Mark Williams, John Teasdale, and Zindel Seagal collaborated on the development of Mindfulness Based Cognitive Therapy (MBCT), a derivative of MBSR for people suffering from anxiety and depression, that became a clinically accepted practice for treating depression in the UK.

Through the work of these researchers in the last decade, strides have been made to studying mindfulness empirically. The first valid and reliable measuring tool for mindfulness is the Mindful Attention Awareness Scale (MAAS Black, 2009). The creation of these measuring tools has helped researchers to study mindfulness scientifically. The MAAS scale is one of many others: Freiburg Mindfulness Inventory (FMI) , Cognitive and Affective Mindfulness Scale Revised (CAMS-R), Experiences Questionnaire (EQ Park, Reilly-Spong, & Gross, 2013), Kentucky Inventory of Mindfulness Skills (KIMS), Toronto Mindfulness Scale (TMS), Cognitive and Affective Mindfulness Scale (CAMS), Five Facet Mindfulness Questionnaire (FFMQ), Freiburg Mindfulness Inventory (FMI), and the Philadelphia Mindfulness Scale (PHLMS) (Black, 2009) that have helped contribute to measuring mindfulness properly. We can now measure and seek to understand mindfulness as a dispositional characteristic, an outcome, and as a practice. The efforts in the last 40 years have led to mindfulness being a promising area of scientific research (Black, 2009).

Effects of Mindfulness Studied in Clinical Settings

Mindfulness in the clinical setting has proven successful for patients suffering from GAD and other anxiety disorders. A look at these clinical studies helps to establish solid ground for the validity of implementing similar practices in the classroom. One of the very first promising studies was a three year clinical study on the implications of MBSR for 22 medical patients diagnosed with anxiety disorders. The patients were exposed to an 8 week outpatient physician-referred group-stress reduction intervention that was based on mindfulness meditation. They were followed up with three years after the intervention to investigate the long-term effectiveness. Miller, Fletcher, and Kabat-Zinn (1995) found that after the intervention patients showed statistically significant reductions in anxiety and panic. The intervention was focused on prevention, highlighting what is "right" with people rather than what is "wrong" . It encouraged individuals to develop and utilize their inner mindfulness resources in times of distress, with great promise for MBSR being a low-cost, effective treatment for anxiety.

Another study was conducted with 27 adult survivors of childhood sexual abuse in an eight-week MBSR program, with efforts to reduce symptoms of depression, PTSD, and anxiety among adult survivors. The MBSR intervention used was developed at the University of Massachusetts Medical School. Anxiety was measured with the The Brief Symptom Inventory (BSI), and MAAS was used to measure mindfulness. Kimbrough et al. (2010) found that at the end of the eight-week program there was a 47% reduction in anxiety that was sustained for 24-weeks, and the MAAS score went up 33%, a significant improvement from baseline. The results coincide with many previous MBSR studies in which depressive symptoms were

significantly reduced. MBSR demonstrates an intervention that is both effective with cost and in reducing symptoms of anxiety (Kimbrough et al., 2010).

One clinical study using MBSR in patients with chronic illness chose MBSR for its versatility in targeting both physical and mental health outcomes for patients. This study reviewed Mindfulness-Based Interventions (MBIs) in clinical pediatric samples living with chronic illness. Kohut et al. (2017) found that overall MBIs in the study demonstrated improvements in emotional outcomes such as anxiety among adolescents with chronic illness, although, attendance was often reported as low and some patients suffering from chronic illness found the MBIs to be infeasible due to travel limitations and group therapy formats. Non-clinical samples may not be experiencing the barriers to feasibility because MBIs are often done in schools during school hours. Schools are stable environments in which many variables can be controlled, which offers an optimal setting for MBIs.

Mindfulness in Educational Settings

A first of its kind study by MIT and Harvard University investigated the impact of mindfulness on the stress response of middle-school children by using brain imaging after exposure to either a mindfulness training group or a coding training group. The students exposed to the mindfulness practices showed a reduction in their amygdala responses to stressful stimuli. This is significant because many students that suffer from anxiety have more reactivity in their amygdala (Bauer et al., 2019). The study provides encouraging mention that mindfulness practices can reverse disadvantageous development of the amygdala. Training in mindfulness can result in less reactivity to negative stimuli. The findings provide promising results that

mindfulness practices can help turn down our primitive reptilian brains and activate our prefrontal lobes in response to stress and anxiety. Bauer et al. (2019) also mention that mindfulness training reduces stress and stimulates positive brain changes in children. These practices can easily be integrated into classroom curriculum. Through the use of brain imaging, this study reveals the first evidence in support of a neurocognitive mechanism for stress and its reduction via mindfulness training. Results from the imaging demonstrate students' brains are changing in response to mindfulness practices. Students' amygdalas in the mindfulness group were not as responsive to stressful situations. In fact according to Bauer et al. (2019), mindfulness training creates a stronger connection between the right amygdala and ventromedial prefrontal cortex during exposure to stress, and these neural connections last after meditation is over. Students are receiving the benefits of mindfulness even after they're done practicing, leaving students with brains that are more optimally suited for dealing with anxiety.

Cunha and Jacinta Pavia (2012) investigated how mindfulness might impact test anxiety in adolescents, a clear correlation to mindfulness skills and test anxiety was found. They found that acceptance and mindfulness skills are variables that clearly predict test anxiety. Having low mindfulness skills are associated with greater test anxiety in adolescents. Practicing mindfulness can thus decrease anxiety levels. Cunha & Jacinta Paiva (2012) even found that test anxiety can breed self-hate. They clearly explain that greater test and exam anxiety can lead to greater feelings of inadequacy, feelings of self-disgust, social anxiety, decreased capacity to be mindful and compassionate. Cunha & Jacinta Paiva (2012), show that anxiety and mindfulness have an inverse relationship. When mindfulness increases, anxiety decreases and vice versa. When

students are feeling these intense emotions of self hatred surrounding their academic performance, it's only right to equip them with the skills that help them foster acceptance of self and positive thoughts.

A study with undergraduate students investigating how mindfulness affects anxiety from high-stakes math found that high pressure testing situations increase negative thoughts and induce worry. The increase in worry in turn impacts students' working memory and their ability to recall information on tests (Bellinger et al., 2015). According to Bellinger et al. (2015), mindfulness reduces anxiety and improves high-demand problem accuracy. Mindfulness acts as a buffer to the negative worries and intrusive thoughts that impede upon a students' ability to solve a difficult math problem. This study supports that mindfulness benefits math performance by reducing anxiety. It was even found by Bellinger et al (2015) that better scores on problems taxing working memory were associated with lower anxiety, demonstrating low anxiety led to more success with high-demand problems. Mindfulness practices at the college level were thus proven to be beneficial for optimal brain functions. The reduction in test anxiety and math anxiety that mindfulness brings provides encouraging evidence to support the benefits of mindfulness practices in education.

Carsley and Heath (2018) studied brief mindfulness-based art activities for test anxiety and anxiety reduction were investigated. Subjects were exposed to a mindfulness-based coloring activity to assess the effects on test anxiety. The study used free coloring and mandala coloring sheets to collect data on this method's effectiveness on reducing test anxiety. Anxiety and state mindfulness were measured using ANOVAs, and Preacher and Hays procedure, a statistical

analysis procedure developed by Andrew Hayes Ph.D., was used to perform the meditation analysis. According to Carsley and Heath (2018) the study found that free coloring and coloring mandalas were both effective methods for reducing student test anxiety. The effect of dispositional mindfulness was found to be significantly positive. It's mentioned that it would be helpful for educators to implement coloring activities before a test as the coloring activities showed clear increases in mindfulness and reductions in test anxiety. Not only is coloring a mindfulness exercise that can specifically benefit test anxiety, but these activities can be used whenever anxiety is provoked at school. It's encouraged by Carsley and Heath (2018) for teachers to include mindfulness coloring as a class routine or calming moment, especially considering it can easily be implemented in a large classroom in addition to private sessions with a school psychologist. Not only is this mindfulness activity great for the classroom, but also for counselors and psychologists as well.

Beauchemin et al. (2008) were seeking to understand how mindfulness may affect academic performance in adolescents with learning disabilities (LD). 34 students with LDs, who often experience higher levels of anxiety than the average student, were studied in a 5-week mindfulness meditation intervention. Beauchemin et al. (2008) found that with every measurement participants showed significant improvements. Those who participated in the mindfulness intervention decreased their state and trait anxiety, enhanced their social skills, and improved their academic performance. Both state and trait anxiety were reduced in this study. State anxiety refers to the temporary condition of anxiety, when the person is responding to a perceived threat. Trait anxiety on the other hand is a personality trait/characteristic and not a

temporary feeling like state anxiety. For students with learning disabilities anxiety can be compounded. This study showcases the benefits mindfulness has on these students and their anxiety. Beauchemin et al.'s (2008), findings "show that state and trait anxiety decreased significantly from pretest to posttest with quantitative data showing trait anxiety scores were significantly higher at pretest (M=42.56) compared with posttest (M=39.68)" (p. 41). This data provides strong quantitative data to support that mindfulness practices decrease student anxiety and enhance academic performance.

It is known that anxiety presents with physical symptoms such as increased heart rate, increased breathing rate, sweaty palm, irritated stomach, brain fog, and overall lethargy. What happens to these physiological responses when students undergo mindfulness practices? One study focused on middle-school student responses after being exposed to a relaxation curriculum. Over a three year intervention period, middle school students were exposed to a relaxation response curriculum. Measurements of GPA, work habits, cooperation and attendance were used. Benson et al., (2000) found that students' physiological response to stress changed. Students experienced a decrease in metabolism, blood pressure, rate of breathing , and brain waves. Ultimately the Benson et al. (2000) acknowledge that there are undeniable bodily changes that occur when the body is relaxed versus when it is anxious. These physiological changes allow for students' health to be regulated and for students to be well adapted for optimal learning to occur.

Moreover, interventions may not have to be as long as traditional MBSR programs to produce tangible benefits. Shearer et al. (2016) studied 74 college age participants that were randomly assigned to groups, one a no-treatment control, and the treatment group completing 4

weekly sessions an hour long. They found that as little as 4 weeks of mindfulness practice produced detectable physiological benefits. For students without a lot of time or money, mindfulness meditation could be a simple, cost-effective stress-management technique that does not require copious amounts of time to practice. According to Wong (2018), the reality is that yoga in school is focused on physical fitness and relaxation. There is immense support and rationale for secular mindfulness practices being taught in educational settings. Supporters base their rationale of evidence from cognitive and affective neuroscience and the social and behavioral sciences. (Jennings, 2016).

Resistance to and Criticism of Mindfulness in School

Despite the success of mindfulness training in education, not everyone thinks mindfulness belongs in schools. There is a general suspicion of mindfulness practices in education. Pointing out a few of the critiques helps us to understand the opposition, and why some feel there is call for alarm. Critics of mindfulness in education, but more specifically in public education, argue that it is teaching Buddhism in the classroom and a violation of civil rights and does not separate the church from the state. Other opponents argue there is bias in the research, and a lack of well designed trials. This section considers various sides of the debate and concludes with supporting evidence for the benefits of mindfulness in the classroom.

Separation of Church and State.

Some argue that mindfulness practices in school violate the separation of church and state. Although mindfulness-based practices have been secularized, in large part due to Jon

Kabat-Zinn and his work with chronic pain patients, meditation's ancient origins are rooted in Buddhism. As demonstrated by Knobolock (2017), many people opposing secular mindfulness practices think it's a play on semantics. Arguing that it all boils down to a simple change of vocabulary. However, even though controversy exists over whether or not to include mindfulness in public school, the controversy provides an opportunity to critically discuss democratic schooling in a culturally pluralistic society (Douglass, 2010). Educators that facilitate and practice mindfulness at school acknowledge that the general practices of mindfulness come from Buddhism. They understand the origins, but most don't identify with the religion themselves. What is actually being taught is focus, physiological resilience, and breath for stress reduction. Mindfulness is a secular teaching that can be taught without involving concepts of Buddhism. Dobkin (2016), encourages educators to emphasize that although mindfulness has been well described and practices in Buddhist settings, many of mindfulness attributes have also been well described in all wisdom traditions and cultures. She goes on to say, "There is nothing particularly eastern about it" (p.29).

Religious or spiritual concerns about mindfulness due exist, especially given the increasing association with celebrities, and fad culture. Despite those that find mindfulness to be superficial or hokey. There are many leaders of the secular mindfulness movement that stand firm on their defense that mindfulness can be practiced in a secular manner with the benefits being too great and far reaching to subscribe to the pursuit.

Bias in the Research.

In recent years mindfulness practices in the classroom have piqued the interest of educators and educational researchers, with the goal of advancing understanding of mindfulness-based interventions in K-12 education. That said, some argue those that are invested in advancing understanding of mindfulness are also largely biased in favor of mindfulness intervention (Maynard et al., 2017). Maynard et al. (2017), in particular, found this to be problematic. They mention, when authors have a vested allegiance to the intervention the results of the studies demonstrated a more positive effect than studies conducted with authors not vested in the outcomes. There is an awareness of how fast Mindfulness programs in education are moving. School based mindfulness programs are becoming more and more popular. The empirical research proving the benefits is in its infancy, are only just beginning to emerge. That is why it's important to understand that mindfulness is a very new field, and continuing unbiased, rigorous research will be needed and can only lead to the truth of the effectiveness of mindfulness practices in school.

Poorly Designed Trials.

Other opponents argue about the lack of well designed trials. It is true that although many mindfulness-based curriculums have been implemented in the US, very few of them have designed and conducted controlled experiments to support their effectiveness. Many studies are lacking an active control condition to compare the findings of the mindfulness programs to. Maynard et al. (2017) mentions that mindfulness based interventions have been put in place to

help social emotional and academic outcomes, but little effort has been made to examine evidence of MBIs already implemented using rigorous methods. Thus, much of the literature on mindfulness in schools is anecdotal, rather than hard qualitative evidence.

Effects of Increased Mindfulness Practices in School

Benefits for Students.

Scientific evidence suggests that mindfulness interventions have many benefits. Some that are particularly relevant for students are physical well being, emotion regulation, reduced anxiety, improved academic performance, and resilience and coping. This section will take a look at why mindfulness is needed in education and the benefits that students reap when exposed to mindfulness based intervention at school.

When mindfulness is paired with a physical practice like yoga or tai chi it has been known to provide physical benefits to children. In a study by Telles et al. (2013) with 98 students ages 8-13 the experimental group was exposed to yoga while the control group was exposed to routine physical exercise curriculum. Both the control group and the yoga group were assessed using the Eurofit physical fitness test, Stroop color-word task, Battle's self-esteem inventory, and the teachers' rating of the child. According to Telles et al. (2013), yoga exercise improved trunk strength and endurance as well as balance. It's mentioned that practicing yoga influences the physical health of children by increasing their lunch capacity, cardio-respiratory endurance, and their muscle strength. But what's more is that not only does it have tremendous beneficial effects on the body, but also the mind. The cognitive effects that students in the yoga group

demonstrated were significant with major increases in their self-esteem. Knowing that yoga may increase self-esteem helps us to see why it may also help with regulating intense emotions.

Mindfulness practices in schools have been known to improve emotion regulation in students (Flook, 2010). Fifty high-school female participants identified with test anxiety were divided into an experimental 8 week MBSR training intervention and a control group for one study. The participants were evaluated using the Test Anxiety Scale and Cognitive Emotion Regulation Questionnaire. According to Shahidi et al. (2017), the MBSR treatment was found to be effective on measures such as test anxiety and emotion regulation. The study goes on to mention that through the introduction of MBSR to students they ended up adopting the techniques which proved to have a continued effect on students through the follow-up for test anxiety and emotion regulation. Students improved their self-control, self-regulation, and self monitoring.

The prefrontal cortex is responsible for helping to regulate emotions. When the amygdala is firing but the cortex is not communicating or wired to suppress the amygdala, emotions can get out of control. Mindfulness practices have been shown to improve the communication between the amygdala and the cortex and have shown to be associated with more effective emotion regulation. Mindfulness training may increase the ability to sustain self-regulatory neural circuits in the prefrontal cortex (Bauer, 2019; Lutz et al., 2008). The aforementioned studies show immense promise for students struggling with emotional regulation. In fact Shahidi (2017) proposes MBSR interventions to school counselors not only as an intervention to help

students regulate their emotions, but to reduce anxiety and ultimately improve academic achievement too.

One study utilized transcendental meditation (TM) with 10 middle-school participants who had practiced TM for a one year period of time with the goal of systematically understanding the experience of an adolescent who practices TM. Rosaen & Benn (2006) found that seventh graders who had practiced TM for over a year reported more control over their emotions, which included self-reflection and self-control. They had increased restful alertness and reductions in stress. The study suggests meditation may foster improvements in well-being, and if it can do so for regulating emotions it can also do so for decreasing anxiety.

In a study investigating the impact of mindfulness on middle school students. 99 sixth graders were randomly assigned to either a mindfulness group or a coding group. Bauer et al. (2019) found that the group exposed to the mindfulness training had reductions in stress and functional brain changes. Students who have anxiety have been observed with heightened amygdala reactivity. Thus the reductions of amygdala activity in response to negative stimuli are promising for students suffering from mental health disorders like anxiety and depression. The neuroplasticity changes in the brain and the reported reduction in feelings of stress provide epistemological support to implement mindfulness practices in the school curriculum for all children whether or not they have a diagnosis of anxiety. This study goes to show that all students can benefit from mindfulness, not just students with anxiety.

A study by Fulweiler & John (2018) investigated the effects of mindfulness practices on nurse practitioners, they found that mindfulness practices helped reduce, and in some cases,

alleviate anxiety in students. They go on to further explain that cognitive behavioral therapy (CBT) and antidepressants have been the common practice for treating adolescent with anxiety, but there is a need for further research to help highlight the benefits of mindfulness practices as they have potential to be cost effective treatments in an era were health care costs are climbing as well as rates of mental health disorders (Fulweiler & John, 2018). A randomized controlled trial with 20 third grade students who screened positive for symptoms of anxiety were given small-group yoga and mindfulness activities for 8 weeks. According to Bazzano et al. (2018) the data demonstrates that students in the mindfulness intervention group benefited from improvement in psychosocial and emotional quality of life. It's clear that students were decreasing their negative emotional responses, stress, and improving their self esteem due to their mindfulness curriculum which suggests that yoga/mindfulness interventions may improve symptoms of anxiety among elementary students.

Keller et al. (2019) investigated the effects of mindfulness practices on children with learning disabilities was conducted by the University of New Mexico. 20 students grades 2-5 were recruited. All of the participants were tested to collect baseline data on the Dynamic Indicators of Basic Early Literacy Skills (DIBELS), a writing task with the Six Traits Writing Rubric, and a lexical decision task. The intervention was given to participants during the school district's 5-week summer school program. The intervention included three subthemes: HeartMath, academic, and mindfulness strategies. The qualitative results showed that the mindfulness intervention improved literacy, attention skills, the use of metacognitive strategies, positive affect, self-expression, self-awareness, and self-efficacy. It was also shown that the

students physiology was affected in a positive way, their average heart rate declined over the course of the intervention. A low heart rate is associated with calm and attentiveness. The study demonstrates major benefits for elementary students struggling with learning disabilities.

Caballero et al. (2019) investigated the effects of a mindfulness-based intervention on the academic outcomes of middle school students in grades 5-8. Mindfulness was measured using the MAAS, and academic achievement was measured by GPA, and statewide Math and English tests. Caballero et al. (2019) found that greater levels of mindfulness were associated with better academic outcomes for over 2,000 urban U.S students. Mindfulness was associated with current academic performance as well as improved academic performance from the previous year. This research is promising as it suggests that mindfulness-based interventions in the classroom may promote academic achievement in students. Mindfulness helps students to increase their intentional control while learning and while testing, which may be boosting students' academic achievement and helping to curb test anxiety.

Benson et al. (2000) investigated academic performance after exposure to a relaxation response curriculum, that demonstrated that more exposure to the curriculum resulted in students with higher scores in GPA, work habits, and cooperation. The study provides evidence to show that relaxation techniques like mindfulness can help to improve students academic performance.

Rashedi et al. (2019) investigated pre-kindergartners' and kindergartners' experience with yoga, and opted to take a more qualitative approach. The study utilized a randomized waitlist-controlled trial for an 8 week yoga intervention. Interview methods and grounded theory, an exploratory research tool to document children's experiences with yoga, were utilized to learn

about the childrens' perceptions. The results demonstrated findings on children's perceived physical, cognitive, and emotional benefits after participating in the classroom yoga intervention. Two themes emerged, the first being that the children had positive emotions associated with yoga, and two they had knowledge of yoga and self-regulation skills.

Benefits for Teachers.

Teaching is an emotional practice. Although this is true many pre-service educator programs do not focus on social and emotional wellness in the classroom, but rather pedagogy, instruction, and content. It's often that new teachers aren't prepared for the emotional demands of the job. They aren't prepared to face a host of interpersonal interactions. Teachers are required to regulate their emotions during stressful situations and interactions with students. When faced with a stressful situation or interaction with a student or students, teachers must face it head on with little time to process, or consider how to handle the situation. Teachers make decisions on a dime and are often left wondering if they handled the situation appropriately or correctly. This environment is described by Jennings (2015), as a "captive" situation for both teachers and their students. They can't leave during class without dealing with negative consequences. This idea of being a captive is something that many teachers experience and feel due to the classroom environment being set up for serious stress-related health problems. Few have thought or dared to call it as such. This expeditious environment can cause anxiety for teachers. There is often little time to consult the expertise of other teachers or administrators for advice on how to handle situations. Teachers often worry about parents' expectations and hope that they are upholding their hopes for their child's education experience. These pressures and expectations for

upholding a safe and effective learning environment for all students makes for a challenge, especially when faced with a difficult student or class. That is where mindfulness practices can help. They are not only for students, but for teachers too. The benefits and options for implementation are numerous, but a specific look at how mindfulness helps with physical well being, emotional regulation, reducing anxiety, strengthening relationships with students, and decreasing behavior issues will be the focus.

Mindfulness practices have been known to have positive effects on the physiology of the human body such as decreases in heart rate and breathing, and increases in blood oxygen levels (Tang, 2017). Tang (2017) helps us to understand that integrative body-mind training (IMBT) helps our body shift our nervous system into the relaxed and calm state. It helps us to calm down from stress, because breathing and meditation shifts your body into the parasympathetic dominant state where your mind is more open and clear, heart rate is slow, breath is deeper, and muscles are relaxed. These physical reactions are not particularly conducive to quality teaching (Tobin et al., 2016). According to Tobin et al. (2016) when teachers understand more about mindfulness and know how to apply mindfulness practices like breathing meditations they can better monitor their body while teaching which may serve to decrease heart rate and increase blood oxygen levels. This study shows the benefits of utilizing mindfulness techniques while teaching, demonstrating that the skills that mindfulness offer provide for versatility in its domain of use.

Mindfulness practices have been known to provide teachers with strategies to help cope with intense emotions and emotional regulation that can assuage burnout. Practicing mindfulness

can change a person's behavior due to the alterations in brain function and structure (Davidson et al., 2012). In a study by Watkins (2008) mindfulness helped to regulate the human brain rather than operating with the mammalian brain responsible for rumination and focusing on negative attributions. Mindfulness has been shown to activate the ventral and dorsolateral prefrontal cortex, right anterior insula, somatosensory cortex, and inferior parietal lobe which are all responsible for emotional regulation. When mindfulness is not practiced, the brain seems to be more activated in the cortical midline structures responsible for emotional feeling (Watkins, 2008).

Mindfulness practices are increasingly demonstrating their potential for helping reduce anxiety. It's known that teachers' stress is linked with their workplace, and that by reducing stress in the workplace it can improve mental health. In a study investigating teacher anxiety after participation in a yoga program, primary school teachers practiced yoga for 15 days where the control group continued with their normal routine. The mental well-being scale (WEMWBS) was used to measure mental well-being and anxiety. Telles et al. (2018) found that after 15 days of the yoga program teachers were experiencing increases in their mental health as well as lower anxiety. The non-yoga control group had higher levels of anxiety.

Due to the demanding nature of teaching, Lomas et al. (2017), set out to investigate the impact of mindfulness on the well-being and performance of educators. A literature review was conducted searching for studies of mindfulness in teaching. A total of 19 papers met the criteria for the review, with a total of 1981 participants. Lomas et al. (2017) found that on a whole MBI had a positive impact on the mental health of educators. The results demonstrated decreases in

anxiety, burnout, and depression. They found that there was a positive impact of training awareness with MBIs, mindfulness helped participants to detach from their negative thoughts. The intervention pulled the participants' cognition off center which helped to prevent downward spiraling, They were better able to tolerate situations that would normally be distressing (Lomas et al., 2017).

Teachers often experience emotionally challenging events. Examples may be when a teacher is involved in an interaction with a student who is not emotionally well-regulated. Perhaps they're caught in intense anger, anxiety, or sadness. These are the students that often develop behavioral issues in the classroom (Jennings & Greenberg, 2009). Mindfulness can oftentimes help to tame behavior issues in the classroom. Mindfulness is involved in a heightened sense of situational awareness and a conscious control over your own thoughts and behavior. Teachers that are able to exercise mindfulness and stay calm under pressure without taking behaviours personally and are better classroom managers (Jennings & Greenberg, 2009).

Chapter III: Application of the Research

Evidence-Based Rationale

Characteristics of Professional Development for Teachers

Implementing a mindfulness professional development session for teachers has the potential for immense benefits at the middle level, the level in which I currently find myself working with teachers and students. Hahn and Weare (2012) teach us that educating teachers on the importance of caring for themselves is the first step to implementing mindfulness-based intervention in the classroom. Teachers have the need and they have the right to take time for themselves. When teachers harness their own mindfulness practice, it cultivates their own happiness and well being. Mindfulness can heal the heart and body from its own suffering (Hahn & Weare, 2012). Teachers should hear that there is no right or wrong way to go about this, the professional development session will provide tools, but the best way to bring mindfulness education to students is to practice yourself. Truly, the best way to reap the benefits of mindfulness is to practice independently (Beattie, 2019). Modeling is the most important way to implement the curriculum. Mindfulness can not be outsourced; it must be embodied. Without self-study the practices lack depth in the classroom and are more difficult to teach to children. To truly be effective perhaps the only "way out is in" (Hahn & Weare, 2012, p.287).

The effects of MBI on teachers is worthwhile. Bazzanon et al. (2018) investigated 20 third graders who screened positive for anxiety that were placed in a MBI test group and 32 other

students who received care as usual. Teachers were invited to participate in two professional development sessions that introduced MBIs. They were asked to complete a survey following each session. The teachers' two most commonly reported barriers to implementing the MBIs in their classrooms were first that there are too many academic requirements taking precedence, and second teachers reported a lack of confidence using the technique. Regardless of teachers' apprehension, the students enlisted in the mindfulness intervention significantly improved their psychosocial and emotional quality of life compared with their peers in the control group (Bazzano et al., 2018). So as not to deter teachers from implementing a mindfulness program it's important to help them build their confidence in its effectiveness through personal practice and through professional development sessions. Teachers reported using yoga in their classroom more often between the first and second staff development session in the study, improving from 1.28 to 2.39 times per week (Bazzano et al., 2018). This data goes to show that helping to improve teachers' confidence in the intervention will help with implementation and sustainability.

In one study teachers were asked to identify incentives that would help them buy into the mindfulness program. Teachers agreed that if the program would improve student classroom behaviors and reduce the time teachers spent disciplining students, then it would be worth it. Knowing that the literature has shown positive effects on students' behavior when introduced to mindfulness programs perhaps it will help teachers "buy in" (Dariotis, 2017).

It is my intention to place great emphasis on creating interventions for both teachers and students. According to Meiklejohn et al. (2012) many of the MBIs have focused on the benefits

for students. He points out the importance in understanding that by nurturing teachers' resilience with mindfulness it can create a school set-up that will broaden appeal, efficacy, and scalability of integrating mindfulness into K-12 education.

Characteristics of the Mindfulness-Based Intervention for Students

Implementing a mindfulness practice for students should serve to introduce students to mindfulness, help them understand basic neurophysiology of the brain, and equip them with the skills that mindfulness has to offer. The basic foundational skills that this mindfulness-based intervention will focus on is first helping students recognize and manage worry. Show them that it is a universal human experience, and that when we are more mindful we can learn to appreciate what's going well rather than ruminating on what's going wrong. Second, helping students to train their attention, to become more aware and less distracted. Third, students will learn how to become less reactive and more responsive, by regulating their emotions more effectively.

Professional Application

Staff Development Sessions.

The ideal intervention would be for middle-school teachers in my district to undergo an 8 week MBSR course. Teachers wouldn't be learning how to teach MBSR, not a teacher training, but a course for themselves. The course would be a way to expose them to the discipline of mindfulness and to help them start seeing and feeling the benefits of mindfulness before

exposing a mindfulness-based intervention to their students. Knowing that the feasibility for an 8 week MBSR course is low, three teacher (peer) taught staff-development sessions have been created.

Session 1	**Mindfulness Practices in School.**
Learning Target	● Understand the basics of mindfulness in schools
Learning Plan	1. Deliver the Session 1 presentation to teachers and staff (see Appendix A)

Session 2	**Understanding Mindfulness for Teachers- Developing your own practice.**
Learning Target	● Understand what MBSR is ● Practice an adapted version of MBSR ● Understand where to find and how to use resources that help implement a mindfulness practice into their own lives.
Learning Plan	1. Deliver the Session 2 presentation to teachers and staff (see Appendix B)

Session 3	**Introduction to Mindful Mondays Curriculum for Students.**
Learning Target	● Understand the content included in the 10 week Mindful Monday curriculum ● Be able to share implementation strategies ● Discuss
Learning Plan	1. Deliver the Session 3 presentation to teachers and staff (see Appendix C)

Mindful Monday lessons are designed to take no more than 10-15 minutes of class time. Curriculum instruction time is often "stolen" from teachers for reasons such as standardized tests, unreliable technology, student behavior and discipline. In the interest of preserving teacher instructional time and making the Mindful Monday curriculum feel valuable and approachable, the time spent on each lesson has been designed to be minimal.

Week 1	***Introduction to Social Emotional Learning Through Mindfulness.***
Learning Target	● Understand how mindfulness (breathing and meditation) can help with difficult emotions. ● Create a glitter jar to help understand the physiology of the brain (See Appendix C).

Learning Plan	1. Watch the video "Just Breathe" by Julie Bayer Salzman & Josh Salzman (Wavecrest Films) (Mindful Schools, 2015). 2. Make glitter jars (Horsager, 2018)

Week 2	***Introduction to Mindfulness.***
Learning Target	● Understand what mindfulness is ● Examine the ways to practice mindful meditation ● Practice a mindful meditation
Learning Plan	1. Watch the BrainPop mindfulness video (Brainpop, 2020) 2. View the presentation on ways students can practice mindful meditation (see Appendix D). 3. Practice doing a guided meditation as a class. A great place to start is with the mindful eating practice from Teasdale et al. (2017) Eating One Raisin: A First Taste of Mindfulness. It can be adapted with chocolate too.

Week 3	***Taming the Animal Brain.***
Learning Target	● Understand the basic neurophysiology surrounding mindfulness. ○ How do different regions of the brain function under

	different circumstances?
Learning Plan	1. Watch the video by FtMyersFamPsych (2012,) Dr Daniel Siegel presenting a Hand Model of the Brain to understand the model. Show this more kid friendly video, Why Do We Lose Control of Our Emotions? to students (Kids Want to Know, 2017). 2. Use this worksheet to create a video or code an animation that demonstrates Dr. Daniel Siegel's hand model. Students' projects should explain how the brain works under stress (see Appendix E). 3. Color this worksheet highlighting the areas of the brain that operate during stress (see Appendix F).

Week 4	***Paying Attention.***
Learning Target	● Understand that through mindfulness meditation, better attention can be harnessed. ● Notice how it feels to pay attention to someone you are thankful for.
Learning Plan	**1.** Turn on the Focused Attention Mindfulness Practice for both you and your students (Fernandez, 2018). Simply get comfortable and

	be guided through this mindfulness practice.

Week 5	***Understanding Stress/Managing Strong Emotions.***
Learning Target	● Understand that feeling stress as a middle school student is normal and universal. ● Understand how to manage and cope with your stress in healthy ways
Learning Plan	1. Watch the video Release (Salzman, 2016). 2. Explain to students that they can use mindfulness practices to manage stress in their lives, share with them that journaling is one tool that can help. 3. Give students the Expressive Writing Worksheet (See Appendix G).

Week 6	***The Science of Kindness.***
Learning Target	● Understanding the science of kindness ● Notice how it feels to pay attention to someone you are thankful for.

Learning Plan	1. Watch the video The Science of Kindness (Life Vest Inside) (LifeVestInside, 2013) 2. Turn on the Loving Kindness Mindfulness Practice for both you and your students (MyLife, 2016). Simply get comfortable and be guided through this mindfulness practice.

Week 7	***Moving Mindfully.***
Learning Target	● Understand that mindfulness can be practiced in many ways ● Practice moving mindfully using a gentle yoga practice
Learning Plan	1. Instruct students how to move through a yoga practice just like you would your own practice

Week 8	***Watching Your Own Thoughts.***
Learning Target	● Understand that we all have chatter in our mind ● Learn how to become an observer of your own thoughts (metacognition). Calm the monkey mind. ● Understand that acknowledging your thoughts and letting them go helps to reduce anxiety

	● Holding onto your thoughts causes rumination, stress, and anxiety.
Learning Plan	1. Turn on the Letting Go Mindfulness Practice for both you and your students (Amos, 2020) . Simply get comfortable and be guided through this mindfulness practice.

Week 9	***Being Here Now: From Reacting to Responding.***
Learning Target	● Learn how to relax ● Train your brain not to react to distractions
Learning Plan	1. Turn on the Brach (2020) Relaxed Open Hearted Presence for both you and your students. Simply get comfortable and be guided through this mindfulness practice.

Week 10	***Taking in the Good: Being Present with Yourself.***
Learning Target	● Learn how to listen to your body ● Understand how to alleviate tension and stress by tuning into the present moment and pay attention to what the body is feeling ● Start to reduce stress and increase self compassion

Learning Plan	2. Turn on the Body Scan Mindfulness Practice for both you and your students (Levitt, 2020). Simply get comfortable and be guided through this mindfulness practice.

Audience Details

These application materials have been designed for teachers and students at Minnetonka Middle School East and West.

Resources Needed

In order to deliver this curriculum in an effective manner there are no required resources, that is if you forgo the video resources and focus on the guided meditation practices. The videos are optional, but do expound on the material and make for easy accessibility for teachers and students, especially if mindfulness is new. If you're interested in delivering the full curriculum rather than modifying it, then access to the internet is required as well as a monitor or smart board to deliver the content to students. It is not necessary for students to have their own technology devices, but it may provide for more flexibility and ease in delivery of the content. To deliver the first lesson some supplies are needed for the glitter jars. The recipe from Kumara Yoga (2018) is as follows.

Glitter Jar Recipe

1. Plastic bottle (500 ml) (Voss plastic water bottles are recommended but any plastic or glass jar will work).

2. Glitter, any kind will work.
3. Food coloring, optional
4. Glycerin or corn syrup (¼ of the container)
5. Dish Soap (A few drops)
6. Gorilla Glue or glue guns
7. Water

Prepare lukewarm water. The water should not be boiling when you pour it in the bottles, it can warp the plastic. Select and add glitter to the bottle. One half inch of glitter to start. Put the glitter in first, before anything else. Add a small amount of water and shake gently. Swirl up the glitter to help prevent clumping. Add glycerin or corn syrup until the bottle is approximately 1/4-1/3 full. Add water until the jar is almost full. Leave a few inches of space at the top to allow for the mixture to be properly stirred, and to add more glycerin if needed. Add 2-3 drops of dish soap to help disperse the glitter. Too much soap will result in bubbles. Close the jar and turn it a few times to mix everything up. Gently shake to see the consistency of everything. Open the bottle back up, place your finger inside and give it a good swirl to help separate the soap and glitter stuck at the top. Close the cap again and shake a little more. Use gorilla glue or hot glue to keep the bottle tightly closed.

CHAPTER IV: DISCUSSION AND CONCLUSION

Summary of Literature

In an increasingly tumultuous and anxiety ridden world, it is imperative for students and educators to stay calm within the storm. Students and teachers need to be physically well, and they need to be able to regulate their emotions in order to be successful in school. Students and teachers with strong resilience and coping skills fare better in the modern day classroom. That is why incorporating mindfulness-based intervention into the lives of students and teachers is important. Mindfulness can be an optimal intervention to help create regulation because it makes executive functioning stronger while helping to suppress emotional interference (Oberle & Schonert-Reichl, 2014).

There exists a clear amount of suffering from mental health disorders in both students and teachers, particularly anxiety. Teachers are suffering with their mental wellness (Gholamitooranposhti, 2012; Teacher Well-Being Index, 2019). Increasingly teachers are overwhelmed and mentally unwell (Shook et al., 2013). It is certain that teachers are more vulnerable to mental distress and anxiety simply because of their profession, because they report higher rates of mental health challenges compared to the general population, and their attrition rates are ever rising. (Chang, 2009, Lever et al., 2017, McLean et al., 2017). The vulnerability that teachers experience due to worsening mental health in the beginning of their careers is high, and especially notable considering how it impacts students (McLean et al., 2017). Improving the mental health of children is increasingly becoming a priority, as anxiety is one of the most

prevalent psychiatric disorders affecting 10% of children and 20% of adolescents (Essau et al., 2012). What's more is that student and teacher mental health are inextricably linked (Harding et al., 2019). One example of many is when teachers experience poor mental health and wellbeing, and it makes it difficult to form quality relationships with students (Harding et al., 2019). This duality makes for increasing urgency to introduce mindfulness to the classroom.

The need is great for mindfulness-based intervention, especially in terms of prevention of emotional dysregulation. National Alliance on Mental Illness (NAMI, 2010) exhorts that prevention is incredibly important, and early identification and treatment is critical, as it can prevent the loss of critical developmental years that can't be recovered. Treating anxiety early on helps adolescents avoid years of unnecessary suffering. Bledsoe (2014) argues in order to reduce suffering from anxiety students need to be made aware of their fear responses and be equipped with techniques for how to manage them. Mindfulness practices are one of those techniques. Equipping students with the power of mindfulness has the tremendous potential to alleviate undo suffering, change the neurophysiology of the brain that serves to reduce stress and anxiety in youth, and build up self-esteem (Knoblock, 2017). When it comes to teachers, the need to introduce mindfulness-based practices is pressing. Especially in helping to destigmatize mental health. De-stigmatization through the use of mindfulness is critical because there often isn't much support for teachers suffering from mental health issues, and teachers often worry it will be a reason to have them fired (AFT, 2017). Adding mindfulness to professional development for teachers can help break down the stigma, and serve to improve the mental health of educators

The research strongly supports the use of mindfulness practices in the classroom. It is applauded for its ability to help students and teachers focus, relieve stress, and regulate their emotions. Teachers are benefiting from mindfulness as a way to avoid teacher burnout. Mindfulness practices provide students and teachers with the strength to recognize and not get caught up by emotions (Viafora et al., 2015). Mindfulness serves to help students and teachers understand that the stresses of life are unavoidable, but suffering because of them is optional (Singh et al., 2016). Mindfulness programs continue to be introduced and studied in public education. The use of mediation has been scientifically established as a way to reduce stress and build resilience. Studies conducted within the context of public education classrooms are showing that students and teachers are less anxious, have better attention, better academic performance, and more emotional control. Social Emotional Learning (SEL) programs are starting to take note, as more and more students and teachers report mindfulness as a beneficial and welcome part of their school day.

Although secularized versions of mindfulness have been created, implementation should be given careful consideration. Despite the benefits claimed, these practices are still relatively new, and there are still educational stakeholders who object to using mindfulness in public education for a variety of reasons. There should be some caution when proceeding with mindfulness in the classroom. Jennings (2016) reminds of how critical it is to the success of mindfulness in education to adhere to best practices and avoid elements that are associated with religion, spiritual language, trappings, and belief. Her recommendations for best practices help to

eliminate doubt that mindfulness is a secular practice, and helps ensure the benefits of mindfulness are accepted.

Mindfulness has been tried at every level, from elementary to higher education. At every level benefits have been demonstrated. At the elementary level cortisol levels were decreased due to mindfulness intervention (Oberle & Schonert-Reichl, 2016). At the middle school level greater emotional wellbeing has been reported (Viafora et al., 2015). At the highschool level, mindfulness skills that were introduced to the curriculum helped students to increase their ability to self-regulate and become more self-aware. They were able to transform their thoughts, improve their behaviors, and regulate their emotions better. Their relationships with their peers, parents, and teachers also improved (Wisner, 2015).

Overall a pattern emerges: mindfulness has achieved desirable results for combating mental health disorders like anxiety. According to a teacher-focused group, teachers uniformly supported the idea of training youth in mindfulness (Mendelson et al., 2017). The students are benefiting from a greater sense of community and increased self and other-awareness (Cheek, 2017). Teachers are benefiting from reduced stress and increased emotional stability by practicing mindfulness (Fabbro et al., 2020).

Research Limitations

In examining the literature surrounding student and teacher anxiety and mindfulness practices, I largely attempted to limit my research to studies with control groups, and studies done in the educational environment. When examining the research, a major limitation was often

the scope of the studies completed. Many of the studies lacked longevity, large sample sizes, or duplication. Many studies included self-reporting which can introduce variability and lower the reliability of the findings. They also often included qualitative data rather than quantitative data. Very few studies examined test scores and grades, and whether or not mindfulness effected the academic performance of students in a quantitative way. Often, many of the studies conducted on students required parent permission for participation. The participants' juvenile nature also brings up the question of students' conceptions of what mindfulness is, and the need for that to be investigated. It should be further studied in order to determine whether mindfulness-based interventions are truly teaching mindfulness to students, as opposed to other emotional regulation strategies.

Finally, a major limitation of the research in terms of application to my guiding question was the lack of studies on mindfulness practices in public education versus clinical studies, few quality studies appear to exist presently. However, the mindfulness movement is quickly inciting good scientific practices, which make for more reliable research with better control groups, and longevity on this topic.

Implications for Future Research

Mindfulness in the classroom is a topic that deserves further inquiry. More research needs to be done on mindfulness with young people, especially given the body of evidence that currently supports the benefits of mindfulness practices on adults. Much of the evidence to support MBIs improving behavioral and academic achievement is still in its infancy. What MBIs

are best for improving behavior? Academic achievement? Which programs or strategies are best? What are the best methods and practices for using mindfulness in the classroom to decrease student anxiety? Are there adverse effects on children and youth that have not received attention? Lastly, how might we overcome biases in the research needs to be considered. Many evaluations of school-based mindfulness interventions appear to be biased in favor or the interventions due to the researchers having some kind of allegiance to the intervention.

References

A fit young woman practicing yoga while on a rock climbing trip. [Photograph]. Retrieved June 4, 2020, from Encyclopædia Britannica ImageQuest. https://quest.eb.com/search/167_4022979/1/167_4022979/cite.

Alkis, Y., Kadirhan, Z., & Sat, M. (2017). Development and validation of social anxiety scale for social media users. *Computers in Human Behavior, 72*, 296-303.

Allina Health. (2016). Change to Chill. *Allina Health System.* Retrieved June 4, 2020, from https://www.changetochill.org/activities-tools/

American Counseling Association (2011, October). Vicarious Trauma. *American Counseling Association.* Retrieved June 4, 2020, from https://www.counseling.org/docs/trauma-disaster/fact-sheet-9---vicarious-trauma.pdf

American Federation of Teachers. (2015). *Quality of Worklife Survey* [Data set]. https://www.aft.org/sites/default/files/worklifesurveyresults2015.pdf

American Federation of Teachers. (2017) *Educator Quality of Work Life Survey* [Data set]. Retrieved June 4, 2020, from https://www.aft.org/sites/default/files/2017_eqwl_survey_web.pdf

American Mindfulness Research Association. (2019) "Mindfulness" journal articles published by year: 1980-2019. Retrieved June 4, 2020, from https://goamra.org/resources/

American School Counselor Association. (2020). *ASCA releases updated student-to-school-counselor ratio data.*

https://schoolcounselor.org/asca/media/asca/Press%20releases/PR_18-19Student-to-SC-Ratios.pdf

Angry boy in a classroom. [Photograph]. Retrieved June 4, 2020, from Encyclopædia Britannica ImageQuest. https://quest.eb.com/search/132_1378135/1/132_1378135/cite.

Amos, J. (2020). Meditation for Letting Go. *Insight Timer.* Retrieved June 4, 2020, from https://insighttimer.com/staywithyourself/guided-meditations/meditation-for-letting-go

Anxiety Disorders Association of America (2018).Anxiety disorders in children. https://adaa.org/sites/default/files/Anxiety%20Disorders%20in%20Children.pdf

Anxiety Disorders Association of America (2020). Facts and statistics. https://adaa.org/about-adaa/press-room/facts-statistics

Anxiety Disorders Association of America (2020) Stress. https://adaa.org/understanding-anxiety/related-illnesses/stress

Arens, A., & Morin, A. (2016). Relations between teachers' emotional exhaustion and students' educational outcomes. *Journal of Educational Psychology, 108*(6), 800-813.

Barrows, J, Dunn, S, Lloyd, CA (2013). Anxiety, self-efficacy, and college exam grades. *Universal Journal of Educational Research.* 1(3): 204-208.

Bauer, C., Caballero, C., Scherer, E., West, M., Mrazek, M., Phillips, D., Whitfield-Gabrieli, S., & Gabrieli, J. (2019). Mindfulness training reduces stress and amygdala reactivity to fearful faces in middle-school children. *Behavioral Neuroscience, 133*(6), 569-585.

Bazzano, A., Anderson, C., Hylton, C., & Gustat, J. (2018). Effect of mindfulness and yoga on quality of life for elementary school students and teachers: Results of a randomized controlled school-based study. *Psychology Research and Behavior Management, 11*, 81-89.

Beattie, M., Hankonen, N., Salo, G., Knittle, K., & Volanen, S. (2019). Applying behavioral theory to increase mindfulness practice among adolescents: An exploratory intervention study using a within-trial RCT design. *Mindfulness, 10*(2), 312-324.

Bellinger, D., Decaro, M., & Ralston, P. (2015). Mindfulness, anxiety, and high-stakes mathematics performance in the laboratory and classroom. *Consciousness and Cognition, 37*, 123-132.

Benson, H., Wilcher, M., Greenberg, B., Huggins, E., Ennis, M., Zuttermeister, P., Myers, P., & Friedman, R. (2000). Academic performance among middle-school students after exposure to a relaxation response curriculum. *Journal of Research and Development in Education.* 33.

Beauchemin, J., Hutchins, T., & Patterson, F. (2008). Mindfulness meditation may lessen anxiety, promote social skills, and improve academic performance among adolescents with learning disabilities. *Complementary Health Practice Review, 13*(1), 34-45.

Bitsko, R., Holbrook, J., Ghandour, R., Blumberg, S., Visser, S., Perou, R., Walkup, J. (2018). Epidemiology and Impact of Health Care Provider–Diagnosed Anxiety and Depression Among US Children. *Journal of Developmental & Behavioral Pediatrics,* 39 (5), 395-403.

Black, D. (2009). A brief definition of mindfulness. *Behavioral Neuroscience*, *7*(2), 109.

Blake, M., Blake, L., Schwarz, O., Raniti, M., Waloszek, J., Murray, G., Simmons, J., Landau, E., Dahl, R., McMakin, D., Dudgeon, P., Trinder, J., & Allen, N., (2018). Who benefits from adolescent sleep interventions? Moderators of treatment efficacy in a randomized controlled trial of a cognitive-behavioral and mindfulness-based group sleep intervention for at-risk adolescents. J*ournal of Child Psychology and Psychiatry, 59*(6), 637 - 649.

Bledsoe, T., & Baskin, J. (2014). Recognizing student fear: The elephant in the classroom. *College Teaching, 62*(1), 32-41.

Borrelli, I., Benevene, P., Fiorilli, C., D'Amelio, F., & Pozzi, G. (2014). Working conditions and mental health in teachers: A preliminary study. *Occupational Medicine*, 64, 530–532. https://doi.org/10.1093/occmed.kqu108

Boudreau, E. (2019, December 3) Safeguarding the mental health of teachers. Harvard Graduate School of Education. https://www.gse.harvard.edu/news/uk/19/12/safeguarding-mental-health-teachers

Brach, T. (2020) Relaxed Open-hearted Presence. *Calm*. Retrieved June 4, 2020, from https://app.www.calm.com/program/h3RRWaz-33/relaxed-open-hearted-presence

Brainpop. (2020). Mindfulness [Video]. Retrieved June 4, 2020, from https://www.brainpop.com/english/studyandreadingskills/mindfulness/

Cal Poly Counseling Services. (2019). Anxiety toolbox: Student workbook. *Counseling.calpoly.edu.* Retrieved June 4, 2020, from

https://content-calpoly-edu.s3.amazonaws.com/hcs/1/documents/counseling/Anxiety%20Toolbox%20Student%20Workbook%202017%2008%2029.pdf

Calm. (2020). *Daily Calm*. YouTube. Retrieved June 4, 2020, from https://www.youtube.com/watch?v=5vI8Kh3-epg&list=PLgdxvG3Ulbidz8n_l3rZdcAADnDJ6NFHO

Calm.com, Inc. (2019). Calm [Mobile App]. App Store. Retrieved June 4, 2020, from https://apps.apple.com/us/app/calm/id571800810

CalmerChoice. (2013). *CalmerChoice Channel.* YouTube. Retrieved June 4, 2020, from https://www.youtube.com/user/calmerchoice/videos

Carsley, D., & Heath, N. (2018). Effectiveness of mindfulness-based colouring for test anxiety in adolescents. *School Psychology International, 39*(3), 251-272.

Casa Palmera Staff (2012, September 17) Neglect Abuse and Other Forms of Childhood Trauma. Retrieved June 4, 2020, from https://casapalmera.com/blog/types-and-effects-of-childhood-trauma/

Centers for Disease Control and Prevention (2014, June 6). *Stress… At Work.* https://www.cdc.gov/niosh/docs/99-101/pdfs/99-101.pdf?id=10.26616/NIOSHPUB99101

Centers for Disease Control and Prevention. (2020). *Children's Mental Health*. https://www.cdc.gov/childrensmentalhealth/data.html

Chang, M. L, (2009). An appraisal perspective of teacher burnout: Examining the emotional work of teachers. *Educational Psychology Review*, 21(3), 193-218.

Chang, M. (2013). Toward a theoretical model to understand teacher emotions and teacher burnout in the context of student misbehavior: Appraisal, regulation and coping. *Motivation and Emotion, 37*(4), 799-817.

Chapell, M. S., Blanding, Z. B., Silverstein, M. E., Takahashi, M., Newman, B., Gubi, A., & McCann, N. (2005). Test anxiety and academic performance in undergraduate and graduate students. *Journal of Educational Psychology*, 97(2), 268-274. doi:10.1037/0022-0663.97.2.268

Cheek, J. M., Abrams, E. L., Lipschitz, D. R., Nakamura, Y., & Vago, D. (2017). Creating novel school-based education programs to cultivate mindfulness in outh: What the letters told us. *Journal of Child and Family Studies, 26*(9), 2564-2578.

Chocolate. [Photograph]. Retrieved June 4, 2020, from Encyclopædia Britannica ImageQuest. https://quest.eb.com/search/132_1255150/1/132_1255150/cite.

Coates, T., & Thoresen, C. (1976). Teacher anxiety: A review with recommendations. *Review of Educational Research, 46*(2), 159-184.

Coltrera, F. (2018, June 1). Anxiety: What it is, what to do [Blog post]. Retrieved June 4, 2020, from https://www.health.harvard.edu/blog/anxiety-what-it-is-what-to-do-2018060113955

Conzentrate UK. (2016). *Guided Mindfulness Meditation Practice* [Video]. YouTube. Retrieved June 4, 2020, from https://www.youtube.com/channel/UCRKnSe1J-1okphw3mN4glaA

Cooper Gibson Research (2018). Factors affecting teacher retention: qualitative investigation *Department for Education Research Report: London*.https://assets.publishing.service.gov.uk/government/uploads/system/uploads/atta

chment_data/file/686947/Factors_affecting_teacher_retention_-_qualitative_investigation.pdf

Craske, M., & Stein, M. (2016). Anxiety. *The Lancet, 388*(10063), 3048-3059.

Crowley, C., & Munk, D. (2017). An Examination of the Impact of a College Level Meditation Course on College Student Well Being. *College Student Journal, 51*(1), 91-98.

Cunha, M. & Jacinta Paiva, M.. (2012). Text anxiety in adolescents: The role of self-criticism and acceptance and mindfulness skills.(articulo en ingles)(ansiedad ante los examenes). *Spanish Journal of Psychology, 15*(2), 533-53343.

Damico, J. (October 21, 2018) Social media: A threat to american adolescents' mental health. *Medium*. https://medium.com/@jasondamico/social-media-a-threat-to-american-adolescents-mental-health-e62d28fbb4e3

Dariotis, J., Mirabal‐Beltran, R., Cluxton‐Keller, F., Feagans Gould, L., Greenberg, M.,

Douglass, L. (2010). Yoga in the public schools: Diversity, democracy and the use of critical thinking in educational debates. *Religion and Education*, 37 (2), 162-174.

Davidson, R., Dunne, J., Eccles, J., Engle, A., Greenberg, M., Jennings, P., Jha, A., Jinpa T., Lantieri, L., Meyer, D., Roeser, R., & Vago, D. (2012). Contemplative practices and mental training: Prospects for american education. *Child Development Perspectives*, 6(2), 146-153.

Deplus, S., Billieux, J., Scharff, C., & Philippot, P. (2016). A mindfulness-based group intervention for enhancing self-regulation of emotion in late childhood and adolescence: A pilot study. *International Journal of Mental Health and Addiction, 14*(5), 775-790.

Dizon-Ross, E., Loeb, S., Penner, E., & Rochmes, J. (2019). Stress in boom times: Understanding teachers' economic anxiety in a high-cost urban District. *AERA Open, 5*(4), AERA Open, October 2019, Vol.5(4).

Dobkin, P., & Hassed, C. (2016). Mindful medical practitioners*:* A guide for clinicians and educators [PDF]. *Cham: Springer International Publishing.*

Eide, E. & Showalter, M. (2012). Sleep and Student Achievement. *Eastern Economic Journal, 38*(4), 512-524.

Eliuk, K. & Chorney, D. (2017). Calming the Monkey Mind. *International Journal of Higher Education.* 6(2), 1-7.

Essau, C.A., Conradt, J., Sasagawa, S., & Ollendick, T.H. (2012). Prevention of anxiety symptoms in Children: Results from a universal school-based trial. *Behavior Therapy,* 43, 450-564.

Eva, A., & Thayer, N. (2017). The mindful teacher: Translating research into daily well-being. *The Clearing House: A Journal of Educational Strategies, Issues and Ideas, 90*(1), 18-25.

Fabbro, A., Fabbro, F., Capurso, V., D'antoni, F., & Crescentini, C. (2020). Effects of mindfulness training on school teachers' self-reported personality traits as well as stress and burnout levels. *Perceptual and Motor Skills, 127*(3), 515-532.

Fablefy- The Whole Child. (2020). Mindfulness For Teens and Adults. YouTube. Retrieved June

4, 2020, from https://www.youtube.com/watch?v=tcnJz2R0hx0&list=PLOL43Ch9yQXwEEcxFIAsX3CjSWKgLJYBs

Ferguson K., Frost L. & Hall, D. (2011). Predicting teacher anxiety, depression, and job satisfaction. *Journal of Teaching and Learning.* 8(1), (27-42).

Fernandez, R. (2018, September 26). Focused Attention Meditation with Rich Fernandez. [Video]. *Mindful.* Retrieved June 4, 2020, from *https://www.mindful.org/a-meditation-to-focus-attention/*

Fernando, R. (2011) Mindful Eating. *Mindful Schools.* Retrieved June 4, 2020, from https://www.mindfulschools.org/personal-practice/mindful-eating

File:Cortisol-3D-skeletal-sticks.png. (2014, December 8). *Wikimedia Commons, the free media repository*. Retrieved June 4, 2020 from https://commons.wikimedia.org/w/index.php?title=File:Cortisol-3D-skeletal-sticks.png&oldid=141809484.

Flourish Foundation. (2019). Flourish Mediation | Kids. Soundcloud [Audio File]. Retrieved June 4, 2020, from https://soundcloud.com/user-822338142/sets/flourish-meditation-kids

Frenzel, A., Pekrun, R., Goetz, T., Daniels, L., Durksen, T., Becker-Kurz, B., & Klassen, R. (2016). Measuring teachers' enjoyment, anger, and anxiety: The teacher emotions scales (TES). *Contemporary Educational Psychology, 46*, 148-163.

Flook, L., Smalley, S., Kitil, M.J., Galla, B.M., Kaiser-Greenland, S., Locke, J., Ishijima, E., & Kasari, C. (2010). Effects of mindful awareness practices on executive functions in elementary school children. *Journal of Applied Psychology,* 26, 70-95.

Foster, D. (2019). Teacher recruitment and retention in England. House of Commons briefing paper 7222. Retrieved June 4, 2020, from https://researchbriefings.files.parliament.uk/documents/CBP-7222/CBP-7222.pdf

FtMyersFamPsych. (2012, February 29). *Dr. Daniel Siegel presenting a Hand Model of the Brain* [Video]. YouTube. Retrieved June 4, 2020, from https://www.youtube.com/watch?v=gm9CIJ74Oxw&feature=emb_title.

Fulweiler, B. & John, R. (2018) Mind & body practices in the treatment of adolescent anxiety. *The Nurse Practitioner, 43*(8), 43-44.

Geving, A. M. (2007). Identifying the types of student and teacher behaviours associated with teacher stress. *Teaching and Teacher Education,* 23, 624-640. http://dx.doi.org.ezproxy.bethel.edu/10.1016/j.tate.2007.02.006

Gillen, J. & Gillen, L. (2007). *Yoga calm for children: Educating heart, mind and body*. Three Pebbles Press.

Gholamitooranposhti, M. (2012). Teachers' mental health. *Procedia - Social and Behavioral Sciences, 69*, 1295-1301.

Gray, L., & Taie, S. (2015). Public school teacher attrition and mobility in the first five years: Results from the first through fifth waves of the 2007-08 beginning teacher longitudinal study. *NEA*. https://nces.ed.gov/pubsearch/pubsinfo.asp?pubid=2015337

Greater Good Science Center UC Berkeley. (2020). Gratitude Journal for Students. *Greater Good Science Center at UC Berkeley and HopeLab.* Retrieved June 4, 2020, from https://ggia.berkeley.edu/practice/gratitude_journal_for_students

Hambour, V., Zimmer-Gembeck, M., Clear, S., Rowe, S., & Avdagic, E. (2018). Emotion regulation and mindfulness in adolescents: Conceptual and empirical connection and associations with social anxiety symptoms. *Personality and Individual Differences, 134*, 7-12.

Harding, S., Morris, Gunnell, Ford, Hollingworth, Tilling, K., Evans, R., Bell, S., Grey J., Brockman, R., Campbell, R., Araya, R., Murphy, S., & Kidger, J. (2019). Is teachers' mental health and wellbeing associated with students' mental health and wellbeing? *Journal of Affective Disorders,* 242, 180-187.

Harris, R. (2016, July 20). *The Three Main Parts Of Your Brain by Dr. Russ Harris* [Video]. YouTube. Retrieved June 4, 2020, from https://www.youtube.com/watch?v=5CpRY9-MIHA

Harvard Women's Health Watch (2008) *Anxiety and physical illness*. https://www.health.harvard.edu/staying-healthy/anxiety_and_physical_illness

Headspace. (2018). *Mini meditation* [Video]. YouTube. Retrieved June 4, 2020, from https://www.youtube.com/watch?v=nsGbtrl1WkU&list=PLW8o3_GFoCBOexWd8WK-hAjReSYifh1nx

Herman, K., Prewett, S., Eddy, C., Savala, A., & Reinke, W. (2020). Profiles of middle school teacher stress and coping: Concurrent and prospective correlates. *Journal of School*

Psychology, *78*, 54–68. https://doi.org/10.1016/j.jsp.2019.11.003

Pine, D. (2009) Healthy and unhealthy anxiety. *Cold Spring Harbor Laboratory DNA Learning Center.* dnalc.cshl.edu/view/2296-Healthy-and-Unhealthy-Anxiety.html#.

Higton, J., Leonardi, S., Richards, N., Choudhoury, A., Sofroniou, N., & Owens, D. (2017). Teacher workload survey 2016: Research report. *London: Department for Education.*

Horsager, M. (2018). *Glitter calm down jar recipe. Kumarah Kid's Yoga and Mindfulness.* Retrieved June 4, 2020, from https://kumarahyoga.com/how-to-make-a-mindfulness-glitter-calm-down-jar/

Ingersoll, R., Merrill, L., & Stuckey, D. (2018). The changing face of teaching. *Educational Leadership, 75*(8), 44-49.

Insight Network Inc. (2019). Insight Timer- Meditation App [Mobile App]. Retrieved June 4, 2020, from https://apps.apple.com/us/app/insight-timer-meditation-app/id337472899

Insight Timer. (2019). Insight Timer [Playlist]. YouTube. Retrieved June 4, 2020, from https://www.youtube.com/channel/UCA1raD2uELPTbm-J3h1Z34g/featured

INWARD, INC. (2014). Mindfulness Daily [Mobile App]. Retrieved June 4, 2020, from https://apps.apple.com/us/app/mindfulness-daily/id701112447?ls=1

Jennings, P., & Greenberg, M. (2009). The prosocial classroom: Teacher social and emotional competence in relation to student and classroom outcomes. *Review of Educational Research, 79*(1), 491-525.

Jennings, P. (2015, March 30). Seven ways mindfulness can help teachers. *The Greater Good Science Center.* Retrieved June 4, 2020, from

https://greatergood.berkeley.edu/article/item/seven_ways_mindfulness_can_help_teachers

Jennings, P. (2016). Mindfulness-based programs and the American public school system: Recommendations for best practices to ensure secularity. *Mindfulness, 7*(1), 176-178.

Jerrim J., Taylor H., Sims S., & Allen R. (2020) Has the mental health and wellbeing of teachers in England declined over time? New evidence from three datasets. *UCL Institute of Education.* *https://johnjerrim.files.wordpress.com/2020/01/jerrim-working_paper_21_01_2020_clean.pdf*

Jones-Rincon, A. & Howard K. (2018, June 1). Anxiety in the workplace: A comprehensive occupational health evaluation of anxiety disorder in public school teachers. *Journal of Applied Biobehavioral Research*, 25(1), 1-12. https://doi.org/10.1111/jabr.12133

Johnson, S. (2019). *Where teachers thrive: Organizing schools for success*. Cambridge, Massachusetts: Harvard Education Press.

Kabat-Zinn, J. (2003). Mindfulness-Based Stress Reduction (MBSR). *Constructivism in the Human Sciences, 8*(2), 73-83.

Kabat-Zinn, J. (1994). Wherever you go, there you are: Mindfulness meditation in everyday life. New York, NY: Hyperion.

Keller, Julia, Ruthruff, Eric, & Keller, Patrick. (2019). Mindfulness and speed testing for children with learning disabilities: Oil and water? *Reading & Writing Quarterly, 35*(2), 154-178.

Kids Want to Know. (2017, March 12). Why do we lose control of our emotions? [Video]. *YouTube.* Retrieved June 4, 2020, from, https://www.youtube.com/watch?v=3bKuoH8CkFc.

Killu, K., Marc, R., & Crundwell, A. (2016). Students with anxiety in the classroom: Educational accommodations and interventions. *Beyond Behavior*, *25*(2), 30–40. https://doi.org/10.1177/107429561602500205

Kimbrough, E., Magyari, T., Langenberg, P., Chesney, M., & Berman, B. (2010). Mindfulness intervention for child abuse survivors. *Journal of Clinical Psychology, 66*(1), 17-33.

Knoblock, K. (2017). A consideration of the use of mindfulness meditation in public education. Master's thesis, *Harvard Extension School.* http://nrs.harvard.edu/urn-3:HUL.InstRepos:33826036

Kohut, A.S., Sinson, J., Davies-Chalmers, C., Ruskin, D., van Wyk, M., (2017) Mindfulness-based interventions in clinical samples of adolescents with chronic illness: A systematic review. *The Journal of Alternative and Complementary Medicine,* 23:8, 581-289.

Kripalu Center for Yoga & Health. (2015). Kripalu Mandala Coloring Book. *Kripalu Center for Yoga & Health.* Retrieved June 4, 2020, from https://kripalu.org/sites/default/files/pdfs/kripalu_mandala_coloringbook.pdf

National Comorbidity Survey. (2017, August 21). Retrieved, June 4, 2020 from https://www.hcp.med.harvard.edu/ncs/index.php.

Landgraf, D., Long, J., Proulx, C., Barandas, R., Malinow, R., & Welsh, D. (2016). Genetic disruption of circadian rhythms in the suprachiasmatic nucleus causes helplessness, behavioral despair, and anxiety-like behavior in mice. *Biological Psychology,* 80(11): 827-835. DOI: 10.1016/j.biopsych.2016.03.1050

La Greca, A., & Lopez, M. (1998) Social anxiety among adolescents: Linkages with peer relations and friendships. *Journal of Abnormal Child Psychology,* 26, 2 (1998): 83-94.

Lever, N., Mathis, E., & Mayworm, A. (2017) School mental health is not just for students: Why teacher and school staff wellness matters. *Report on Emotional & Behavioral Disorders in Youth,* 17 (1), 6-12.

Levitt, T. (2020). Body Scans. *Calm.* Retrieved June, 4, 2020, from https://app.www.calm.com/program/whzIxMJxVR/body-scan

LifeVestInside. (2013, July 21). The Science of Kindness (Life Vest Inside) [Video]. YouTube. June 4, 2020, from https://www.youtube.com/watch?v=FA1qgXovaxU&feature=emb_title

Lomas, T., Medina, J., Ivtzan, I., Rupprecht, S., & Eiroá-Orosa, F. (2017). The impact of mindfulness on the wellbeing and performance of educators: A systematic review of the empirical literature. *Teacher and Teacher Education.* 61(C), 132-141.

Long, A., (2012) Mountain movement: The design, implementation, & evaluation of a youth yoga program. *Capstone Collection.* Paper 2520.

Lucas-Thompson, R., Broderick, G., Coatsworth, P., & Smyth, C. (2019). New avenues for promoting mindfulness in adolescence using mHealth. *Journal of Child and Family Studies*. 28(1), 131-139. p. 133

Lutz A, Slagter HA, Dunne J, Davidson RJ. Attention regulation and monitoring in mediation. *Trends in Cognitive Science.* 2008; 12(4): 163-169. [PubMed: 18329323]

MacLean, Paul D. (1990). *The triune brain in evolution: role in paleocerebral functions*. New York: Plenum Press. ISBN 0-306-43168-8. OCLC 20295730.

Mahan, Pamela L, Mahan, Michael P, Park, Na-Jin, Shelton, Christie, Brown, Kathleen C, & Weaver, Michael T. (2010). Work environment stressors, social support, anxiety, and depression among secondary school teachers. *AAOHN Journal : Official Journal of the American Association of Occupational Health Nurses, 58*(5), 197-205.

Maynard, B., Solis, M., Miller, V., & Brendel, K. (2017). Mindfulness‐based interventions for improving cognition, academic achievement, behavior, and socioemotional functioning of primary and secondary school students. *Campbell Systematic Reviews, 13*(1), 1-144.

Mayo Clinic Staff. (2018) Anxiety disorders. *Mayo Clinic.* Retrieved June 4, 2020, from https://www.mayoclinic.org/diseases-conditions/anxiety/symptoms-causes/syc-20350961?p=1

McLean, D., Eklund, K., Kilgus, S., & Burns, M. (2019). Influence of teacher burnout and self-efficacy on teacher-related variance in social-emotional and behavioral screening scores. *School Psychology, 34*(5), 503-511.

Meditation: child's face and projected circles. [Photography]. Retrieved June 4, 2020, from

Encyclopædia Britannica ImageQuest. https://quest.eb.com/search/132_1278855/1/132_1278855/cite

Meditation Oasis. (2009). Simply Being- Guided Meditation for Relaxation and Presence [Mobile App]. Retrieved June 4, 2020, from https://apps.apple.com/us/app/simply-being-guided-meditation-for-relaxation-presence/id347418999

Meiklejohn, J., Phillips, C., Freedman, M. L., Griffin, M. L., Biegel, G., Roach, A., Frank, J., Burke, C., Pinger, L., et al. (2012) Integrating mindfulness into K-12 education: Fostering the resilience of teachers and students. *Mindfulness,* 3(4), 291-307

Mendelson, T. (2017). A qualitative exploration of implementation factors in a school-based mindfulness and yoga program: Lessons learned from students and teachers. *Psychology in the Schools*, 54(1), 53-69.

Milkie, M.A., & Warner, C.H.,. (2011). Classroom learning environments and the mental health of first grade children. *Journal of Health and Social Behavior*. 52 (1), 4-22.

Miller, J., Fletcher, K., & Kabat-Zinn, J. (1995). Three-year follow-up and clinical implications of a mindfulness meditation-based stress reduction intervention in the treatment of anxiety disorders. *General Hospital Psychiatry, 17*(3), 192-200.

MindApps. (2019). The Mindfulness App [Mobile App]. Retrieved June 4, 2020, from https://apps.apple.com/us/app/mindfulness-app-guided-silent/id417071430

The Mindful Movement. (2017). The Mindful Movement. YouTube. Retrieved June 4, 2020, from https://www.youtube.com/channel/UCu_mPlZbomAgNzfAUElRL7w/videos

Mindful Schools. (2015, January 26). *"Just Breathe" by Julie Bayer Salzman & Josh Salzman* [Video]. WaveCrest Films. Retrieved June 4, 2020 from https://www.youtube.com/watch?v=RVA2N6tX2cg&feature=emb_title

Mindful Schools (2019) Why is mindfulness needed in education? *Mindful Schools.* https://www.mindfulschools.org/about-mindfulness/why-is-mindfulness-needed-in-education/

Mindfulness 360 - Center For Mindfulness. (2017, November 16). Introduction to MBSR - UMass Medical School & Center for Mindfulness [Video]. YouTube. Retrieved June 4, 2020, from https://www.youtube.com/watch?v=Y0LArEJ_sRo&feature=emb_title

Mindfulness Everywhere Ltd. (2015). Buddhify [Mobile App]. App Store. https://apps.apple.com/gb/app/buddhify-mindfulness-meditation/id687421118

Minero, E. (2017, October 4). When students are traumatized, teachers are too. *Edutopia.* Retrieved March 04, 2018, from https://www.edutopia.org/article/when-students-are-traumatized-teachers-are-too

Montserrat, P. (2016) Does Mindfulness Belong in Public Schools? [Illustration]. *Marlena Agency.* Retrieved June 4, 2020, from https://tricycle.org/magazine/does-mindfulness-belong-public-schools/

MyLife (2020, March 4). Kindness Meditation (Strengthen Happiness) [Video]. YouTube. Retrieved June 4, 2020, from https://www.youtube.com/watch?v=R2EOqFBCmy8

MyLife Meditation. (2020). Stop. Breathe. Think [Mobile App]. App Store. Retrieved June 4, 2020, from https://apps.apple.com/US/app/id778848692?mt=8

Nagel, L., & Brown, S. (2003). The ABCs of managing teacher stress. *The Clearing House: A Journal of Educational Strategies, Issues and Ideas,* 76(5), 255-258.

National Alliance on Mental Illness. (2010). Facts on children's mental health in America. https://www.nami.org/Press-Media/Press-Releases/2010/One-in-10-Children-Has-Mental-Illness;-State-by-St

National Association of Schoolmasters Union of Women Teachers (2013). Teachers' satisfaction and wellbeing in the workplace. *London: ComRes* http://www.nasuwt.org.uk/MemberSupport/NASUWTPublications/AllPublications/ResearchProjects/MentalHealthReport/NASUWT_006310.

National Comorbidity Survey (2005) NCS-A Lifetime and 12M Prevalence Estimates. *Harvard Medical School*. https://www.hcp.med.harvard.edu/ncs/

National Education Association (2018) Teacher compensation: Fact versus fiction. *Fact Sheet.* http://www.nea.org/assets/docs/Salary_Fact_vs_%20Fiction%209.2018.pdf

New Horizon-Meditation & Sleep Stories. (2017). Meditation Mindfulness for Kids. YouTube. Retrieved June 4, 2020, from https://www.youtube.com/playlist?list=OLAK5uy_kZjTXw9V79bCjXVxGXNToUJfN0BW5NNBM

Nutt, A. (2018, May 10). Why kids and teens may face far more anxiety these days. *The Washington Post*. https://www.washingtonpost.com/news/to-your-health/wp/2018/05/10/why-kids-and-teens-may-face-far-more-anxiety-these-days/

Oberle, E. & Schonert-Reichl, K. (2014). Mindfulness in adolescence. *New directions for youth development, 142.*

Oberle, E., & Schonert-Reichl, K. (2016). Stress contagion in the classroom? The link between classroom teacher burnout and morning cortisol in elementary school students. *Social Science and Medicine, 159*, 30.

Owens, M., Stevenson, J., Hadwin, J., & Norgate, R. (2012). Anxiety and depression in academic performance: An exploration of the mediating factors of worry and working memory. *School Psychology International, 33*(4), 433-449.

Palouse Mindfulness. (2017, April 6). *MBSR Yoga- 20 minute version* [Video]. YouTube. Retrieved June 4, 2020, from https://www.youtube.com/watch?v=rWfsThgLBCs&feature=emb_title

Papastylianou, A., Kaila, M., & Polychronopoulos, M. (2009). Teachers' burnout, depression, role ambiguity and conflict. *Social Psychology of Education, 12*(3), 295-314.

Park, T., Reilly-Spong, M., & Gross, C. (2013). Mindfulness: A systematic review of instruments to measure an emergent patient-reported outcome (PRO). *Quality of Life Research : An International Journal of Quality of Life Aspects of Treatment, Care and Rehabilitation, 22*(10), 2639-2659.

People in Pain Network. (2016, July 18). *Jon Kabat Zinn Body Scan Meditation GUIDED MEDITATION* [VIDEO]. YouTube. Retrieved June 4, 2020, from https://www.youtube.com/watch?v=u4gZgnCy5ew&feature=emb_title

Perry, B., Pollard, R., Blakley, T., Baker, W., Vigilante, D., Scheeringa, Michael S., & Osofsky, Joy D. (1995). Childhood trauma, the neurobiology of adaptation, and "use‐dependent" development of the brain: How "states" become "traits". *Infant Mental Health Journal, 16*(4), 271-291.

Pi, E. (1943). *The man and the beasts. Primitive hunting and fishing. Jaguar hunting with blowgun in Brazil.* [Photograph]. Encyclopædia Britannica ImageQuest. https://quest.eb.com/search/144_2849798/1/144_2849798/cite

Pithers, R. (1998). Scottish and Australian teacher stress and strain: A comparative study. *British Journal of Educational Psychology, 68*(2), 269-279.

Plemmons, G., Hall, M., Doupnik, S., Gay, J., Brown, C., Browning, W., Casey, R., Freundlich, K., Johnson, D., Lind, C., Rehm, K., Thomas, S., & Williams, D. (2018). Hospitalization for suicide ideation or attempt: 2008–2015. *Pediatrics*, *141*(6), e20172426. 10.1542/peds.2017-2426

Powell, A. (2018, April 9). When Science Meets Mindfulness. *The Harvard Gazette.* https://news.harvard.edu/gazette/story/2018/04/harvard-researchers-study-how-mindfulness-may-change-the-brain-in-depressed-patients/

Prilleltensky, I., Neff, M., & Bessell, A. (2016). Teacher stress: What it is, why it's important, how it can be alleviated. *Theory Into Practice, 55*(2), 104-111.

Rosaen, C., & Benn, R. (2006). The experience of transcendental meditation in middle school students: A qualitative report. *Explore: The Journal of Science and Healing,* 2, 422–425. doi:10.1016/j.explore.2006.06.001.

Running brain, conceptual artwork. [Photography]. Retrieved June 4, 2020, from Encyclopædia Britannica ImageQuest. https://quest.eb.com/search/132_1288954/1/132_1288954/cite

Ruscio, A.M., Hallion L.S., Lim C., Aguilar-Gaxiola S., Al-Hamzawi A., Alonso J., Andrade, L., Borges, G., Bromet, E., Bunting, B., Caldas de Almeida, J., Demyttenaere, K., Florescu, S., Girolamo, G., Gureje, O., Haro, J., He, Y., Hinkov, H., Hu, C., Jonge, P., Karam, E., Lee, S., Lepine, J., Levinson, D., Mneimneh, Z., Navarro-Mateu, F., Posada-Villa, J., Slade, T., Stein, D., Torres, Y., Uda, H., Wojtyniak, B., Kessler., R., Chatterji, S., Scott, K. (2017, March 15). Cross-sectional comparison of the epidemiology of DSM-5 generalized anxiety disorder across the globe. *JAMA Psychiatry,* 74(5) 465-475.

Salzman, J. B. (2016, August 23). *"Release"* [Video]. YouTube. Retrieved June 4, 2020, from https://www.youtube.com/watch?v=GVWRvVH5gBQ&feature=emb_title

Santorelli, S. F., Meleo-Meyer, F., Koerbel, L., Kabat-Zinn, J. (2017). Mindfulness-Based Stress Reduction (MBSR) Authorized Curriculum Guide. *Center for Mindfulness in Medicine, Health Care, and Society, University of Massachusetts Medical School. Retrived from* https://www.umassmed.edu/globalassets/center-for-mindfulness/documents/mbsr-curriculum-guide-2017.pdf.

Sauter, S., Murphy, L., Colligan, M., Swanson, N., Hurrell, J., Scharf, F. S., et al. (1999). Stress at work (DHHS Publication No. 99-101). Cincinnati, OH: National Institute for Occupational Safety and Health.

Scheffler, R., Arnold, D., Qazi, H., Harney, J., Linde, L., Dimick, G., & Vora, N. (2018). The anxious generation: Causes and consequences of anxiety disorder among young americans preliminary findings. *Berkeley Institute for the Future of Young Americans Goldman School of Public Policy*. https://gspp.berkeley.edu/assets/uploads/page/Policy_Brief_Final_071618.pdf

Shapiro, L. E. (2016). Mindful Coloring: A Simple & Fun Way to Reduce the Stress in Your Life. *Between Sessions Resources.* https://www.betweensessions.com/wp-content/uploads/2014/02/mindfulness-coloring-book-4_25-16.pdf

Simha Studios LLC. (2012). ConZentrate [Mobile App]. App Store. REtrieved June 4, 2020, from https://apps.apple.com/us/app/conzentrate/id493897333

Seton, H. (2019). The Elephant in the Classroom. *Educational Leadership,* 77(2), 77-80.

Siegel, D. J., (2010). Hand Model of the Brain. [drawing]. *Bantam Books.*

Shahidi, S., Akbari, H., & Zargar, F. (2017). Effectiveness of mindfulness-based stress reduction on emotion regulation and test anxiety in female high school students. *Journal of Education and Health Promotion, 6*, 87.

Shearer, A., Hunt, M., Chowdhury, M., & Nicol, L. (2016). Effects of a brief mindfulness meditation intervention on student stress and heart rate variability. *International Journal of Stress Management, 23*(2), 232-254.

Shirley, P. W. *Sub-Atomic* [Photography]. flickr.

Singh, N., Lancioni, N., Karazsia, G., Felver, E., Myers, B., & Nugent, T. (2016). Effects of samatha meditation on active academic engagement and math performance of students with attention deficit/hyperactivity disorder. *Mindfulness, 7*(1), 68-75.

Singh, Nirbhay N, Schonert-Reichl, Kimberly A, & Roeser, Robert W. (2016). Handbook of mindfulness in education: Integrating theory and research into practice (1st ed. 2016 ed., Mindfulness in Behavioral Health). New York, NY: Springer New York.

Stein, Dan J, Scott, Kate M, De Jonge, Peter, Kessler, R. C. (2017) Epidemiology of anxiety disorders: From surveys to nosology and back. *Dialogues in Clinical Neuroscience, 19*(2), 127-136.

Stop, Breathe & Think [Screen name]. (2016, March 4). *Kindness Meditation (Strengthen Happiness)* [Video]. YouTube. Retrieved June 4, 2020, from https://www.youtube.com/watch?v=R2EOqFBCmy8&feature=emb_title

Stress or depression. [Photography]. Encyclopædia Britannica ImageQuest. https://quest.eb.com/search/132_1268595/1/132_1268595/cite.

Students Eat Lunch In The School Cafeteria. [Photographer]. Encyclopædia Britannica ImageQuest. https://quest.eb.com/search/115_2672094/1/115_2672094/cite.

Sutcher, L., Darling-Hammond, L., Carver-Thomas, D. (2016) *A coming crisis in teaching?* Teacher Supply, Demand, and Shortages in the U.S. Palo Alto, CA: *Learning Policy Institute*

Tacón, A. M., McComb, J., Caldera, Y., & Randolph, P. (2003). Mindfulness meditation, anxiety reduction, and heart disease: A pilot study. *Family & Community Health, 26*(1), 25-33.

Tang, Y. (2017). *The Neuroscience of Mindfulness Meditation How the Body and Mind Work Together to Change Our Behaviour* (1st ed. 2017. ed., Palgrave pivot). *Cham: Springer International Publishing: Imprint: Palgrave Macmillan.*

Teasdale, W., Segal, Z., Kabat-Zinn, J. (2007) Eating One Raisin: A First Taste of Mindfulness. Adapted from: The Mindful Way through Depression: Freeing Yourself from Chronic Unhappiness. Guilford Press. https://ggia.berkeley.edu/practice/raisin_meditation#data-tab-sources

Teflon coating on frying pan. [Photography]. Encyclopædia Britannica ImageQuest. https://quest.eb.com/search/139_1936500/1/139_1936500/cite

TEDx Talks. (2013, February 14). Mindfulness in Schools: Richard Burnett at TEDxWhitechapel [Video]. YouTube. Retrieved June 4, 2020, from https://www.youtube.com/watch?v=6mlk6xD_xAQ&feature=emb_title

TEDxTalks. (2017, December 13). 30 seconds to mindfulness | Phil Boissiere | TEDxNaperville. [Video]. YouTube. Retrieved June 4, 2020, from https://www.youtube.com/watch?v=ad7HqXEc2Sc

Telles, S., Singh, N., Bhardwaj, A., Kumar, A., & Balkrishna, A. (2013). Effect of yoga or physical exercise on physical, cognitive and emotional measures in children: A randomized controlled trial. *Child and Adolescent Psychiatry and Mental Health, 7*(1), 37.

Telles, S., Gupta, R., Bhardwaj, A., Singh, N., Mishra, P., Pal, D., & Balkrishna, A. (2018). Increased Mental Well-Being and Reduced State Anxiety in Teachers After Participation in a Residential Yoga Program. *Medical Science Monitor Basic Research, 24*, 105-112.

Timeshifter Inc. (2020). Mental Workout [Mobile App]. Retrieved June 4, 2020, from https://www.mentalworkout.com/apps

Trafton, A (2019, August 26). Two studies reveal benefits of mindfulness for middle school students. http://news.mit.edu/2019/mindfulness-mental-health-benefits-students-0826

Tobin, K., King, D., Henderson, S., Bellocchi, A., & Ritchie, S. (2016). Expression of emotions and physiological changes during teaching. Cultural Studies of Science Education, 11(3), 669-692.

VELCRO. Shoe Fastener. Nylon sewn under infrared light, forms indestructible hooks which latch onto the opposing fabric loops. The idea was inspired by the hitchhiker seeds of burs. [Photograph]. Encyclopædia Britannica ImageQuest. https://quest.eb.com/search/157_1248996/1/157_1248996/cite

Verde, S. & Reynolds, P. H. (2015, September 8). I am Yoga. *Harry N. Abrams.*

Viafora, D., Mathiesen, P., & Unsworth, S. (2015). Teaching mindfulness to middle school students and homeless youth in school classrooms. *Journal of Child and Family Studies, 24*(5), 1179-1191.

Watkins, E. R. (2008). Constructive and unconstructive repetitive thought. *Psychological Bulletin,* 134, 163–206.

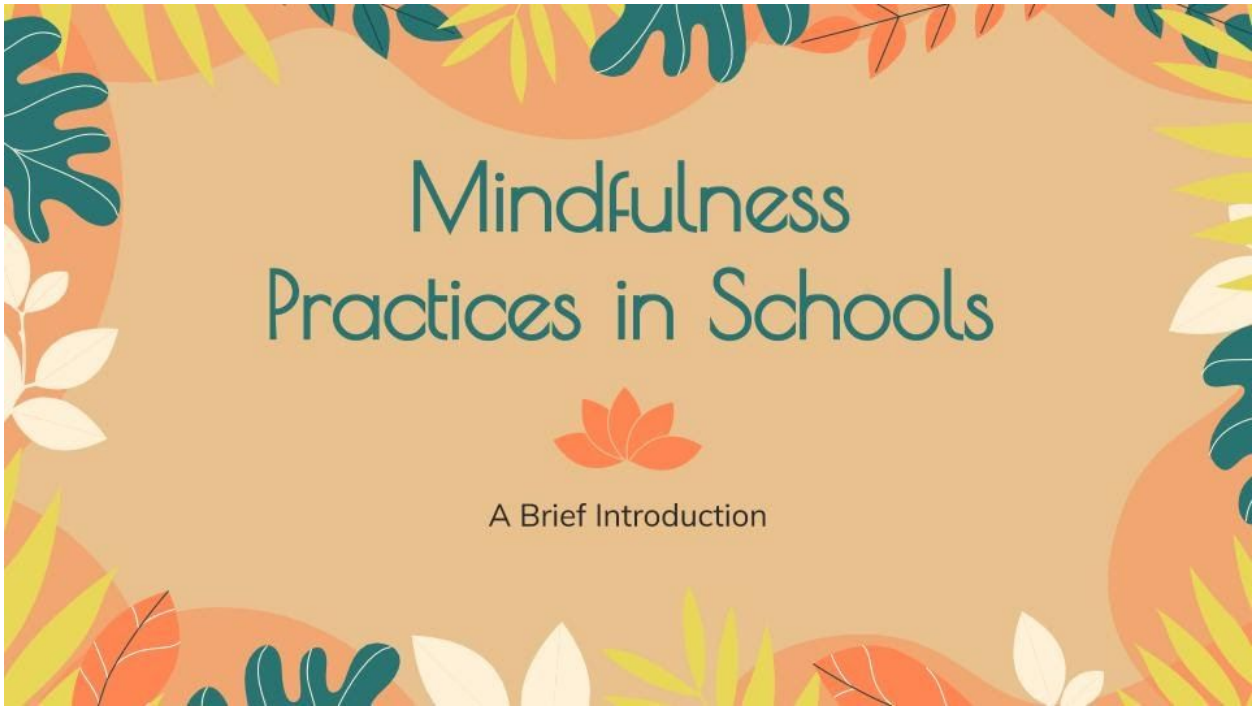
Weems, C., Scott, B., Taylor, L., Cannon, M., Romano, D., & Perry, A. (2013). A theoretical model of continuity in anxiety and links to academic achievement in disaster-exposed school children. *Development and Psychopathology, 25*(3), 729-737.

Wiggan, G., Smith, D. & Watson-Vandiver, M.J. (2020). The national teacher shortage, urban education and the cognitive sociology of labor. *Urban Rev* . https://doi.org/10.1007/s11256-020-00565-z

Wisner, B. (2017). Mindfulness and Meditation for Adolescents Practices and Programs (1st ed. 2017. ed.). *New York: Palgrave Macmillan US : Imprint: Palgrave Macmillan.*

Wong A. (September 20, 2018). Why schools are banning yoga. *The Atlantic.* https://www.theatlantic.com/education/archive/2018/09/why-schools-are-banning-yoga/570904/

Appendix A

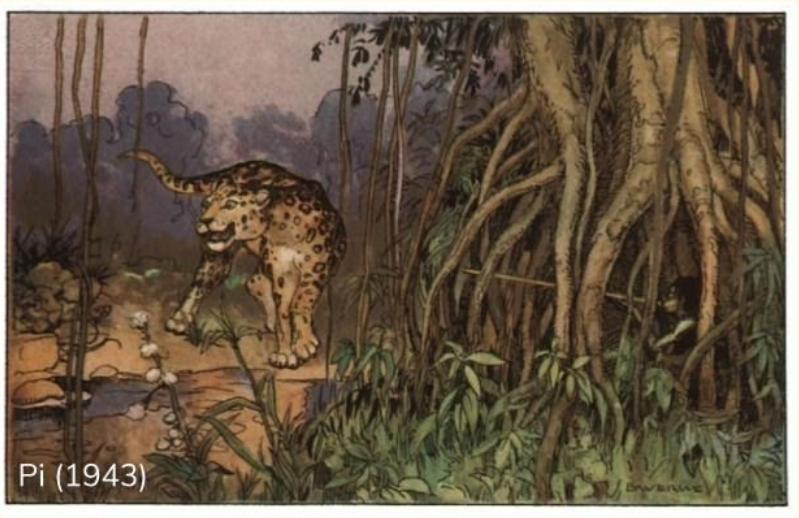


What is Mindfulness?

"Mindfulness means paying attention in a particular way: on purpose, in the present moment, and nonjudgmentally."

-Jon Kabat- Zinn

What's Wrong?



Pi (1943)

Good Experiences vs. Bad Experiences

Teflon coating on frying pan.

Teflon coating on frying pan.

Train the brain- The Muscle of our Attention

Running brain, conceptual artwork

Stress and Illness

Cortisol is a suppressor of the immune system.

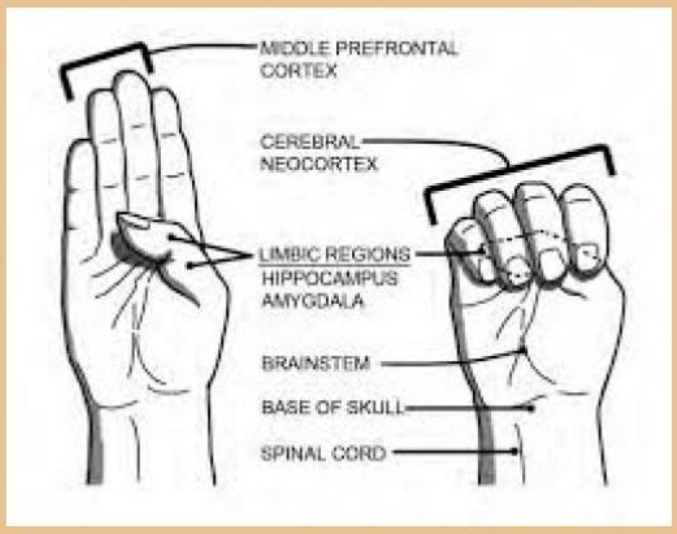
File: Cortisol-3D-skeletal-sticks.png (2014)

Reacting vs. Responding

Stress or Depression

Montserrat (2016)

Hand Model of the Brain- Daniel J. Siegel



Siegel, D. J. (2010)

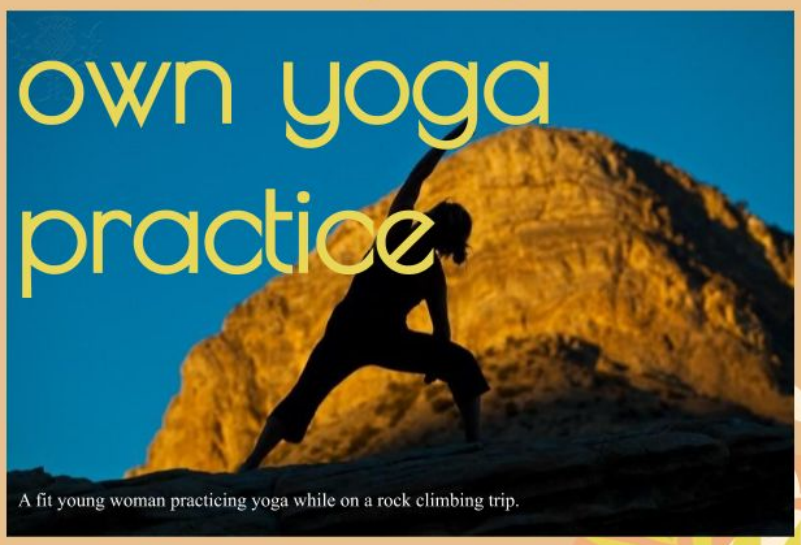
Mindfulness Practices for Educators

Mindfulness-Based Stress Reduction

A Taste of Mindfulness

3x3 Method-Phil Boissiere

Develop your own yoga practice

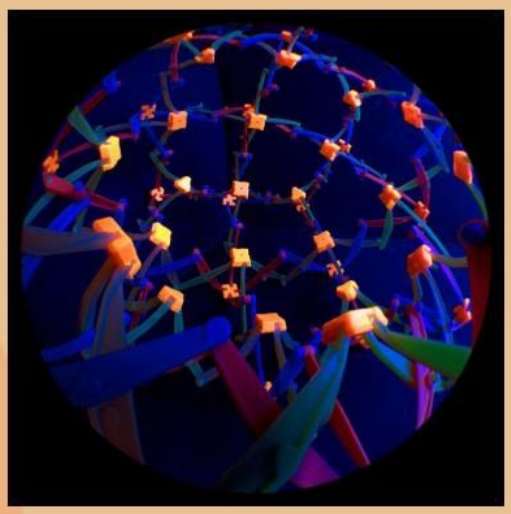


A fit young woman practicing yoga while on a rock climbing trip.

Mindfulness Practices for Students

Meditation: child's face and projected circles

Hoberman Original Sphere



Shirley, P. W.

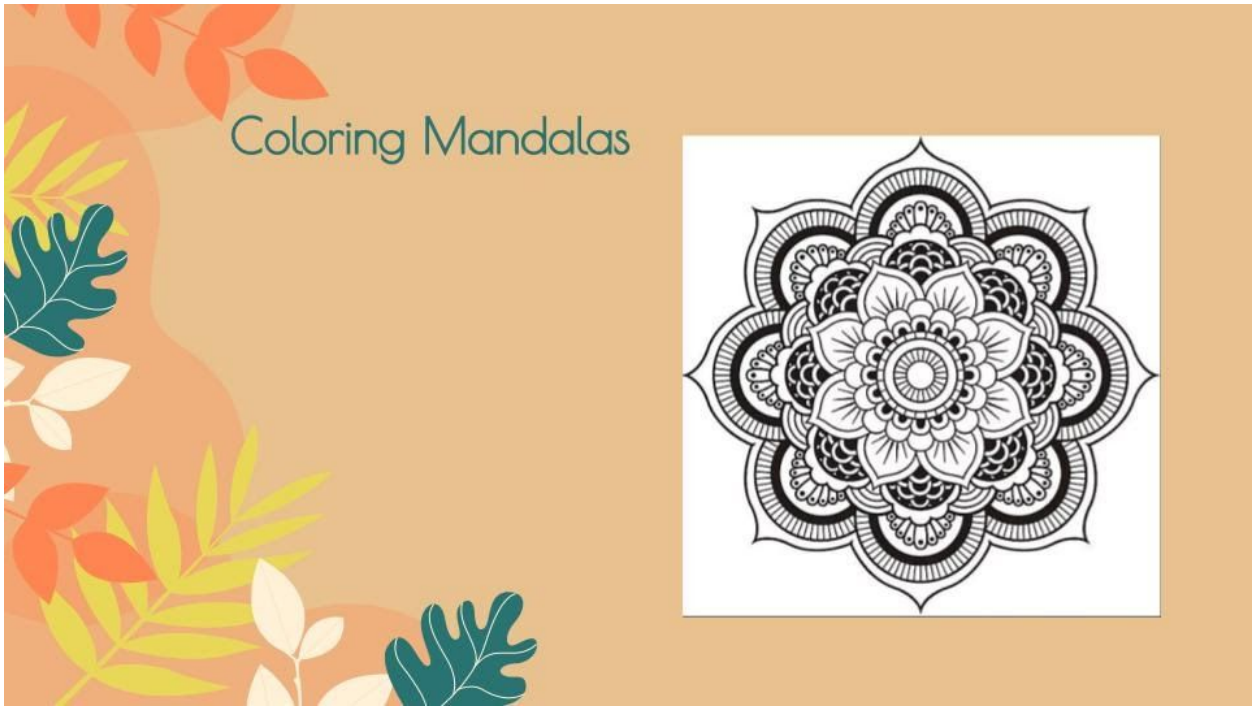
Calm

Calm

Mindful Eating

Students Eat Lunch In The School Cafeteria.


Stop, Breathe & Think


Coloring Mandalas

Thanks!

Do you have any questions?

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Works Cited

A fit young woman practicing yoga while on a rock climbing trip. [Photo]. Retrieved from Encyclopædia Britannica ImageQuest. https://quest.eb.com/search/167_4022979/1/167_4022979/cite.

Angry boy in a classroom. [Photograph]. Retrieved from Encyclopædia Britannica ImageQuest. https://quest.eb.com/search/132_1378135/1/132_1378135/cite.

Chocolate. [Photography]. Retrieved from Encyclopædia Britannica ImageQuest. https://quest.eb.com/search/132_1255150/1/132_1255150/cite.

File:Cortisol-3D-skeletal-sticks.png. (2014, December 8). *Wikimedia Commons, the free media repository*. Retrieved 18:28, June 4, 2020 from https://commons.wikimedia.org/w/index.php?title=File:Cortisol-3D-skeletal-sticks.png&oldid=141809484.

Kripalu Center for Yoga & Health. (2015). Kripalu Mandala Coloring Book. *Kripalu Center for Yoga & Health.* Retrieved from https://kripalu.org/sites/default/files/pdfs/kripalu_mandala_coloringbook.pdf

Levitt, T. (2020). Body Scans. *Calm.* Retrieved from https://app.www.calm.com/program/whzIxMJxVR/body-scan

Meditation: child's face and projected circles. [Photography]. Retrieved from Encyclopædia Britannica ImageQuest. https://quest.eb.com/search/132_1278855/1/132_1278855/cite

Works Cited

Montserrat, P. (2016) Does Mindfulness Belong in Public Schools? [Illustration]. *Marlena Agency.* Retrieved from https://tricycle.org/magazine/does-mindfulness-belong-public-schools/

MyLife Meditation. (2020). Stop. Breathe. Think [Mobile App]. App Store. https://apps.apple.com/US/app/id778848692?mt=8

Pi, E. (1943). *The man and the beasts. Primitive hunting and fishing. Jaguar hunting with blowgun in Brazil.* [Photograph]. Retrieved from Encyclopædia Britannica ImageQuest. https://quest.eb.com/search/144_2849798/1/144_2849798/cite

Running brain, conceptual artwork. [Photography]. Retrieved from Encyclopædia Britannica ImageQuest. https://quest.eb.com/search/132_1288954/1/132_1288954/cite

Shirley, P. W. *Sub-Atomic* [Photography]. Retrieved from flickr.

Siegel, D. J., (2010). Hand Model of the Brain. [drawing]. *Bantam Books.*

Stress or depression. [Photography]. Retrieved from Encyclopædia Britannica ImageQuest. https://quest.eb.com/search/132_1268595/1/132_1268595/cite.

Works Cited

Students Eat Lunch In The School Cafeteria. [Photographer]. Retrieved from Encyclopædia Britannica ImageQuest. https://quest.eb.com/search/115_2672094/1/115_2672094/cite.

Teasdale, W., Segal, Z., Kabat-Zinn, J. (2007) Eating One Raisin: A First Taste of Mindfulness. Adapted from: The Mindful Way through Depression: Freeing Yourself from Chronic Unhappiness. *New York: Guilford Press.* Retrieved from https://ggia.berkeley.edu/practice/raisin_meditation#data-tab-sources

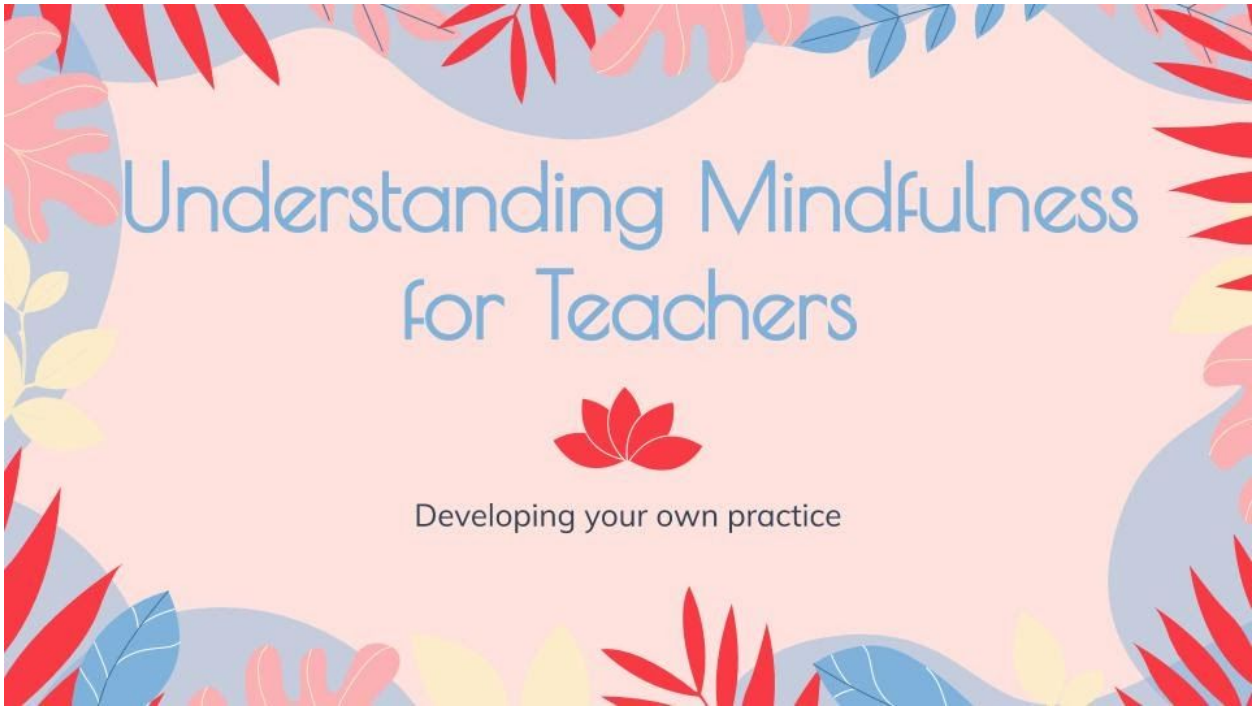
Teflon coating on frying pan. [Photography]. Retrieved from Encyclopædia Britannica ImageQuest. https://quest.eb.com/search/139_1936500/1/139_1936500/cite

TEDx Talks. (2013, February 14). Mindfulness in Schools: Richard Burnett at TEDxWhitechapel [Video]. YouTube. https://www.youtube.com/watch?v=6mlk6xD_xAQ&feature=emb_title

TEDxTalks. (2017, December 13). 30 seconds to mindfulness | Phil Boissiere | TEDxNaperville. [Video]. YouTube. https://www.youtube.com/watch?v=ad7HqXEc2Sc

VELCRO. Shoe Fastener. Nylon sewn under infrared light, forms indestructible hooks which latch onto the opposing fabric loops. The idea was inspired by the hitchhiker seeds of burs. [Photograph]. Retrieved from Encyclopædia Britannica ImageQuest. https://quest.eb.com/search/157_1248996/1/157_1248996/cite

Appendix B


Understanding Mindfulness for Teachers
Developing your own practice

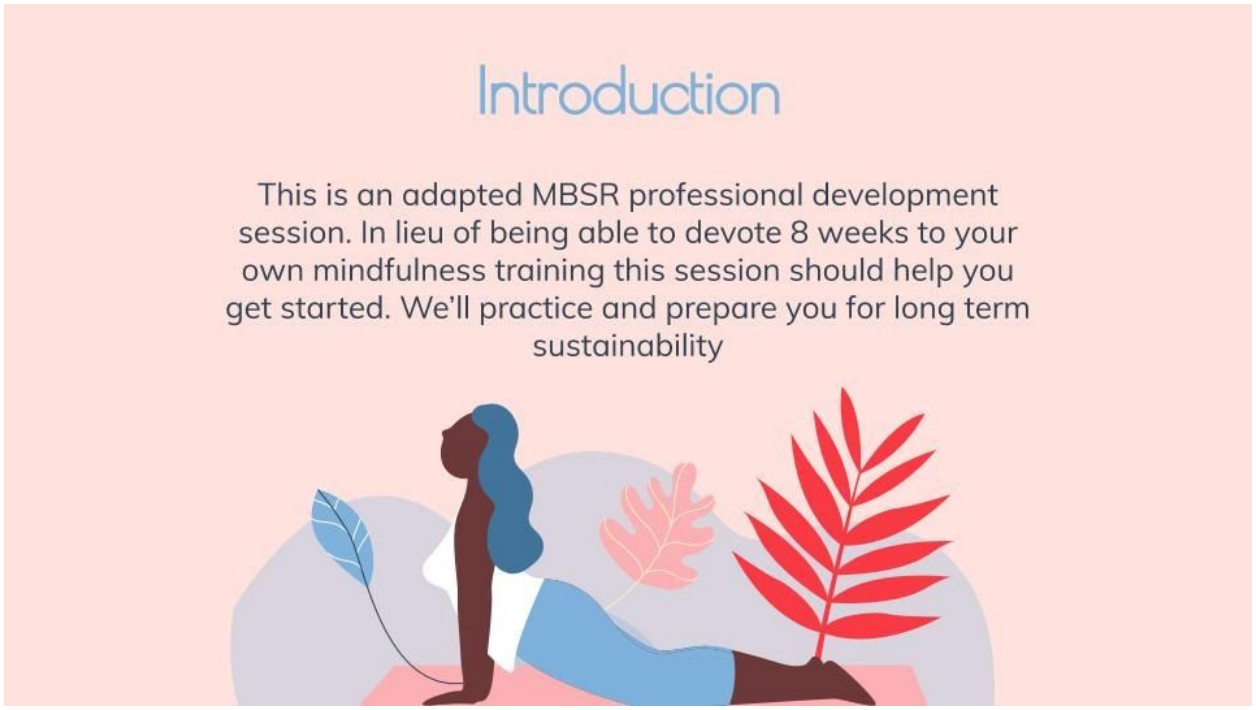
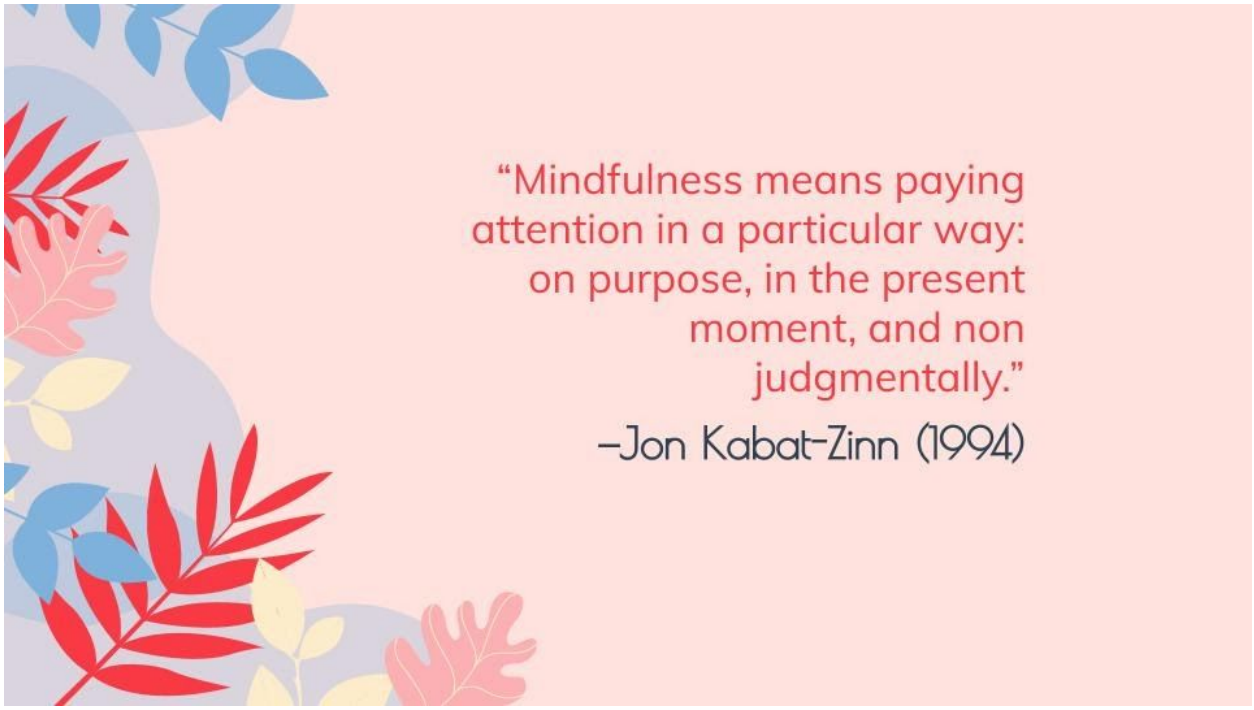

Introduction
This is an adapted MBSR professional development session. In lieu of being able to devote 8 weeks to your own mindfulness training this session should help you get started. We'll practice and prepare you for long term sustainability


Table of Contents
The Big Idea
Here you'll be introduced to MBSR
01
Let's Practice
Here you'll be provided with an experience of mindfulness
02
On Your Own Now
Here you'll be equipped with resources for your home practice.
03


"Mindfulness means paying attention in a particular way: on purpose, in the present moment, and non judgmentally."
–Jon Kabat-Zinn (1994)

01

The Big Idea

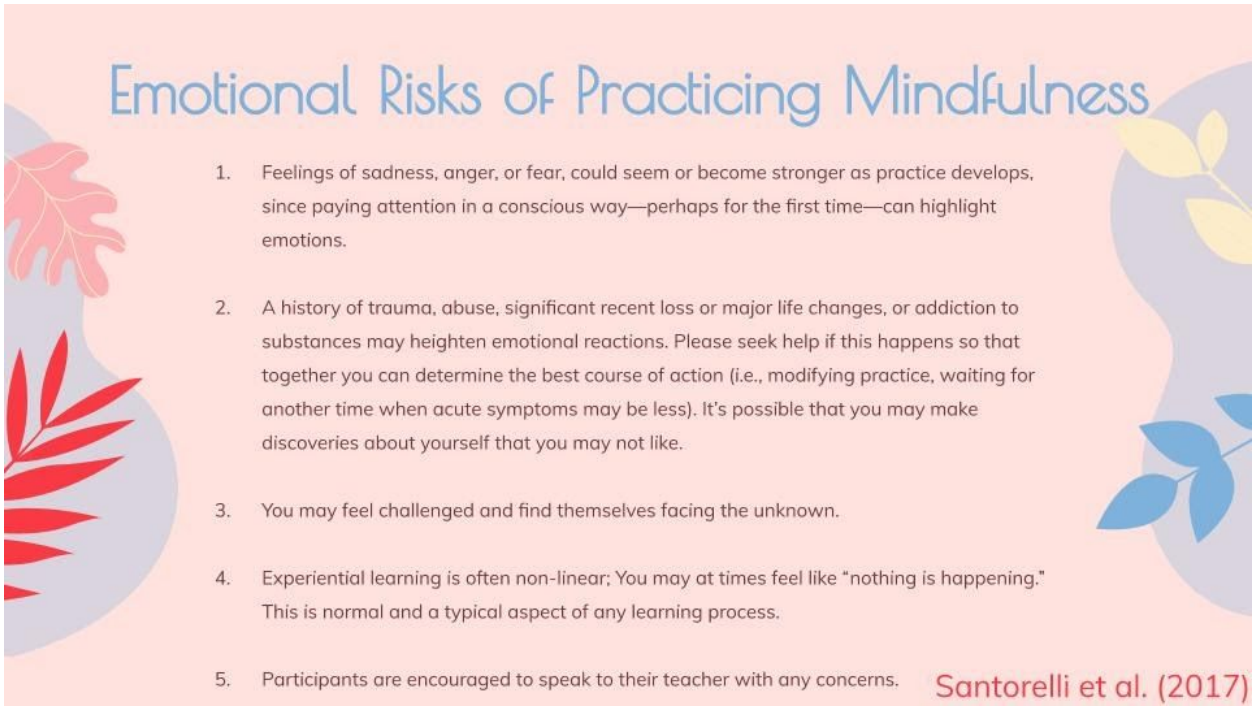
Just Breathe

An Introduction to MBSR

UMass Medical School & Center for Mindfulness

Mindfulness 360- Center for Mindfulness(2017)

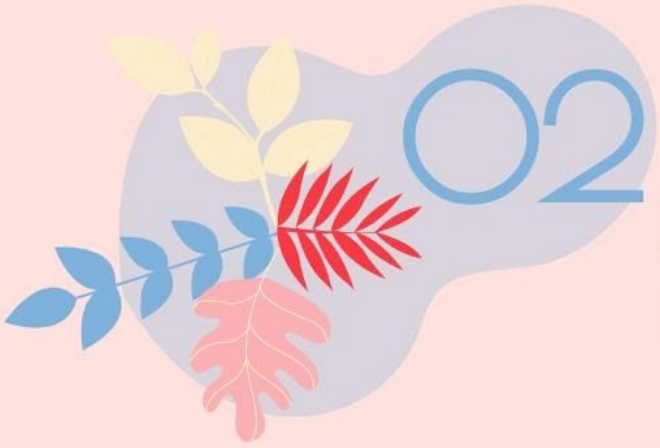

Benefits of Practicing Mindfulness
1. Increase your awareness and concentration
2. Discovering new ways to cope more effectively
3. Learning to take better care of yourself
4. Many physical, psychological and emotional health benefits of MBSR have been reported in scientific literature


Emotional Risks of Practicing Mindfulness
1. Feelings of sadness, anger, or fear, could seem or become stronger as practice develops, since paying attention in a conscious way—perhaps for the first time—can highlight emotions.
2. A history of trauma, abuse, significant recent loss or major life changes, or addiction to substances may heighten emotional reactions. Please seek help if this happens so that together you can determine the best course of action (i.e., modifying practice, waiting for another time when acute symptoms may be less). It's possible that you may make discoveries about yourself that you may not like.
3. You may feel challenged and find themselves facing the unknown.
4. Experiential learning is often non-linear; You may at times feel like "nothing is happening." This is normal and a typical aspect of any learning process.
5. Participants are encouraged to speak to their teacher with any concerns.
Santorelli et al. (2017)

Physical Risks of Practicing Mindfulness

1. The primary physical risk is connected to practicing yoga.
2. Knowing oneself and taking care of oneself is at the core of mindfulness.
3. If you ever hear guidance that you know is not appropriate for your body or condition, or if anything causes pain, the correct action is to disregard the teacher and either modify the pose/movement, rest and imagine doing the pose/movement, or notice and acknowledge any thoughts or emotions that may be arising in the experience of not doing the pose/movement. Focus is on exploring one's physical limits, by going to the edge of those limits, but not beyond. This exploration is done slowly and with sensitivity, guided by the teacher.
4. Being aware of the body from moment to moment and in everyday situations is an essential aspect of MBSR. The formal yoga sequences are a structured way of developing greater body awareness, and as such, are awareness practices rather than practices to develop a specific form or alignment that is often emphasized in other types of yoga.
5. Participants with physical conditions or limitations should ask their healthcare provider to review the postures in the practice manual, and to suggest only those postures that are suitable.

Santorelli et al. (2017)



Let's Practice

Resources for home practice

Formal vs. Informal Practices

Formal Practices

- Yoga
- Sitting Meditation
- Body Scan
- Walking Meditation

Informal Practices

- Mindful Eating
- Speaking
- Listening
- Mindfulness in daily activities

Mindful Yoga

Formal Practice

Palouse (2017)

Mindful Eating

Informal Practice

03

On Your Own Now

Resources for home practice

As long as you are breathing, there is more right with you than wrong with you, no matter what challenges you are facing. Challenges and difficulties are workable.

-Santorelli et al. (2017)

Home Practice

Jon Kabat Zinn Body Scan Meditation GUIDED MEDITATION

People in Pain Network (2016)

Other People In Your Life May

- Your relationships may change as attention deepens and new behaviors evolve.
- You may experience changes in reactivity, behavior and communication, and family, friends and/or co-workers may be uncomfortable with these new behaviors or attitudes.

Request assistance from family, friends and/or co-workers who may be supportive.

Thanks!

Do you have any questions?

Resources

Did you like the resources on this template? Get them for free at our other websites.

Vectors

- Meditation concept illustration
- Flat sport landing page template
- Meditation landing page concept
- Meditation illustrated concept for landing page
- Flat sport landing page template II
- People doing yoga collection
- Vesak day
- Spa elements collection with aromatic liquids
- Meditation and relaxation landing page template

Photos

- Pretty eyes closed woman meditating with mudra gesture in garden
- Beautiful woman meditation with mudra gesture near tree in garden

Works Cited

Kabat-Zinn, J. (1994). Wherever you go, there you are: Mindfulness meditation in everyday life. New York, NY: Hyperion.

Mindfulness 360- Center for Mindfulness. (2017, November 16). *Introduction to MBSR- UMass Medical School & Center for Mindfulness* [Video]. YouTube. https://www.youtube.com/watch?v=Y0LArEJ_sRo&feature=emb_title.

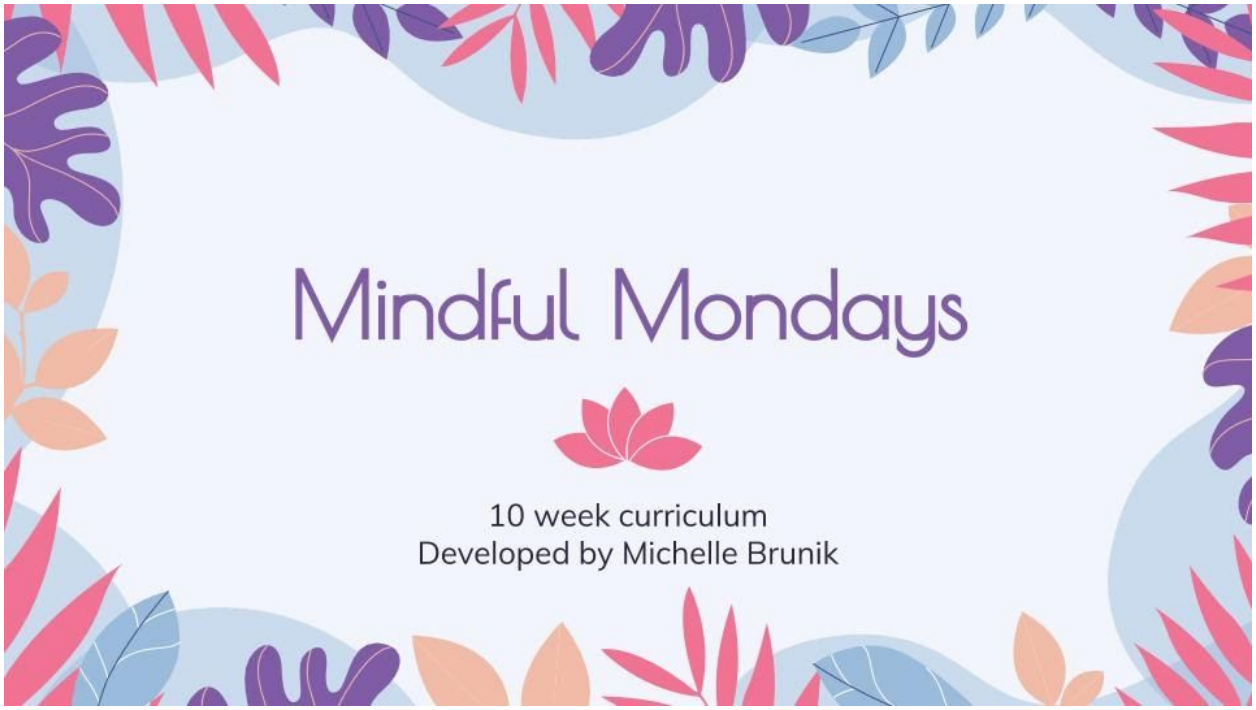
Palouse Mindfulness. (2017, April 6). *MBSR Yoga- 20 minute version* [Video]. https://www.youtube.com/watch?v=rWfsThgLBCs&feature=emb_title

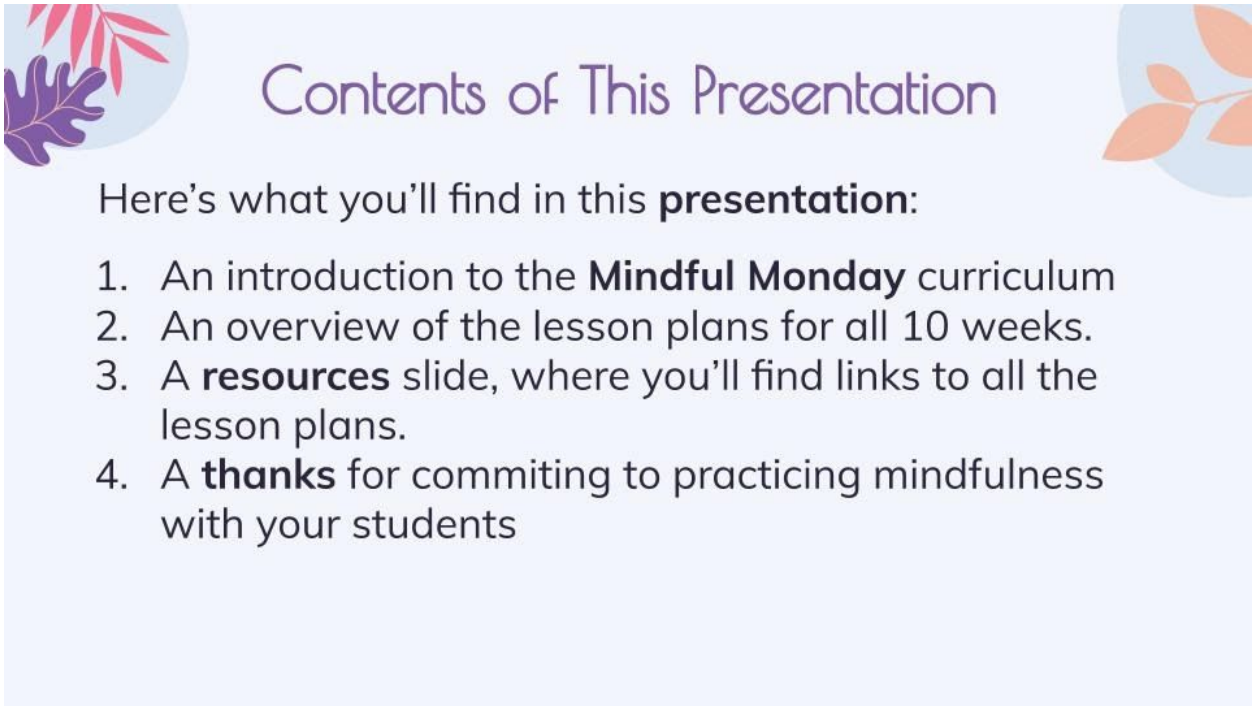
People in Pain Network. (2016, July 18). *Jon kabat Zinn Body Scan Meditation GUIDED MEDITATION* [Video]. https://www.youtube.com/watch?v=u4gZgnCy5ew&feature=emb_title

Works Cited

Santorelli, S. F., Meleo-Meyer, F., Koerbel, L., Kabat-Zinn, J. (2017). Mindfulness-Based Stress Reduction (MBSR) Authorized Curriculum Guide. *Center for Mindfulness in Medicine, Health Care, and Society, University of Massachusetts Medical School. Retrived from* https://www.umassmed.edu/globalassets/center-for-mindfulness/documents/mbsr-curriculum-guide-2017.pdf.

Appendix C


Mindful Mondays
10 week curriculum
Developed by Michelle Brunik


Contents of This Presentation
Here's what you'll find in this **presentation**:
1. An introduction to the **Mindful Monday** curriculum
2. An overview of the lesson plans for all 10 weeks.
3. A **resources** slide, where you'll find links to all the lesson plans.
4. A **thanks** for commiting to practicing mindfulness with your students

Introduction to Mindful Mondays

Mindful Monday lessons are designed to take no more than 10-15 minutes of class time. The curriculum is designed to provide students with a mindfulness-based intervention that will help them seek benefits such as:

- improvements in their physical health
- better ability to regulate their emotions
- reduction in anxiety
- increased academic performance
- improved resilience

Table of Contents

Table of Contents

Table of Contents

Smile, breathe, and go slowly

–Thich Nhat Hanh

How Can Mindful Mondays Help

Reduce Anxiety

Help students manage their stress and anxiety

Focus Attention

Teach students what it feel like to practice focusing and understand you must exercise your mind just like your body

Understand the Brain

Lean the physiology behind what makes us lose control

Control Emotions

Learn that experiencing and feeling emotions is a universal human experience.

The Curriculum

Week	Monday
1	Lesson 1
2	Lesson 2
3	Lesson 3
4	Lesson 4
5	Lesson 5
6	Lesson 6
7	Lesson 7
8	Lesson 8
9	Lesson 9
10	Lesson 10

- Reduce Anxiety
- Improve Grades
- Improve Behavior

Introduction to Social Emotional Learning

Through Mindfulness

Just Breathe

Julie Bayer Salzman & Josh Salzman
Wavecrest Films

Glitter Jars

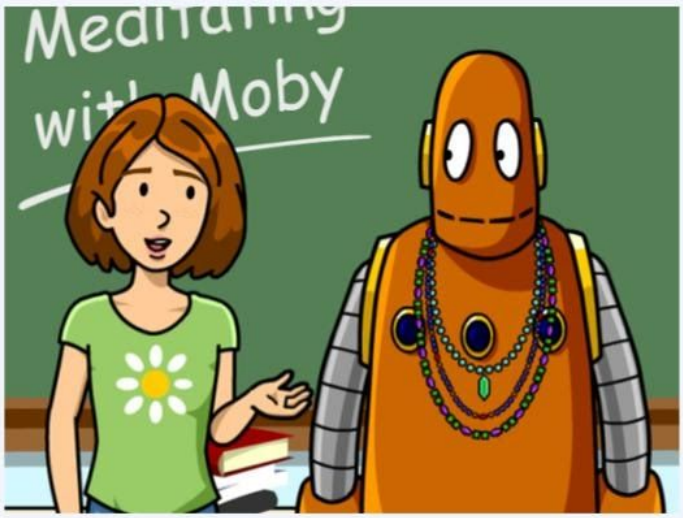
Have students make Glitter Jars to help them calm down and relax. A mindfulness tool that they can use for weeks to come.

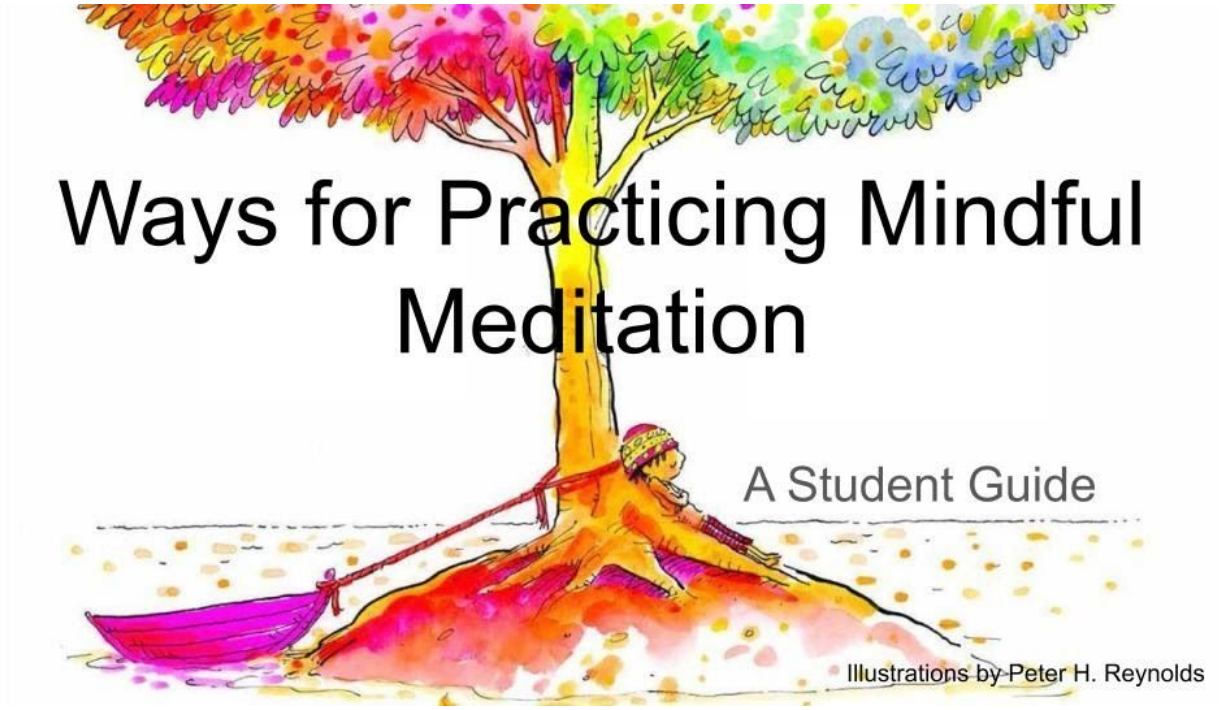
02

Introduction to Mindfulness

What is mindfulness?
Let's practice!

What is Mindfulness?





First Guided Meditation


03
Taming the Animal Brain
How does our brain react under stress


Why Do We Lose Control of Our Emotions?
Kids Want to Know
Why do we lose CONTROL of our emotions?


04
Paying
Attention
Harnessing focus
with Mindfulness

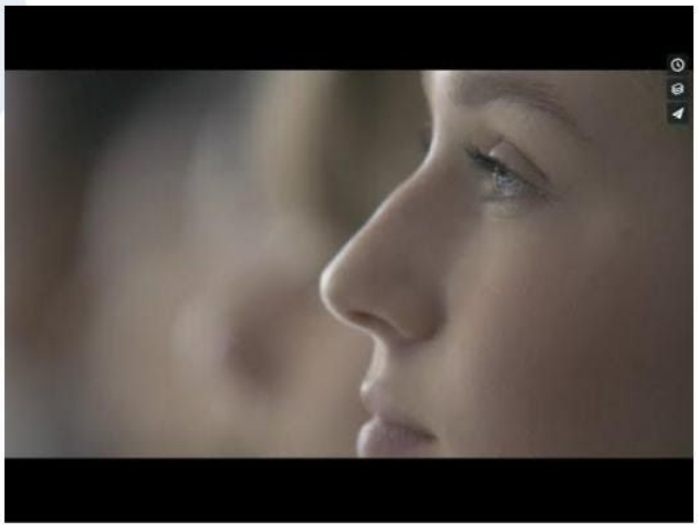

Focused Attention Meditation
with Rich Fernandez
barkarola/Adobe Stock

05 Understanding Stress

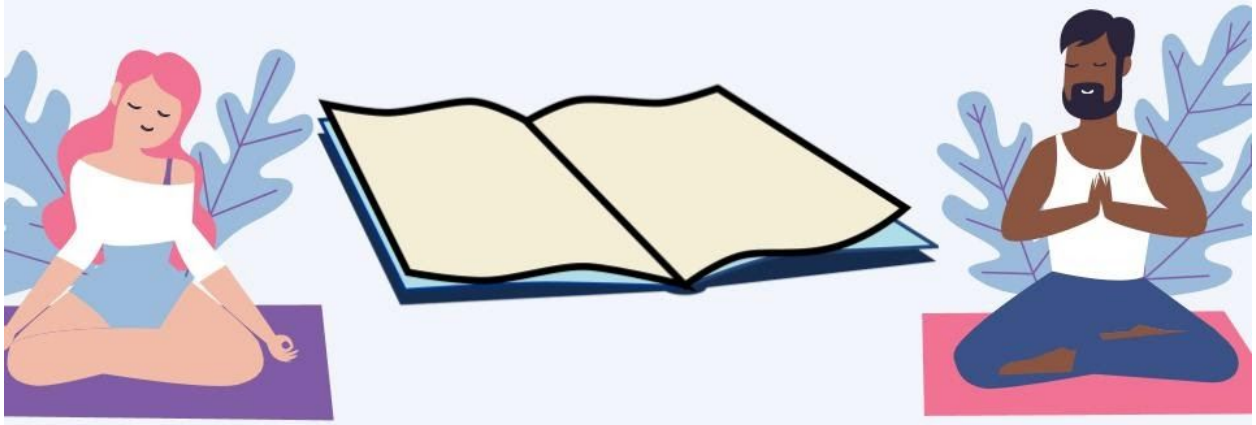
Managing Strong Emotions with mindful journaling

"Release"

Julie Bayer Salzman & Josh Salzman
Wavecrest Films



Expressive Writing Worksheet



The Science of Kindness

Harnessing Kindness
through mindfulness

The Science of Kindness

Life Vest

Kindness Meditation (Strengthen Happiness)

Stop, Breathe & Think

07

Moving Mindfully

Becoming mindful with yoga

Move your Body with Yoga


08
Watching your own Thoughts
Understanding the traffic in your mind and learning to let go


Meditation For Letting Go
By Jessica Amos

09

Being Here Now

From reacting to responding

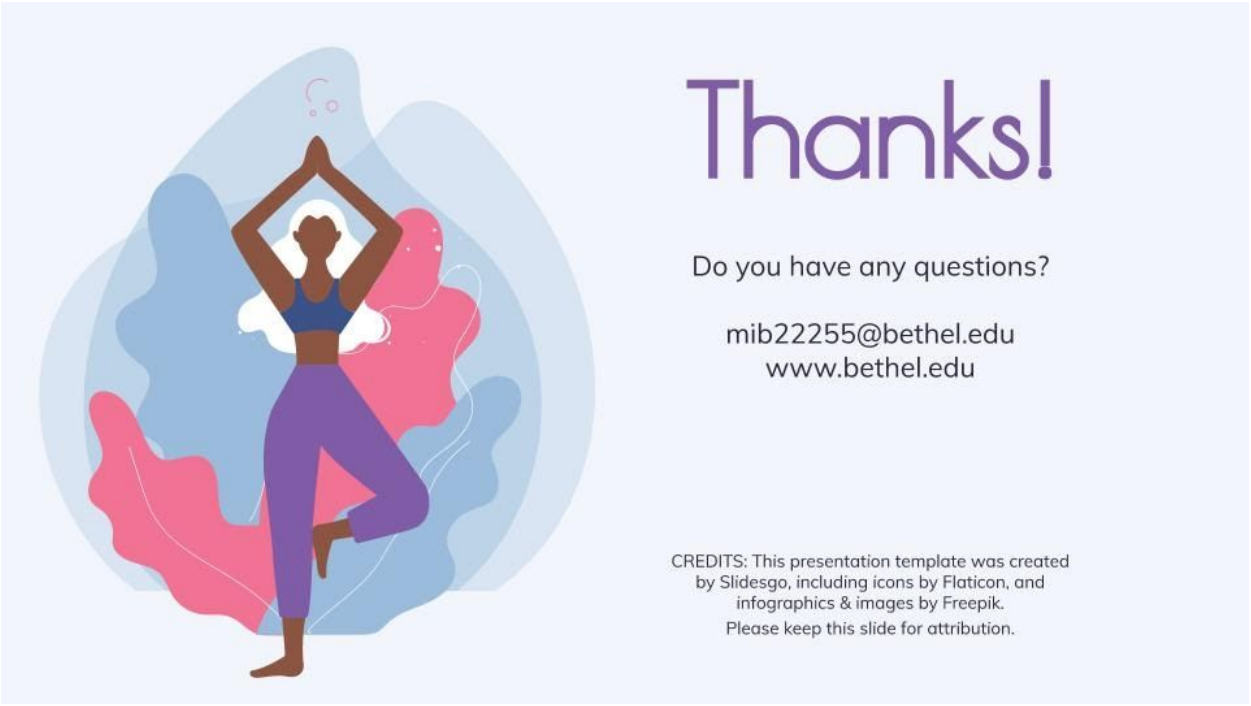
Relaxed Open-hearted Presence with Tara Brach

10

Taking in the Good

Being present with yourself

Body Scan with Tamara Levitt


Thanks!
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www.bethel.edu
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Works Cited

Amos, J. (2020). Meditation For Letting Go [Video file]. *Insight Timer.* Retrieved from https://insighttimer.com/staywithyourself/guided-meditations/meditation-for-letting-go

Brach, T. (2020) Relaxed Open-hearted Presence. *Calm*. Retrieved from https://app.www.calm.com/program/h3RRWaz-33/relaxed-open-hearted-presence

Brainpop. (2020) Mindfulness. [Video] Brainpop. https://www.brainpop.com/english/studyandreadingskills/mindfulness/

Fernandez, R. (2018, September 26). Focused Attention Meditation with Rich Fernandez. [Video file]. *Mindful.* Retrieved from *https://www.mindful.org/a-meditation-to-focus-attention/*

Kids Want to Know. (2017, March 12). Why do we lose control of our emotions? [Video]. *YouTube.* https://www.youtube.com/watch?v=3bKuoH8CkFc.

Levitt, T. (2020). Body Scans. *Calm.* Retrieved from https://app.www.calm.com/program/whzIxMJxVR/body-scan

Works Cited

LifeVestInside. (2013, July 21). The Science of Kindness (Life Vest Inside) [Video]. YouTube. https://www.youtube.com/watch?v=FA1qgXovaxU&feature=emb_title

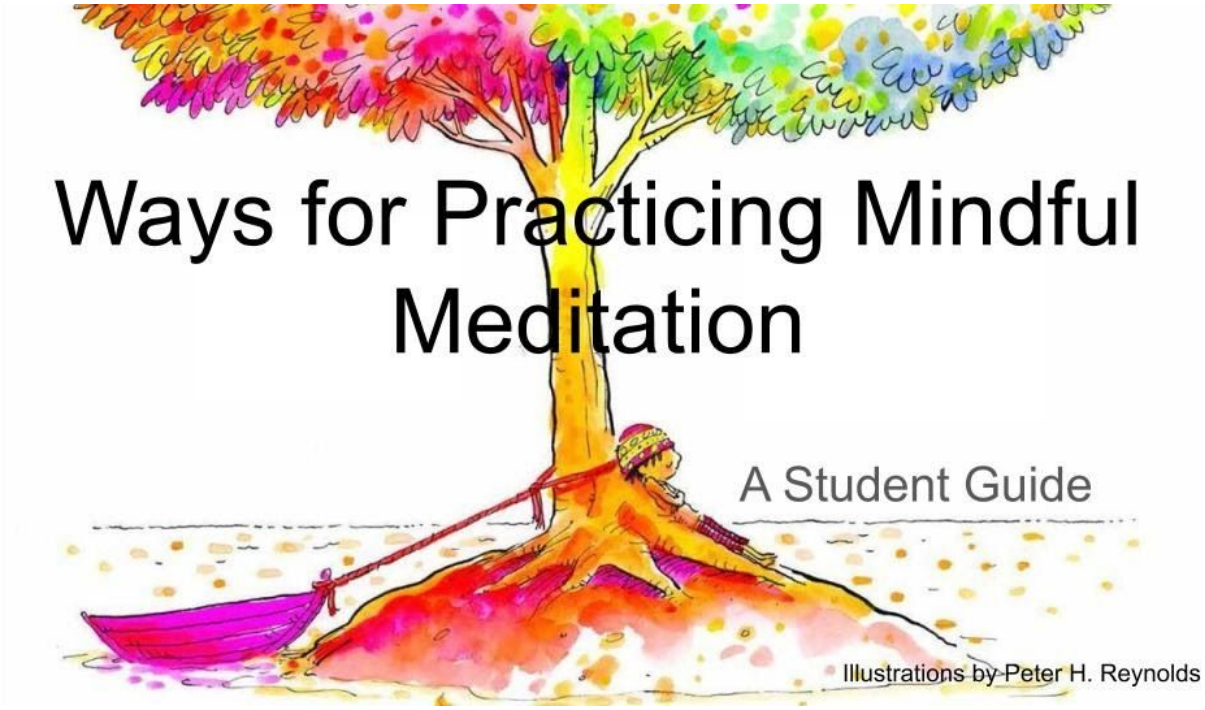
Mindful Schools. (2015, January 26). *"Just Breathe" by Julie Bayer Salzman & Josh Salzman (Wavecrest Films)* [Video]. YouTube. https://www.youtube.com/watch?v=RVA2N6tX2cg&feature=emb_title

Salzman, J. B. (2016, August 23). *"Release"* [Video]. YouTube. https://www.youtube.com/watch?v=GVWRvVH5gBQ&feature=emb_title

Stop, Breathe & Think [Screen name]. (2016, March 4). *Kindness Meditation (Strengthen Happiness)* [Video]. YouTube. https://www.youtube.com/watch?v=R2EOqFBCmy8&feature=emb_title

Verde, S. & Reynolds, P. H. (2015, September 8). I am Yoga. *Harry N. Abrams.*

Appendix D



There are a number of ways to practice mindfulness...

1. Do a mindful meditation on your own
2. Be guided through a meditation from your teacher with your class
3. Be guided through a meditation with an app, video, or other auditory media
4. Practice mindful coloring
5. Go on a mindful walk
6. Go on a mindful run
7. Practice mindful exercise like yoga or tai chi
8. Practice mindful eating
9. Write mindfully in a gratitude journal

Illustrations by Peter H. Reynolds

Meditating On Your Own

Choose Your Posture

1. Sit on a chair
   a. Feet planted on the floor
2. Sit on the floor
   a. Cross legged
      i. Quarter lotus
      ii. Half lotus
      iii. Full lotus
3. Lie on your back
   a. Corpse pose with palms up
   b. Corpse pose with palms down

Illustrations by Peter H. Reynolds

Guided Meditation with Your Teacher and Class

1. Find a comfortable pose- just like you would on your own (your teacher may ask that you remain in your chair)
2. Close your eyes- only if you're comfortable and you feel safe
3. Breathe deep- start with 6 seconds in, 6 seconds out
4. Listen- for your teacher to guide you

Illustrations by Peter H. Reynolds

Guided Meditation Apps

1. Breathe
2. Buddhify
3. Calm
4. ConZentrate
5. Headspace
6. Insight Timer
7. The Mindfulness App
8. Mindfulness Daily
9. Mindfulness Meditation App
10. Simply Being

Illustrations by Peter H. Reynolds

Guided Meditation YouTube and Soundcloud Channels

1. Calmer Choice
2. Headspace
3. Calm
4. ConZentrate
5. Insight Timer
6. The Mindful Movement
7. New Horizon
8. Fabelefy
9. Flourish Foundation

Illustrations by Peter H. Reynolds

Practicing Mindful Meditation with Coloring

1. Change to Chill
2. Between Sessions
3. Kripalu Mandala Coloring Book

Illustrations by Peter H. Reynolds

Mindful Eating

To begin mindful eating follow these steps...

- Decide what you will eat
- Take a look at your food. What do you notice?
- Smell your food. What do you notice?
- Begin to listen to the sounds around you as you eat. Does your food make any sounds? Perhaps it's a juicy fruit sloshing and dropping or its the wrapping of your food crinkling as you unwrap it.
- What do you feel? Is your food warm or cold? Is it smooth, rough, or sticky?
- Place the food on your tongue, but don't chew it yet! What do you notice?
- Start to chew slowly. One bite at a time. How does the taste change?
- Notice the sensation of swallowing. How far can you sense the food as it goes into your body?

Illustrations by Peter H. Reynolds

Works Cited

Allina Health. (2016). Change to Chill. *Allina Health System.* Retrieved from https://www.changetochill.org/activities-tools/

Calm. (2020). *Daily Calm* [playlist]. YouTube. Retrieved June 4, 2020, from https://www.youtube.com/watch?v=5vI8Kh3-epg&list=PLgdxvG3Ulbidz8n_l3rZdcAADnDJ6NFHO

Calm.com, Inc. (2019). Calm [Mobile App]. App Store. https://apps.apple.com/us/app/calm/id571800810

CalmerChoice. (2013). *CalmerChoice Channel.* YouTube. Retrieved June 4, 2020, from https://www.youtube.com/user/calmerchoice/videos

Conzentrate UK. (2016). *Guided Mindfulness Meditation Practice* [Video]. YouTube. Retrieved June 4, 2020, from https://www.youtube.com/channel/UCRKnSe1J-1okphw3mN4glaA

Headspace. (2018). *Mini meditation* [playlist]. YouTube. Retrieved June 4, 2020, from https://www.youtube.com/watch?v=nsGbtrl1WkU&list=PLW8o3_GFoCBOexWd8WK-hAjReSYifh1nx

Works Cited

Fablefy- The Whole Child. (2020). Mindfulness For Teens and Adults [Playlist]. YouTube. Retrieved June 4, 2020, from https://www.youtube.com/watch?v=tcnJz2R0hx0&list=PLOL43Ch9yQXwEEcxFIAsX3CjSWKgLJYBs

Fernando, R. (2011) Mindful Eating. *Mindful Schools.* Retrieved from https://www.mindfulschools.org/personal-practice/mindful-eating

Flourish Foundation. (2019). Flourish Mediation | Kids [Playlist]. Soundcloud. Retrieved June 4, 2020, from https://soundcloud.com/user-822338142/sets/flourish-meditation-kids

Insight Network Inc. (2019). Insight Timer- Meditation App [Mobile App]. Retrieved from https://apps.apple.com/us/app/insight-timer-meditation-app/id337472899

Insight Timer. (2019). Insight Timer [Playlist]. YouTube. Retrieved June 4, 2020, from https://www.youtube.com/channel/UCA1raD2uELPTbm-J3h1Z34g/featured

INWARD, INC. (2014). Mindfulness Daily [Mobile App]. Retrieved from https://apps.apple.com/us/app/mindfulness-daily/id701112447?ls=1

Works Cited

Kripalu Center for Yoga & Health. (2015). Kripalu Mandala Coloring Book. *Kripalu Center for Yoga & Health.* Retrieved from https://kripalu.org/sites/default/files/pdfs/kripalu_mandala_coloringbook.pdf

Meditation Oasis. (2009). Simply Being- Guided Meditation for Relaxation and Presence [Mobile App]. Retrieved from https://apps.apple.com/us/app/simply-being-guided-meditation-for-relaxation-presence/id347418999

MindApps. (2019). The Mindfulness App [Mobile App]. Retrieved from https://apps.apple.com/us/app/mindfulness-app-guided-silent/id417071430

Mindfulness Everywhere Ltd. (2015). Buddhify [Mobile App]. App Store. https://apps.apple.com/gb/app/buddhify-mindfulness-meditation/id687421118

The Mindful Movement. (2017). The Mindful Movement [Playlist]. YouTube. Retrieved June 4, 2020, from https://www.youtube.com/channel/UCu_mPlZbomAgNzfAUElRL7w/videos

MyLife Meditation. (2018). Stop. Breathe & Think [Mobile App]. App Store. https://apps.apple.com/US/app/id778848692?mt=8

Works Cited

New Horizon-Meditation & Sleep Stories. (2017). Meditation Mindfulness for Kids [Playlist]. YouTube. Retrieved June 4, 2020, from https://www.youtube.com/playlist?list=OLAK5uy_kZjTXw9V79bCjXVxGXNToUJfN0BW5NNBM

Shapiro, L. E. (2016). Mindful Coloring: A Simple & Fun Way to Reduce the Stress in Your Life. *Between Sessions Resources.* Retrieved from https://www.betweensessions.com/wp-content/uploads/2014/02/mindfulness-coloring-book-4_25-16.pdf

Simha Studios LLC. (2012). ConZentrate [Mobile App]. App Store. https://apps.apple.com/us/app/conzentrate/id493897333

Timeshifter Inc. (2020). Mental Workout [Mobile App] Retrieved from https://www.mentalworkout.com/apps

Verde, S. & Reynolds, P. H. (2015, September 8). I am Yoga. *Harry N. Abrams.*

Appendix E

Name Hr

Modeling the Brian Under Stress

Directions: Create a video or code an animation that explains and demonstrates Dr. Daniel Siegel's hand model. Watch Dr. Harris (2016) explain the handle model in the YouTube video called: ***The Three Main Parts Of Your Brain by Dr. Russ Harris.***

Rubric:

	Excellent	**Good**	**Satisfactory**
Audio	The explanation of what happens to the brain (Dr. Siegel's brain model) under stress is loud, clear, and articulate There is no doubt the students understand the neurophysiology based on their use of vocabulary terms such as: brain, reptilian brain, mammalian brain (limbic), human brain	The explanation of what happens to the brain under stress is somewhat loud, clear, and articulate. There is some doubt that the student understands the neurophysiology of the model. May be missing key vocabulary terms such as: brain reptilian brain, mammalian brain (limbic), human brain	The explanation of what happens to the brain under stress is hard to hear and understand. Key neurophysiological vocabulary is missing or used incorrectly
Visual	The hand model is clearly demonstrated using a real hand or an animation. The parts (anatomy) of the brain are pointed to or labeled.	The hand model is demonstrated using a real hand or an animation. Some of the parts (anatomy) of the brain are pointed to or labeled.	The hand model is modeled incorrectly. It's clear the student doesn't understand how the hand represents the parts (anatomy) of the brain. Parts (anatomy) of the brain are missing or aren't labeled

Dr. Russ Harris- Acceptance Commitment Therapy. (2016, July 20). *The Three Main Parts Of Your Brain by Dr. Russ Harris* [Video]. YouTube. Retrieved from https://www.youtube.com/watch?v=5CpRY9-MIHA

Appendix F

Name Hr

Taming the Reptilian Brain

Information: There are three parts to our brains...

1. The oldest part, the most primitive, is the **reptilian brain**. It's composed of the brain stem, the part of the brain that connects to the spinal cord (the rest of the body), and the cerebellum. The lizard brain is responsible for running our body on autopilot. It activates during survival situations, fight or flight. It drives impulse and controls our most important core body functions.
2. The second oldest is the **mammalian brain**. It's composed of the limbic system, including the amygdala. The amygdala is responsible for controlling our emotions, feelings, memories, hopes, and dreams. This is the part of the brain that responds to desire. It's what makes you go skydiving, buy something luxurious, or travel to a new destination.
3. The third and "youngest" part of the brain is the **human brain** or the neocortex. The neocortex is responsible for high order thinking, abstract thinking, imagination, reason, logic, art and music. It's responsible for thinking. It's the part of the brain that helps you reason and rationalize especially when you're feeling intense emotions. It helps us think before we act.

1. _____ 2. _____ 3. _____

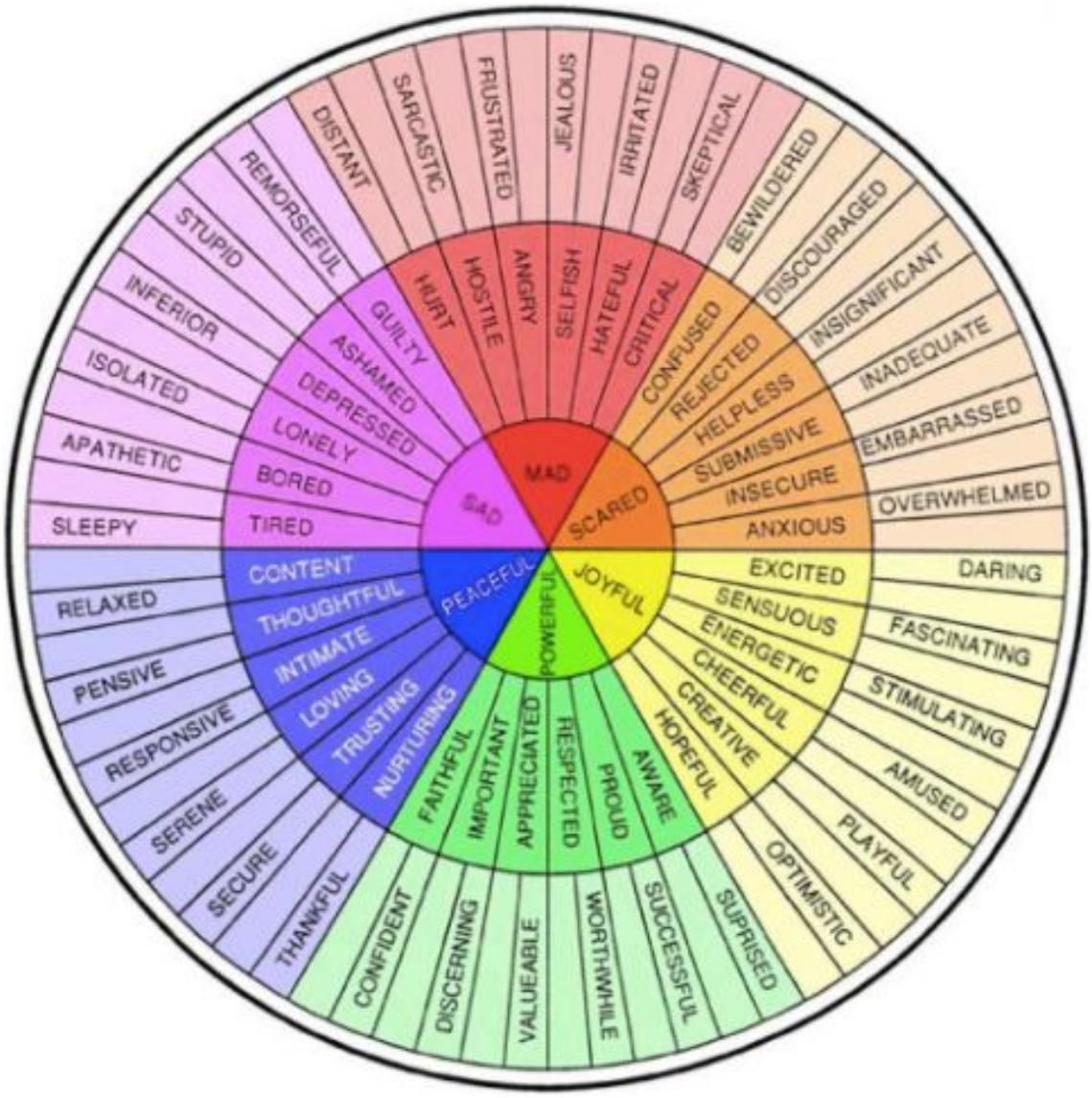
1. Can you guess which part of the brain is which? Choose from the following words and place them underneath the corresponding image of the brain above:

   Reptilian Brain **Mammalian Brain** **Human Brain**

2. How are you feeling today? Circle the emotion or emotions that you're feeling right now.

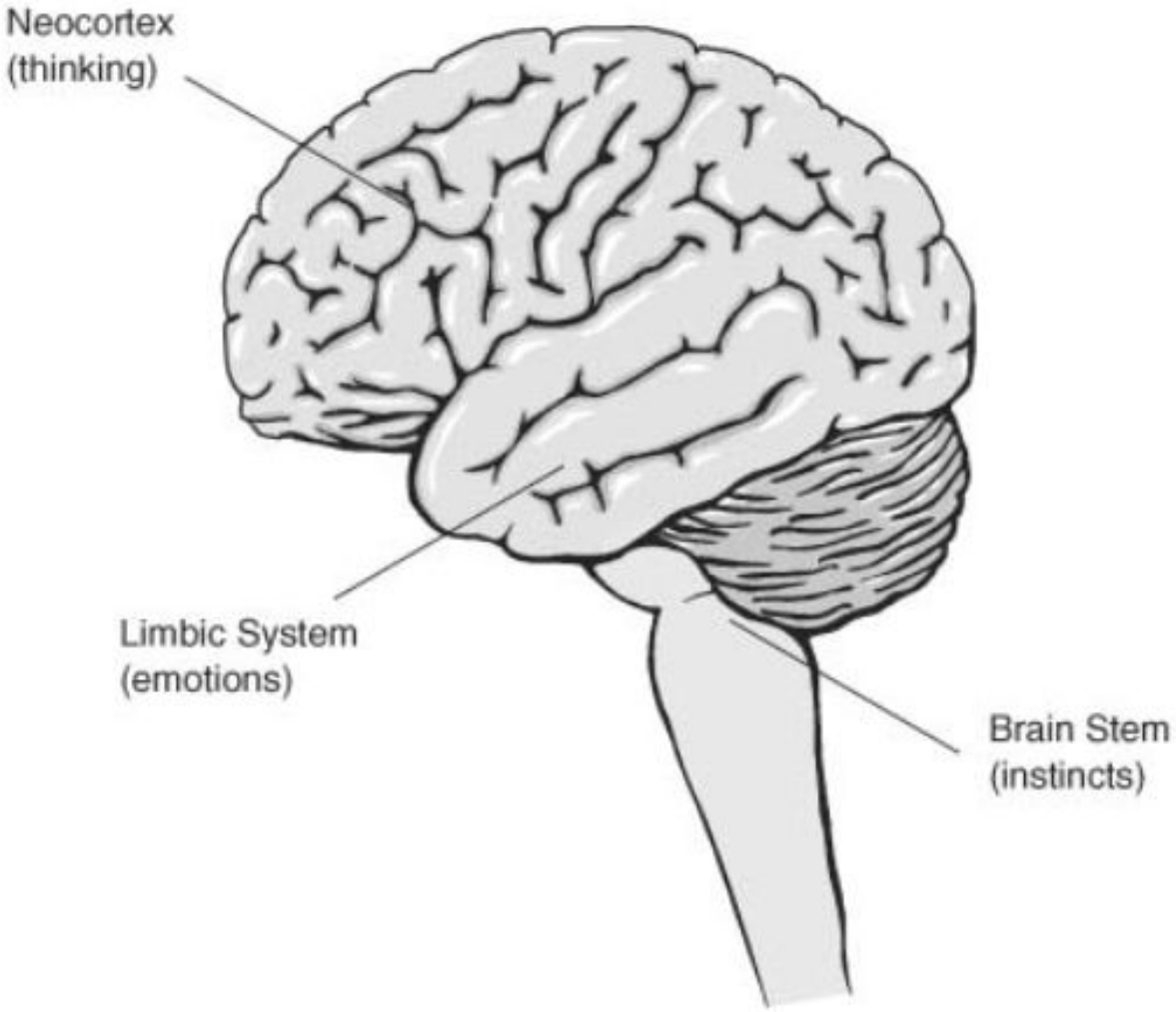
Dr. Russ Harris- Acceptance Commitment Therapy. (2016, July 20). *The Three Main Parts Of Your Brain by Dr. Russ Harris* [Video]. YouTube. Retrieved from https://www.youtube.com/watch?v=5CpRY9-MIHA

MacLean, Paul D. (1990). *The triune brain in evolution: role in paleocerebral functions*. New York: Plenum Press. ISBN 0-306-43168-8. OCLC 20295730.



Cal Poly Counseling Services (2019) Anxiety Toolbox: Student Workbook. *Counseling.calpoly.edu.* Retrieved from https://content-calpoly-edu.s3.amazonaws.com/hcs/1/documents/counseling/Anxiety%20Toolbox%20Student%20Workbook%202017%2008%2029.pdf

3. Color the human brain to reflect which part of the brain you think is active in your own body right now.



Appendix G

Name Hr

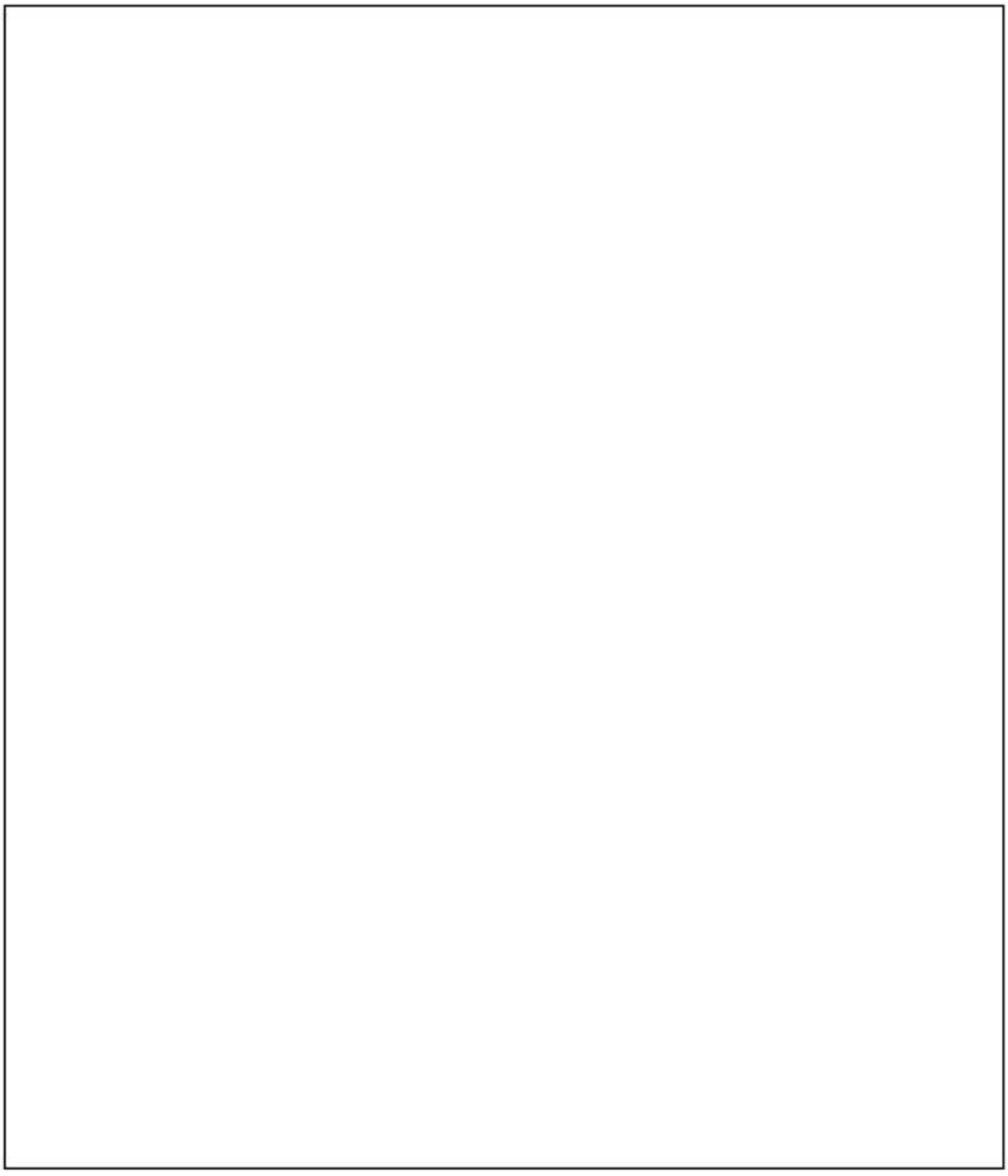
Expressive Writing Worksheet

Directions: Write down your deepest emotions and thoughts about an emotional challenge that has been affecting your life. In your writing, really let go and explore the event and how it has affected you. You might tie this experience to your childhood, your relationship with your parents, people you have loved or love now. Write continuously for 10 minutes.

Tips for writing:

- **Write continuously for at least 10 minutes.**
- **Don't worry about spelling or grammar.**
- **Write only for yourself (your teacher will not read this).**
- **Write about something extremely personal and important to you.**
- **Deal only with events or situations you can handle now—that is, don't write about a trauma too soon after it has happened if it feels too overwhelming.**

Greater Good Science Center UC Berkeley. (2020). Gratitude Journal for Students. *Greater Good Science Center at UC Berkeley and HopeLab*. Retrieved from https://ggia.berkeley.edu/practice/gratitude_journal_for_students



Greater Good Science Center UC Berkeley. (2020). Gratitude Journal for Students. *Greater Good Science Center at UC Berkeley and HopeLab*. Retrieved from **https://ggia.berkeley.edu/practice/gratitude_journal_for_students**