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## Impact of School-Based Mindfulness Programs in Elementary Schools

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Impact of School-Based Mindfulness Programs in Elementary Schools

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Concordia University, St. Paul

Master of Arts in Educational Leadership

ED 590: Research & Complete Capstone, Cohort 911

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DEDICATION

*To Jake, Theo, and Milo:*

*Thank you for providing an incredibly joyful environment to practice mindfulness.*

*It is nearly impossible to not be in the present moment when I am with “my boys.”*

## ACKNOWLEDGMENT

It is a pleasure to look back on my influences and supporters thus far in my educational journey. I will forever be grateful to Lenore Larson who stepped into my life at the perfect time to change my mind from majoring in business to majoring in education. Lenore's ability to connect with the so-called "misfit students" brought meaning to differentiated instruction even before it was a hot topic in education. I miss Lenore greatly and am happy to have had at least a little time working with her.

Early in my teaching career Katie Condon provided an excellent example of a creative, driven musician and educator. She continues to be a great support and sounding board as I find my own path in education.

I will always be grateful to my parents and in-laws who all worked in the same public school district. They have demonstrated loyalty, dedication, and tenacity in their educational careers.

I am extremely blessed to have two young boys of my own who influence how I teach. Theo and Milo have helped me see things through the eyes of a parent. Additionally, by my children teaching me the name of every dinosaur and superhero, I have been able to score major relatability points with my students!

Finally, I am incredibly grateful for my husband and his influence on my career. As a fellow teacher, Jake is able to brainstorm creatively with me and continue to talk about new educational trends. As a husband, Jake is supportive and caring. I am grateful for his willingness to listen to me contemplate my life's purpose each and every spring.

***Hannah Rosholt***

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### Abstract

Educators in the 21st Century face a myriad of emerging concerns with child and adolescent behavior. Surfacing educational issues include increased anxiety disorders, cyber bullying, students who have experienced trauma, increased aggressive behavior, absenteeism, and suicide ideation. As new concerns arise, educators seek ways to support students in these challenges. Mindfulness practice in schools has become more and more prevalent in the past twenty years. Research on adults who practice mindfulness has revealed lowered stress, increased resilience, and clearer focus. Researchers aim to understand the effects of mindfulness on children and adolescents. This paper analyzes how mindfulness practice impacts students' behavior, emotional well-being, and cognitive functioning. Utilizing fifteen various studies, the writer contemplates the question: In light of what is known about educational leadership, how does the implementation of school-based mindfulness programs impact elementary and middle school students in and out of the classroom?

*Keywords:* emotional well-being, mindfulness, resilience, self-regulation

## Impact of School-Based Mindfulness Programs in Elementary Schools

### **Chapter One: Introduction**

Educational reformer and philosopher Dewey once stated: “If we teach today’s students as we taught yesterday, we rob them of tomorrow.” As the world evolves at a rapid pace, so too should educators reflect on and question their instructional practices.

The new millennium brought with it a magnitude of emerging issues in adolescent behavior. Increased use and access to technology and the internet has invited cyberbullying, dopamine addiction, increased comparison to peers, and an avenue to see inappropriate images at a young age. Additionally, in the past decade, teachers and administrators have seen rising cases of anxiety in children, increased trauma and adversity, split families, child anger and aggression, increased ADHD cases, and disrupted sleep cycles (Schonert-Reichl et al., 2015; Yuan, 2020).

Optimistic educators hoped 2020 would bring clarity, after all 20/20 is perfect vision in the optometry office. Unfortunately, 2020 brought more stress and confusion: a global health pandemic generated a whole new list of concerns for educators and students. Without time to research or troubleshoot, teachers and families were burdened with how to effectively teach and learn virtually, and districts struggled to provide equitable learning remotely. In addition, students faced isolation and lack of interaction with peers which had potential to cause increased depression and anxiety (Yuan, 2020). In the United States, in addition to health concerns, children and parents grappled to make sense of the unprecedented political divide and tension as well as ongoing racial injustice. Teachers struggled with how to preach kindness and equity when the world around their students reflected the opposite. While the list of concerns for parents and educators spikes, the answers to said questions have not developed at as rapid a pace.



This research paper aims to evaluate the effectiveness of school-based mindfulness programs as a tool to support both teachers and students in response to the growing list of unmet challenges.

### **Importance of the Research**

As education practices continue to shift, educational leaders are looking for answers to emerging issues in adolescent behavior. These issues include: lack of self-regulation, poor academic motivation, anxiety, low resilience, school bullying and aggression (Yuan, 2020; Schonert-Reichl et al., 2015).

Since 2008, school-based mindfulness programs have been growing in popularity (Cheek, Abrams, Lipschitz, Vago, & Nakamura, 2017). Implementing a mindfulness program can be as simple as dedicating a few minutes each day for breathing techniques (Wisner & Starzec, 2015) or as involved as teaching neurobiology: how brains work and the function of the amygdala (Harpin, Rossi, Kim, & Swanson, 2016). Although taking deep breaths and noticing one's feelings without judgment prior to a mathematics lesson may seem trivial, the research studies explored in this paper prove that this small technique can be effective in combating very serious issues.

According to the Center for Disease Control and Prevention, one in six children ages two to eight have a mental, behavioral, or developmental disorder (2020). The suicide rate in children ages 10-14 increased 214% between 2008 and 2018 (Kamenetz, 2020). Multiple studies discussed in this paper revealed one of many outcomes of mindfulness is lower anxiety and lower risk for suicide ideation. That benefit alone might be enough to cause educators to consider implementing mindfulness. Furthermore, the studies examined in this paper linked mindfulness to improved academic performance, improved self-regulation, and positive peer relationships.

## Scope of Research

Researchers who have studied the effects of school-based mindfulness programs have discovered significant improvements in students' academic and social-emotional skills (Harpin et al., 2016). The first section of this paper will discuss improvements in student behavior. The writer will elaborate on improved relationships with peers, teachers and parents (Cheek et al., 2017) as well as an increase of self-awareness and self-regulation of emotions (Wisner & Starzec, 2015). Next, the writer will assess the effectiveness of mindfulness with relation to student emotional well-being in terms of anxiety, depression, resilience, and mindset (Biegel, Brown, Shapiro, & Schubert, 2009; Mostafazadeh, Ebadi, Mousavi, & Nouroozi, 2019; Yuan, 2020). Finally, the studies in this paper will provide quantitative evidence of improved student cognitive functioning including increased on-task behavior and the ability to pay attention for longer periods of time.

## Research Question

In light of what is known about educational leadership, how does the implementation of school-based mindfulness programs impact elementary and middle school students in and out of the classroom?

## Definition of Terms

***Emotional Well-Being*** encompasses a person's attitude, perceived stress level, resilience, and mindset (Bluth, Roberson, & Gaylord, 2015).

***Mindfulness*** refers to "paying attention in a particular way, on purpose, in the present moment, and nonjudgmentally" (Kabat-Zinn, 2003, p. 4).

*Resilience* can be defined as “the ability to positively adapt to stress, crisis, and adversity while remaining healthy” (Yuan, 2020, p. 1).

*Self-Regulation* refers to one’s ability to identify and adjust emotions, thoughts, and behaviors to shift to positive, acceptable behavior (Harpin et al., 2016).

### **Summary**

With the fast-paced changes in society and education the past twenty years, educators cannot keep up with the growing list of concerns for adolescents. Teachers have seen increased levels of anxiety and depression, larger achievement gaps, and growing tendencies for aggression and bullying at young ages. Social-Emotional Learning (SEL) has become a popular path for many elementary and middle schools. Mindfulness is one aspect of such SEL programs. Chapter One has provided an extensive list of current educational issues in elementary and middle schools in the United States of America.

The literature in Chapter Two will provide an in-depth exploration of mindfulness studies suggesting that mindfulness offers, if not a solution, a support or tool for educators themselves as well as their students. The studies will examine the effectiveness of mindfulness programs on children and adolescents in regards to their behavior, emotions, and cognitive function.

### **Chapter Two: Literature Review**

This literature review will analyze whether or not school-based mindfulness programs offer an effective method to foster students’ behavior and emotional well-being. Furthermore, the writer will examine if improved student behavior and mental health corresponds with academic achievement and learning. This chapter will provide an analysis of fifteen studies executed

worldwide, which examine the effects of mindfulness programs in schools for elementary students and adolescents.

The first section of the literature review will explore the theme of student behavior. The writer will reveal that participation in mindfulness programs in schools resulted in improvements in student behavior in the areas of relationships and self-regulation. Studies conducted by Black and Fernando (2013), Cheek et al. (2017), Harpin, Rossi, Kim, and Swanson (2016), and Wisner and Starzec (2015) all discovered improved student-to-student and student-to-teacher relationships as a result of mindfulness. A combination of quantitative and qualitative studies conducted by Higgins and Eden (2017), Schonert-Reichel et al. (2015), and Yuan (2020), revealed statistically significant improvement in adolescent self-awareness and self-regulation. The author will synthesize these findings in order to demonstrate the connection of improved student behavior with mindfulness practices.

The next section will review the impact of practicing mindfulness on children's emotional well-being. Studies conducted by Mostafazadeh, Ebadi, Mousavi, and Nouroozi (2019), Yuan (2020), and Biegel (2009) revealed that mindfulness can reduce symptoms of anxiety and lower perceived depression. Studies by Tassell, Gerstenschlager, Syzmanski, and Denning (2020), Bluth, Roberson, and Gaylord (2015), and Ortiz and Sibinga (2017) affirmed that practicing mindfulness as children and adolescents can boost resilience, reduce the Adverse Effects of Childhood Stress and Trauma (ACES), and promote growth mindset.

Finally, the writer will analyze how mindfulness impacts academic performance and achievement in adolescents including examining attention span and focus as well as improved grades in mathematics. A quantitative study conducted by Rush, Golden, Mortenson, Albohn,

and Horger (2017) will reveal that mindfulness led to increased time spent on-task during academic work time. The writer will discuss a mixed method study conducted by Scheinman, Hadar, Gafni, and Milman (2018) which analyzed three Israeli schools that incorporate whole-school mindfulness programs. This study revealed lower stress prior to exams and improvements in ability to concentrate. Lastly, the writer will note that while academic achievement was not the focus of many of the research studies analyzed in this literature, no fewer than ten studies claim improved academic performance after participating in mindfulness programs.

### **Review of Proposed Problem**

Educators have continued to see increases in child anxiety disorders, behavior disorders, and disengagement. Such concerns have led to a myriad of problems including lower academic performance, distraction, and increased achievement gaps. Additionally, triggered by a global pandemic, educators are seeing new concerns arise such as isolation, increased depression, and absenteeism as virtual learning becomes more prevalent in education (Yuan, 2020). With increased stressors and potentially toxic home lives and culture, students do not always have the skills to deal with the stress, trauma, and adversity they are experiencing. This stress and lack of self-regulation may cause less focus, lower grades, and acting out. Furthermore, it can lead to increased dropout rates, increased suicide rates, decreased attendance and engagement, and an overall loss of community and optimism.

### **Review of Importance of Proposed Problem**

According to Scheinman et al, “Preparing children for life requires an educational approach that supports not only their mastery of academic skills but also their process of

becoming responsible adults” (2018, p. 3316). In other words, it is the role of teachers to not only reach academic benchmarks but to also prepare students to function as responsible, well-adjusted, emotionally intelligent adults in the world outside school. Yuan (2020) asserted that practicing mindfulness in school was a possible tool to teach students to be resilient amidst stressful situations.

### **Student Behavior**

Throughout the fifteen studies, the most prevalent finding was the improvement of student behavior after practicing mindfulness. The terminology used to describe this improvement looked slightly different in each study. Some researchers labeled it improved relationships, empathy or trust. Some researchers discussed increased self-awareness and regulation. The following section will examine the results of mindfulness in terms of relationships and self-regulation.

**Relationships.** Building relationships and feeling a sense of community are more than just nice bonuses of mindfulness. Feeling a sense of belonging within a supportive community has a domino effect of positive consequences essential to an academic environment. When children foster healthy relationships and feel accepted by a group, they are more prone to exert effort and participate in class. Such participation leads to positive emotions such as interest and enthusiasm. Eventually, these emotions help combat harmful emotions such as anxiety and boredom (Cheek et al., 2017, p. 2570). Whether defined as increased connection to others, the ability to trust peers, or caring and respecting others, improved relationships was the common denominator of the benefits listed in multiple studies on mindfulness programs.

Wisner and Starzec (2015) conducted a qualitative study wherein nineteen adolescents at an alternative school practiced mindfulness for seven months. The mindfulness program consisted of meditation, breathing exercises, and journaling as a technique to allow acceptance of the present moment without judgment. Teachers slowly increased meditation and breathing techniques from two minutes to ten over the course of seven months. High schoolers self-identified the theme of relationships as a benefit of the program (Wiser & Starzec, 2015). Students noted improved relationships with their teachers, their peers, and their parents. Due to the troubled nature of the student demographic at the alternative school, many students began the program not able to trust their classmates. By the end of seven months, there was a sense of community and trust. One student stated, “I used to never close my eyes and now I can close my eyes. I used to trust only like four people. Now I trust about everyone” (Wisner & Starze, 2015, p. 254). Another student transferred the meditation skills learned at school to his home life stating, “If I got upset with somebody at home, I could just go to my room and do the meditation and then maybe go back to the person and apologize after like thinking it over and seeing who’s at fault and stuff” (Wisner & Starzec, 2015, p. 253).

In 2017, Cheek et al. executed a qualitative study reading through 188 letters written back in the 1990s by 112 elementary students who had participated in a year-long mindfulness training led by their teacher. A team of researchers read through letters written by the participants at the time to elicit themes and take-aways from the experience. Researchers extracted five themes from the letters, two of which attested to enhanced relationships. Analyzers noted that students felt like a part of a community due to the mindfulness focus of the class, and they were more aware of the “self-in-relation to others” (Cheek et al., 2017, p. 2568). In their

letters, students stated it was the mindfulness training that made them feel as if they were part of a group. Like the high school students in Wisner & Starzec's study, elementary students were able to transfer their skills to home situations. A fourth-grader stated, "I've noticed a lot of changes in myself like not fighting with my brothers and sister. I am more mindful of the things I do" (Cheek et al., 2017, p. 2572).

Another study in 2016 yielded similar results. Harpin et al. (2016) completed a mixed-methods study observing elementary students who followed a daily, ten-week mindfulness program. Two fourth-grade classrooms were selected. One classroom of eighteen children was chosen to practice daily mindfulness while the other classroom of the same size continued with their typical homeroom routine. Following the intervention, teachers and students completed three different surveys to gather data on changes of prosocial behavior, emotional regulation, and academic competency. After implementing the program, the classroom teacher noted her students could relate to one another better than before the training. Additionally, fellow staff members commented on the behavior of the intervention group outside the classroom. Hallway and playground behaviors and interactions were improved as a result of the training (Harpin et al., 2016).

Lastly, a quantitative study by Black and Fernando (2013) adds to the evidence that mindfulness-based curriculums improve relationships. A kindergarten through sixth-grade school in California implemented the program Mindful Schools for five weeks. Seventeen teachers rated the behaviors of 409 students three different times throughout the study: pre-intervention, post-intervention, and seven-weeks post-intervention. One of the study measures was students caring for and respecting their teachers and peers. Researchers calculated significant



improvement in respect from the pre-test to the post-intervention test. Students maintained their level of improved relationships; there was not a significant change from the first week post-program to the seventh week post-program (Black & Fernando, 2013).

All four studies referenced above found that mindfulness promoted healthy relationships. Wisner and Starzec revealed that mindfulness led to improved trust between peers and peer-to-teacher (2015). Cheek et al. (2017) discovered the practice elevated a sense of community. Harpin et al. labeled the improvement in peer relationships “prosocial behavior” (2016). Finally, Black and Fernando (2013) observed that practicing mindfulness led to increased caring and respect for teachers and peers. Although each study used slightly different terminology, strengthened relationships is a commonality in all four studies referenced above. These stronger relationships provide a more conducive environment for students to focus on academics (Wisner & Starzec, 2015).

**Self-awareness and self-regulation.** In addition to improved relationships and the ability to trust, multiple studies revealed practicing mindfulness resulted in improved self-regulation in students. Regardless of age, demographic, or even length of the mindfulness program, researchers discovered increased levels of self-awareness and self-regulation. Whether participants were elementary children at a low-income school in California, high school students at an alternative school in northeastern United States, or randomly-selected elementary students in Colorado, researchers universally found mindfulness training to have a positive effect on participants’ ability to identify and adapt their emotions.

In 2015, Schonert-Reichl et al. conducted a quantitative study assessing the effectiveness of a mindfulness program for 99 fourth and fifth grade students. This study has become a

standard in reference lists regarding children and mindfulness training. The study took place over four months and utilized the curriculum MindUP. This curriculum consisted of 12 hour-long seminars for students in addition to practicing mindfulness for three minutes three times a day. Researchers assessed the implications of the program via salivary cortisol (measuring children's stress hormone levels via spit), self-reports, peer reports, math grades, and teacher reports. The curriculum promotes positive student behavior by focusing on self-regulation and understanding and training the executive function of the brain (Schonert-Reichl et al., 2015).

By the end of the four months, research showed significant improvements in empathy, optimism, and emotional control as compared to the control (business-as-usual) group. Teachers noted improved student behavior inside and outside of the classroom mentioning that there was less aggression and conflict on the playground after implementing mindfulness. Teachers themselves noted differences in their patience levels and their ability to teach more efficiently with fewer behavioral distractions from students (Schonert-Reichl et al., 2015).

Higgins and Eden (2017) explored mindfulness with a similar age group. The duo conducted a qualitative study that examined the effects of two interventions in a New Zealand public school: mindfulness-based breathing and cogen. Cogen refers to cogenerative dialoguing, or the discussions that occurred periodically after practicing mindfulness in order to bring awareness and sense to the benefits of the practice to both student and teacher participants. The study consisted of approximately 30 students ages 10 to 12. Students participated in daily breathing practices prior to their mathematics lesson. During daily sessions, participants were guided to focus on their breathing and notice when their attention shifted away from that focus. When they were distracted, they were asked to inwardly repeat the word "wandering." This

practice in and of itself helped promote self-awareness and self-regulation with students. By students acknowledging that their mind had meandered, they were practicing self-awareness. By using the word “wandering,” they were practicing a small form of self-regulation in aiming to redirect their behavior and attention back to the present moment.

Throughout the three-month study, students met with their cogen (a group of five to seven students, one teacher, and one researcher) in order to dissect the effects of mindfulness (Higgins & Eden, 2017). These discussions, dictated and reported in the study, helped research extrapolate three themes as benefits of mindfulness. One of the themes students self-identified was the self-awareness of their energetic state. Students labeled this as noticing whether they were “pinging off the walls” or “hyper” compared to times they had “not as much energy.” According to Higgins & Eden, “the breathing intervention acted as a reflexive object to increase awareness and perhaps generate deeper understandings about mindfulness, emotions, and energy” (2017, p. 686).

Turning now to the study of high school students at an alternative school, using interviews with participants, Wisner and Starzec extrapolated the following themes pertaining to self-regulation: enhanced self-awareness, improved cognition, acquired anger management skills, increased levels of happiness, and the ability to cope with emotional challenges (2015). Students attending the alternative school often had extreme stressors in their lives such as poverty, transitional home life, teen pregnancy, a history of addiction, suicidal thoughts, and risky sexual behaviors. Providing a program to enhance adolescents’ ability to identify and deal with emotions is a huge step in supporting both the emotional and academic needs of these young people (Wisner & Starzec, 2015). Students recognized the shift in themselves and

acknowledged so in powerful interview statements. One student described his self-awareness: “It just made me actually look about, it just made me think about like, oh wow, cause after I stopped punching walls and everything, I was like, wow, I’m an angry kid when I get mad and, like, I don’t like being angry” (Wisner & Starzec, 2015, p. 252). Another student commented, “I realized that I didn’t wanna like flip out, so I just do the meditation. I would start screaming at the top of my lungs, and start swearing, and I didn’t wanna be like that” (Wisner & Starzec, 2015, p. 252).

Harpin et al. discovered similar benefits in their study of fourth-grade students. After receiving mindfulness training, many students identified anger management as a benefit of the program with statements such as: “I use it [mindfulness] when my sisters make me angry,” “Mindfulness helped me avoid fights,” and “When I was upset, I use mindfulness when I am mad [sic]” (2016, p. 153). Quantitative analysis of emotional regulation before and after the intervention revealed significant increases in one’s ability to identify and control emotions.

In Black and Fernando’s study of 409 elementary students, researchers saw significant gains in self-control after just five weeks of intervention. A third assessment was administered seven weeks post-intervention, and the level of self-control was maintained as opposed to falling back to pre-intervention levels (2013).

The ability to shift and deal with negative emotions was not the only emotional benefit of mindfulness practice. Students and teachers also noted increased levels of happiness and calm demeanor. Friends and family members of participants noticed the change commenting on how often they smiled (Wisner & Starzec, 2015).

While many participants observed better emotional regulation, students involved in the year-long mindfulness training in the 1990s understood that mindfulness was not always meant to change your emotions. Oftentimes the gift from their meditation time was simply acknowledging and accepting their emotions and situations without judgment (Cheek et al., 2017).

The previous section has given examples of students learning to address their wandering mind, pausing before reacting when angry, and focusing more often. This shows that mindfulness programs can increase self-awareness, and therefore, promote self-regulation and an ability to accept reality.

### **Emotional Well-Being**

Having discussed the ramifications of mindfulness programs on students' behavior, the following section will inspect how such programs affect students' emotional well-being. Historically, society has given more attention to physical health and well-being and less attention has been given to mental health and emotional well-being. As mental health disorders increase, health practitioners, researchers and educators strive to understand more about emotional well-being. Emotional well-being, or mental health, encompasses a person's attitude, perceived stress level, resilience, and mindset. Numerous studies have linked mindfulness practices in adults to improved emotional well-being including lowered levels of anxiety, increased resilience, and overall optimism (Mostafazadeh et al., 2019; Malboeuf-Hurtubise et al., 2017; Yuan, 2020). In the following section, the author will summarize studies which reveal that mindfulness can reduce anxiety in children, increase coping skills, boost resilience, and promote self-compassion.

**Anxiety, depression, and stress.** “Between 8% and 12% of children and up to 10% of adolescents have one of the diagnostic criteria of anxiety disorder that disturbed the normal course of life and daily functioning” (Mostafazadeh et al., 2019, p. 112). In a quantitative study in Iran, Mostafazadeh et al., strived to understand the implications of mindfulness practices on females ages 15-18 who were classified as “stress-stricken, anxious or depressed” (2019, p. 113).

These researchers studied 40 females: 20 of whom received the intervention and 20 of whom were in the control group. The 20 participants in the intervention group experienced eight weeks of mindfulness training which included weekly instructional classes and daily home practice. The program, Mindfulness-Based Stress Reduction for Teens, trained youth to understand body awareness, self-care, mindful resilience, coping, letting go, and forgiveness. Researchers utilized the Depression Anxiety Stress Scale (DASS) to perform a pre-test and post test for both the experimental and control group (Mostafazadeh et al., 2019).

By the end of the eight-week intervention, the results of the study showed that mindfulness education was effective in reducing anxiety and depression in female high school students (Mostafazadeh et al., 2019). The pre-test DASS mean score for depression remained stagnant for the control group between pre-test and post-test. On the other hand, those who practiced mindfulness had a significantly lower post-test DASS mean score. Likewise, participants who practiced mindfulness showed significantly decreased anxiety after eight weeks, whereas the control group’s mean score actually increased in the area of anxiety. Finally, both groups tested lower in stress after eight weeks leading researchers to conclude that mindfulness cannot necessarily be linked to stress reduction in this study (Mostafazadeh et al., 2019).

Mostafazadeh et al.'s results were certainly not an anomaly: a similar study discovered that mindfulness practices can help lower anxiety and depression in children and teens. Biegel et al., (2009) hypothesized that mindfulness-based stress reduction (MBSR) could help adolescent psychiatric outpatients improve symptoms of mood and anxiety disorders. At the time of the study, one in five adolescents in the United States had a mental health disorder. Biegel et al., aimed to see if mindfulness training could serve as a solution to the rising diagnosed mental health disorders in youth (Biegel et al., 2009)..

The quantitative study compared 34 adolescent outpatients who participated in the eight-week mindfulness training with 40 outpatients who received therapy-as-usual. Results were assessed using a pre-test, post-test, and three-month follow-up timeline. Researchers utilized a combination of self-report measures and clinician-rated mental health measures to conduct four primary analyses. Additionally, patients had the opportunity to leave open-ended comments on the post-intervention evaluation form (Biegel et al., 2009).

Biegel et al. used results to deduce that MBSR “significantly reduced self-reported anxiety, depressive, and somatization symptoms, and improved self-esteem and sleep quality compared with therapy-as-usual participants” (Biegel et al., 2009, p. 864). Additionally 45% of patients who participated in mindfulness training reported a change of diagnoses, whereas 0% of the therapy-as-usual group experienced a diagnostic change. Finally, 95% of participants in the intervention group chose to leave open-ended comments. All comments were positive highlighting reductions in sleep, medication usage, and improved sleep (Biegel et al., 2009).

Both studies discussed in the previous section display concrete evidence that mindfulness practices can be effective in reducing anxiety and lowering depression in children and adolescents. (Biegel et al., 2009; Mostafazadeh et al., 2019).

**Resilience, mindset, and self-compassion.** Having provided evidence that mindfulness practices can reduce adolescent anxiety and depression, this section will focus on changes in resilience, mindset, and self-compassion. Around the same time as Mostafazadeh et al. (2019) was conducting research on females in Iran, Yuan (2020) conducted a similar study in China. In early 2020, Yuan executed a quantitative study measuring the effects of mindfulness training on 90 adolescents during a global pandemic. Yuan was specifically studying how adolescents were altered in terms of resilience and emotional intelligence. Yuan defines resilience as “the ability to positively adapt to stress, crisis, and adversity while remaining healthy” (2020, p. 1). Studies have shown that humans can undergo the same traumatic situation and deal with it in vastly different ways. As such, promoting growth in resilience for youth is crucial in preparing them to navigate the constant changes and stressors of the world. At the time of the study, COVID-19 had just emerged, and schools in China had recently shifted to remote learning causing interrupted sleep cycles, isolation, and anxiety in adolescents (Yuan, 2020). Yuan explored how 90 Chinese adolescents were affected by 15 minutes of daily mindfulness (provided virtually) for six months. Yuan compared results to a control group of 90 adolescents who navigated the pandemic without mindfulness.

To analyze results, Yuan utilized two scales (Connor-Davidson Resilience Scale and Emotional Intelligence Scale) to quantify adolescent’s shift in resilience and emotional intelligence over the six months. By the end of the study, Yuan evaluated 84 responses as



participants were eliminated from the study if they missed a certain number of mindfulness practices several weeks in a row. On the other hand, students were given positive incentives for completing the six-month training in its entirety. After four evaluations (baseline, eight weeks in, 16 weeks in, and 24 week final evaluation), Yuan determined that both resilience and emotional intelligence had significantly increased over the six months. The control group, on the other hand, revealed stagnant scores between the initial and post-test evaluations. In addition to providing evidence that mindfulness practices could be a helpful tool for educators and students, this study reveals that “resilience is not a stable trait but rather a malleable characteristic that can be trained and bolstered” (Yuan, 2020, p. 7).

Along with resilience and grit, growth mindset has been a popular topic for educators to explore when incorporating Social-Emotional Learning aspects into the curriculum. Growth mindset is described as believing hard work can lead to intelligence (in contrast to a fixed mindset believing that intelligence is not malleable). Mathematics in particular seems to lend itself to a fixed mindset with some students believing they simply “don’t get math.” As such, mathematics teachers have been especially interested in the research teaching mindset (Tassell et al., 2020). In 2020, Tassell et al. hypothesized that mindfulness could help preservice teachers improve their mathematics anxiety, self-efficacy and mindset. Researchers utilized 37 teachers in training at a university to participate in a mixed-methods study. In the study, 17 students attended three seminars each semester on mindfulness while 20 of their fellow preservice teachers continued with education as usual. Data was collected via Praxis scores, participant journals and interviews as well as self-reports using the Mindful Attention Awareness Scale (MAAS). Like Mozastafadeh et al. and Biegel et al., the research by Tassell et al. revealed

significantly lower anxiety in the intervention group. One participant stated that she was less fearful of teaching math after practicing mindfulness (Tassell et al., 2020, p. 341). Additionally, mindfulness training led preservice teachers to be more aware of their own growth mindset in and out of the classroom as well as the importance of emphasizing growth mindset to their students. After the mindfulness seminars, many teachers in training noticed they altered their body language and vocabulary when teaching in order to project an atmosphere of growth. “When students would say, ‘I can’t do this,’ instead of me just telling them, ‘yes, you’re smart,’ I said, ‘you can’t do this *yet*’” (Tassell et al., 2020, p. 341). As educators continue to focus on STEM and teaching growth mindset, the discovery of the benefit of mindfulness in this situation could be applicable for teachers.

Whereas Tassell et al. focused on the connection between mindfulness and growth mindset, a study by Bluth et al. sought to understand the relationship between mindfulness in promoting self-compassion and ultimately reducing stress (2015). Mindfulness refers to noticing one’s feelings and emotions in the present moment without judgment. Self-compassion takes that notion a step further by accepting present pain or discomfort and holding that feeling with warmth and acceptance. According to Bluth et al., research indicates that this inward compassion can lead to lower anxiety, depression, and stress and ultimately helps promote resilience (Bluth et al., 2015).

The qualitative study conducted by Bluth et al. assessed the impact of *Learning to BREATHE: A Mindfulness Curriculum for Adolescents* on 30 teens in North Carolina. Researchers used four different measuring tools (CAMM, SCS, SLSS, and PSS) to analyze participants' mindfulness, self-compassion, life satisfaction, and perceived stress. The results

demonstrated that teens who practiced mindfulness reported significantly higher self-compassion and lower stress. While there was change in life satisfaction, it was not significant enough to make a conclusion. Bluth et al.'s data adds to the growing list of evidence that mindfulness can promote and improve emotional well-being in children and adolescents (2015).

The previous section has revealed the positive effects of mindfulness practices in schools in regards to emotional well-being. Studies have highlighted lower anxiety and depression levels. Additionally recent research demonstrates that mindfulness can lead to improved resilience and mindset, and overall optimism and hope.

### **Student Cognitive Functioning**

The previous two themes have demonstrated that the majority of research on mindfulness programs and children or adolescents concurs that regular practice can positively affect students' behavior as well as emotional well-being. Additionally, research supports improved cognitive functioning (such as the ability to focus, time on task, and improved memory). However, the ramifications of said mindfulness programs and academic performance is less conclusive. In the following section, the writer will examine several studies which suggest a strong correlation between improved cognitive function, potentially improved academic performance, and a call for more research in this area.

**Attention-span, focus, and memory.** A study conducted by Rush, Golden, Mortenson, Albohn, and Horger (2017) provided concrete evidence of cognitive improvement in children after practicing mindfulness. These researchers performed a qualitative study to examine the effects of mindfulness and biofeedback programs on the on-task and off-task behaviors of students identified as emotionally disturbed (ED). Five psychology students were trained as data

collectors, and they observed 33 students in 15-second intervals to determine how often students were on- or off-task. Students who received the mindfulness training intervention showed significant gains in on-task behavior as compared to no change within the control group (Rush et al., 2017).

Similarly, teachers saw significant gains in academic competency in fourth-graders who completed the ten-week mindfulness program (Harpin et al., 2016). In their qualitative responses, teachers noted that with increased student focus, instructors gained 11-20 minutes of instructional time each day that had formerly been spent trying to recapture attention (Harpin et al., 2016).

Black and Fernando wrote of quantitative results wherein students were able to pay attention better after five-weeks of a mindfulness-based program. Students were assessed again seven-weeks post-intervention to see if results differed. While respect, participation, and self-control plateaued, attention spans continued to increase for the group who continued their mindful practice an additional seven weeks. This suggests if students continue mindful practice, it can lead to better focus which supports academic competency (Black & Fernando, 2013).

Using a series of memory tests and focus tests, Schonert-Reichl et al. specifically assessed changes in the executive function for children who had practiced mindfulness. Results yielded quicker response time, improved memory, and longer periods of focus (2015).

Adding to the evidence of improved cognitive function, the New Zealand study on adolescents extracted a theme of self-awareness when the mind is wandering as opposed to in focus. Students themselves noted that mindfulness improved focus. One student shared, “You’re basically training yourself to focus on stuff” (Higgins & Eden, 2017, p. 686).

Whereas many mindfulness studies are limited to smaller group sizes, Scheinman, Hadar, Gafni, and Milman (2018) conducted a mixed-method study with nearly 650 participants in Israel. Scheinman et al., investigated three public schools in Israel with students 9 to 12 years old. One school had implemented school-wide mindfulness for thirteen years, a second school had practiced mindfulness for three years, and the third school was in its first year of the mindfulness program. Without being told the survey was about mindfulness, students were asked to identify their coping strategies for five typical situations: finding it difficult to fall asleep, encountering someone angry or annoying, needing to concentrate, and being disappointed in oneself (2018). The results highlighted that mindfulness contributed to children's emotional regulation and stress management. Additionally, this study revealed that students who practice mindfulness and need to concentrate or focus will utilize their breathing or yoga pose techniques in order to help them regain focus. As hypothesized, schools which had employed mindfulness for 13 years had more students utilize mindfulness techniques in order to focus than those who were just beginning mindfulness (Scheinman et al., 2018).

Nearly every study mentioned in this paper mentioned focus or concentration in the benefits of mindfulness practice. However, researchers question whether that focus necessarily translates to improvements in academic achievement. Many studies call for more future research to discern whether or not mindfulness is as beneficial academically as some studies surmise.

**Academic achievement.** In 2018, Bakosh, Mortlock, Querstret, and Morison questioned whether mindfulness is the pathway to academic success. "While mindfulness training may serve as a potential catalyst for higher student achievement, the evidence-base examining the potential link between Mindfulness-Based Interventions (MBIs) in schools and academic attainment is

still patchy” (Bakosh et al., 2018, p. 34). The study examined two elementary schools in different geographic locations in the United States. Within each school, certain classes were the intervention classes, and certain classes were labeled “wait-list control” classes. Researchers hypothesized that academic performance would be higher for those who participated in mindfulness. The study took place over 45 school days, and students listened to audio recordings of mindfulness 20 minutes each day (two 10-minute sessions). Teachers recorded grades in reading, writing, spelling, social studies, and communication skills before and after the intervention. It was apparent that Math, Social Studies, and Reading indicated improvements in the intervention group when compared to the control group. Writing, Spelling and Communication Skills, however, had inconclusive results. Researchers noted that math scores typically improve with mindfulness. Bakosh et al., questioned if is due to the high cognitive load of math in comparison to other subjects. This is an area that needs to be explored (2018).

Bakosh et al. was hesitant to conclusively link academic achievement with mindfulness practice. Malboeuf-Hurtubise, Lacourse, Herba, Taylor, and Amor (2017), on the other hand, stumbled upon academic achievement as a benefit of mindfulness. The study itself was a mixed-method study following three elementary students with diagnosed anxiety or depression along their journey with mindfulness practice. Although the study aimed to discern the effects of mindfulness on mood disorders, results showed significant improvements in grades. “For Mike, it should be noted that his overall grades improved significantly pre-to-post treatment, to a point where he was in danger of repeating his school year pretreatment and had average grades at post-treatment and follow-up” (Malboeuf-Hurtubise et al., 2017, p. 866). Likewise, another elementary student struggled with absenteeism and was failing at the start of treatment. Her

attendance improved and remained high post-treatment allowing improvements for her academic achievement.

Schonert-Reichl et al. (2015) analyzed a trend of higher math grades in children who participated in the Mind UP program compared to those who did not.

Although many studies have highlighted improvements in focus and attention, researchers are hesitant to conclude that mindfulness leads to academic achievement specifically in the younger grades. However, the same study that admitted the connection may not be significant enough to label it conclusive also recognized that perhaps academic achievement is not the most accurate predictor to indicate positive outcomes in young children (Bakosh et al., 2018). Because much of early elementary focuses on learning how to behave and think, a study of student behavior may be more applicable. Furthermore, “the lack of consistent statistically significant results presented should not be interpreted as a failure to produce positive results, but instead examined in the context of a need from more careful studies” (Bakosh et al., 2018, p. 39). Therefore, while the research is still in progress, it can be concluded that at minimum mindfulness practices improve cognitive functioning and perhaps improve academic achievement specifically in the area of mathematics.

### **Summary of Findings**

In the past decade, school-based mindfulness programs have been gaining momentum in hopes to address emerging concerns with children in today’s society. Researchers seek to understand the effectiveness of such programs in the areas of student behavior, emotional well-being and cognitive function. Theme one discussed the changes in student behavior after participating in mindfulness programs. Research provides both qualitative and quantitative

evidence that mindfulness practices with children and adolescents can lead to improved relationships, ability to trust, self-awareness, and self-regulation. Theme two examined the available research in terms of emotional well-being. Recent research has proven that mindfulness is effective in children and teens to lower anxiety, depression, and stress which boosts resilience and growth mindset. Finally, the third theme analyzed how effective mindfulness was for enhancing cognitive functioning and academic achievement. Although there is quantitative evidence to demonstrate a shift in children's cognitive functioning in areas such as focus, attention-span, and memory, researchers are not convinced there is enough evidence in children to claim improved academic achievement.

### **Conclusion**

In education circles, mindfulness programs have gained attention for promising improved focus, reduced anxiety, and overall improvement in emotional well-being. Research has backed up these claims demonstrating improvements in student behavior, emotional well-being, and cognitive functioning. Teachers have provided qualitative feedback that short, easy-to-implement mindfulness programs have been extremely effective in helping create a positive classroom environment and improve focus and progress with students. Additionally, even students reluctant to participate in mindfulness acknowledged the benefits of this self-compassionate, non-judgmental practice. If educators need more of an incentive to consider mindfulness, it is helpful to note that while absenteeism, suicide ideation, isolation, aggressive, and bullying are on the rise, mindfulness is a no-risk cost-efficient option to counteract these concerns in schools. Furthermore, teachers who implemented mindfulness programs noted that spending 10-20 minutes each day on mindfulness did not take away from their curriculum time and instead



increased their class' ability to efficiently finish their work. In the next chapter, the writer will elaborate on what this information means to educators today.

### **Chapter Three: Discussion, Application, and Future Studies**

In previous chapters, the writer analyzed fifteen studies which explored the effectiveness of mindfulness programs on children and adolescents in regards to their behavior, emotional well-being, and cognitive functioning. While each study utilized varying measurements and focused on different ages and demographics, the results were unanimous: implementing school-based mindfulness programs helped promote better student behavior, improved emotional well-being, and supported cognitive functioning. In the following chapter, the writer will elaborate on these findings by offering three insights gained from this research. Next, the writer will discuss how these insights can be applied in educational settings today. Finally, the writer will make suggestions for future research opportunities.

#### **Insights Gained from the Research**

After reviewing the research, three additional observations can be extracted. First, mindfulness is effective for students and adolescents in attaining desired behaviors and balanced emotions. Secondly, mindfulness can be implemented with very little effort, time, and cost on the behalf of the school or educator. Finally, researchers and mindfulness experts alike agree that mindfulness programs do not have risks associated with them.

**Mindfulness is effective for children and adolescents.** Although the final section of Chapter Two noted some limitations with studies in the area of academics, it can still be confidently concluded that having children and adolescents consistently practice developmentally appropriate mindfulness can yield positive results. The research noted that even

at-risk youth with troubled home lives and trauma were able to train their brains to slow down and learned to trust others. These students along with hundreds of other participants learned the value in pausing before reacting to regulate their actions. Teachers and program administrators across the world reported improvements in focus and attention-span. Additionally, even students who identified as high-anxiety or high-stress were able to reduce their symptoms and enhance their skill set in the areas of resilience and mindset. Researchers themselves admit that measuring math or reading grades in primary students is not necessarily an accurate measure for mindfulness given a large portion of elementary school education focuses on behavior and emotional development (Bakosh et al., 2018). Therefore, mindfulness is effective with adolescents and children in promoting positive behavior.

**Mindfulness does not detract from instruction.** One important component of mindfulness is practicing regularly and consistently. Students do not necessarily need to participate in an hour-long seminar on mindfulness. Mindfulness can easily fit into existing routines. It can be taking two to three minutes during Morning Meeting to breathe and notice one's feelings. It can be a playful brain break for children to pretend to be a fox with super ears. For older children, maybe mindfulness is a ten-minute guided meditation before every math lesson. In Yuan's study (2020), adolescents took 15 minutes a day to listen to meditations. In the study by Bakosh et al. (2018), teachers committed to a total of 20 minutes a day of mindfulness by listening to two, 10-minute recordings. Regardless of whether the practice consists of a few breaths each morning, pretending to be a sly fox, or listening to an audio-guided meditation, these feasible practices train the non-reactive part of children's brains to be stronger, thus building a stronger pathway to empathy, self-regulation, and focus.

Contrary to logical assumption, even incorporating up to 20 minutes a day of mindfulness did not take away 20 minutes from instructional time. In the case of Bakosh et al., teachers were able to continue with their usual curriculum on schedule. Harpin et al., asked teachers to measure on-task behavior. After five weeks of mindfulness, fourth and fifth grade teachers gained 11-20 additional minutes of instructional time each day due to improved focus and behavior (Harpin et al., 2016). Mindfulness does not have to be intrusive. Mindfulness does not have to be complicated. While mindfulness courses and guides are affordable, districts do not have to purchase a mindfulness guide in order to reap results. Breathe. Notice. Do not judge. Those simple practices can be incredibly impactful.

**Mindfulness is risk-free.** In regards to negative side effects from practicing mindfulness, there are none (Biegel, 2009). In fifteen studies, zero studies included a warning or cautionary disclaimer regarding the negative side effects of practicing mindfulness. The only concern educators or administrators should be aware of is that parents or community members may be skeptical of public schools committing as a district to mindfulness. Although there are no negative consequences for the participants, mindfulness can be misinterpreted as a religious practice. Rooted in Buddhist tradition, meditation and mindfulness in schools have been mistakenly interpreted as religion. Scientist and mindfulness practitioner Kabat-Zinn's definition is perfectly secular: "paying attention in a particular way, on purpose, in the present moment, and nonjudgmentally" (date, p. 4). In spite of this, administrators should be ready with research to assure community members that mindfulness is based on neuroscience and promotes emotional well-being. It is not a religion. Another possible concern about implementing mindfulness curriculum is that it can be associated with the countercultural, Hippie movement. While this

correlation is not accurate, it can lead concerned community members to question the academic basis for such a practice in schools. While these two concerns may cause hurdles for administrators, the research certainly backs up the reasoning for the practice in public schools.

### **Application**

Having noted the emerging research on mindfulness and children, individual educators might be motivated to incorporate mindfulness into their day. As previously asserted, mindfulness does not have to be intrusive or complicated. Teachers can start small. Educators might pick a time each day to consistently set aside five minutes for a basic mindfulness routine. The routine could begin with a handful of deep breaths. Next, educators could ask children to draw or write how they are feeling for two to three minutes. Once finished, if there is time, children could share with the class their drawing. Teachers can reinforce desired behavior of quiet, calm bodies during the drawing by saying that they will let children who are still and quiet share their drawing at the end. Once the simple routine is established, it can be even more impactful if students lead the breathing themselves. By consistently practicing mindfulness and deep breathing when children are already calm, the practice is more effective later on if a child is experiencing some distress such as anxiety before a test or performance.

Although mindfulness can be effective with minimal monetary commitment, if budget permits, districts might look into purchasing a curriculum or utilizing virtual resources led by mindfulness experts. Districts may even hire a mindfulness specialist to train teachers in how to implement mindfulness into their daily routines.

While taking on yet another new initiative may seem overwhelming for teachers or districts, the simplicity of mindfulness practices make it realistic to implement with any existing curriculum.

### **Future Studies**

Studies on the effects of mindfulness are becoming increasingly popular for researchers. Much research has been performed on adults, but there is still room for more studies on children and adolescents. The writer will suggest three potential future studies that could add to the understanding for researchers and educators alike on the effects of mindfulness on children and adolescents.

The first opportunity for further research is in the area of virtual-based mindfulness programs. Studies suggest that the quality of the mindfulness instructor is important in achieving desired outcomes from mindfulness practice (Bakosh et al., 2018). It is likely that each school district may not have an expert mindfulness practitioner within their staff. However, mindfulness-based programs with virtual resources including audio recordings and videos may be a way to address this concern. There is an opportunity for researchers to analyze whether or not mindfulness is as effective when delivered by virtual method as opposed to live.

Secondly, there is a lack of research studying the effects of long-term mindfulness programs. Most studies in this paper implemented programs that lasted anywhere from five weeks to one year. A study by Scheinman et al. (2018) studied three elementary schools: one of which had been implementing mindfulness for thirteen years. Preliminary results suggest that the longer a school has practiced mindfulness the more impactful it is. However, there is a lack of evidence in this area.

Lastly, there is an opportunity for researchers to conduct a large-scale, quantitative study for children utilizing mindfulness. Thus far, most research analyzes smaller groups of children. Many studies were able to analyze a class of students with a participant size of 20-24 people. At most, studies were able to examine a district with a couple hundred participants. It would be interesting to analyze a much larger population of children for more than just a couple months. A potential study might follow children across the United States for at least a year who commit to mindfulness practice with their parents at least three times a week.

## **Conclusion**

New concerns for children and adolescents are emerging faster than educators can discern how to address them. School counselors struggle to understand why anxiety and suicide rates are increasing. Teachers agonize over how to support their students with adversity or trauma and meanwhile keep them on track academically. Parents and guardians navigate raising children in split homes or trying to provide balanced meals and adequate sleep in this fast-paced society. It is clear modern-day education and parenting has very different concerns than the century before.

While the list of concerns and questions for parents and educators spikes, the answers to said issues have not developed at as rapid a pace. This research paper suggests that school-based mindfulness programs may be an answer to these questions. Due to the positive effects in children's behavior, emotional well-being, and cognitive functioning, mindfulness may counteract many of the obstacles educators and parents face. Mindfulness expert Clark-Fields labels mindfulness a superpower: "Mindfulness is like this superpower that we need. It's like this stealth tool that anyone can use that has no negative side effects at all that can make all the difference in calming down your reactivity" (2021).

It is time for educators to explore mindfulness consistently in their classrooms. The benefits mindfulness practice offers are not only a nice bonus for educators and students, they are necessary in today's society. As Dewey states: "If we teach today's students as we taught yesterday, we rob them of tomorrow."

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## Appendix: Article Tracking Matrix

<b>Article</b>	<b>Method</b>	<b>Theme 1: Student Behavior</b>	<b>Theme 2: Student Emotional Well-Being</b>	<b>Theme 3: Student Academic Performance</b>
Bakosh, Mortlock, Querstret, & Morison (2018)	Quantitative			x
Biegel, Brown, Shapiro, & Schubert (2009)	Quantitative		x	
Black & Fernando (2013)	Quantitative	x		x
Bluth, Roberson, & Gaylord (2015)	Qualitative		x	
Cheek, Abrams, Lipschitz, Vago, & Nakamur (2017)	Qualitative	x		
Harpin, Rossi, Kim, & Swanson (2016)	Mixed-Methods	x		x
Higgins & Eden (2017)	Qualitative	x		
Malboeuf-Hurtubi se, Lacourse, Herba, Taylor, & Amor (2017)	Mixed-Method			x
Mostafazadeh, Ebadi, Mousavi, & Nouroozi (2019)	Quantitative		x	
Rush, Golden, Mortenson,	Quantitative			x

Albohn, & Horger (2017)				
Scheinman, Hadar, Gafni, & Milman (2018)	Mixed-Method			x
Schonert-Reichl et al. (2015)	Quantitative	x		x
Tassell, Gerstenschlager, Syzmanski, & Denning (2020)	Mixed Methods		x	x
Wisner & Starzec (2015)	Qualitative	x		
Yuan (2020)	Quantitative		x	