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The Effects of Mindfulness on Special Education Students in the General Education Classroom

Jessica Ostendorf
Bethel University

THE EFFECTS OF MINDFULNESS ON SPECIAL EDUCATION STUDENTS IN THE GENERAL EDUCATION CLASSROOM

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JESSICA OSTENDORF

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Jessica Ostendorf

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Thesis Advisor: Nathan Elliott, Ed.D.

Program Director: Katie Bonawitz, Ed.D

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Abstract

Can mindfulness interventions have a positive impact on both special education students and general education students in the classroom? How does mindfulness affect students' behavior, academic achievement, and over all wellbeing? This literature review investigated how mindfulness affects special educations students in the general education classroom. The literature suggests mindfulness can be helpful to all students, but especially to those who experience anxiety. It can increase on-task behavior and decrease problem behavior, which can lead to improved classroom and school climate. Mindfulness can be implemented as a behavior intervention for both general education and special education students to help decrease anxiety and stress and increase emotional awareness and regulation. Mindfulness can be a helpful behavior management tool, and with a little time and training, it can also be easy for teachers to implement and practice themselves.

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CHAPTER I: INTRODUCTION

One of the biggest challenges both general education and special education teachers face can be unexpected or negative behavior from students. There are many reasons for this behavior: anxiety, trauma, frustration, the desire for power, seeking attention, and lack of understanding are just a few of the reasons students may choose to misbehave. Sometimes it is not a choice or something the student can control. Whatever the reason, misbehavior can be a problem. It can cause a negative classroom environment. Other students can be afraid of a student. Teaching cannot happen when the teacher is dealing with behavior issues, and then the desired learning stops. Other students get frustrated and so does the teacher. This can lead to teacher burn-out and for students to resent both the teacher and the student with the misbehavior or even worse, school in general.

Misbehavior is a problem, for both general education students as well as special education students, but what can teachers do about it? They can resort to punitive measures or fear or manipulation to “help” students behave, but that is not helpful or healthy for anyone. The punitive measures can lead to increased anxiety, which in turn creates more unwanted behavior or refusals. It certainly does not create the warm, nurturing, positive classroom environment that teachers want.

One possibility to alleviate stress and anxiety for students, in turn lessening problem behaviors or misbehaviors, is mindfulness. Mindfulness is simply living in the present moment, letting go of what happened in the past and also not planning for the future. It is a way for individuals to be in touch with their emotions and focus on

observing rather than reacting. Mindfulness can reduce anxiety and depression and help lower stress levels. It helps people cope with trauma and illness. Using mindfulness can make a difference in how a person reacts to situations. Students can use mindfulness to stop ruminating on negative thoughts, such as, "I will never get this math problem," or "I can't understand this, so I must be stupid." There are many forms of mindfulness; meditation, body scans, yoga, and deep breathing are a few types of mindfulness that individuals and groups can use.

If mindfulness can be helpful to individual students, can it help promote a positive classroom climate by decreasing anxiety and problem behaviors? If anxiety could be reduced and, in turn on-task behavior could be increased, could classroom teachers use this as a way to improve classroom management? Using mindfulness to create a positive classroom environment can also reduce anxiety and improve behavior. Mindfulness training can result in an increase in positive behavior and a decrease in aggressive behavior among students Schonert-Reichl et al., (2015). Following mindfulness training, teachers observed that students became more relaxed, more focused, and showed fewer behavioral issues (Harpin et al., 2016).

Classrooms have students with varying personalities, abilities, needs, and challenges. Do mindfulness activities or interventions have the same effect on all students? Can mindfulness help students with disabilities? Can mindfulness-based interventions be as beneficial to special education students as their non-disabled peers? When mindfulness was incorporated into their daily routines, students who had been identified as having

an emotional behavior disorder (EBD) saw a reduction in their dysregulated behavior as well as their anxiety (Malow & Austin, 2016).

Another positive outcome of mindfulness practices among students is improved executive functioning skills. Areas of executive functioning (shift, initiate, plan, and organize) saw significant growth (Flook et al., 2010). Cognitive flexibility, inhibitory control, and attentional control also saw improvement (Janz et al., 2019). Implementing a mindfulness practice with students can make a difference in executive functioning skills, especially for those who experience a deficit or lower level of executive functioning skills (Flook et al., 2010). Students with Attention-deficit/hyperactivity disorder (ADHD) often have difficulties with tasks that involve executive functioning. Mindfulness could help these students.

Mindfulness can also improve on-task behavior for both general education students (Kasson & Wilson, 2016) and special education students. Specifically, students with intellectual disabilities saw improvements in on-task behavior (Kim & Kwon, 2016). After mindfulness interventions, students with EBD also saw increased on-task behavior (Rush et al., 2017). Also, students with learning disabilities saw a decrease in inattention after a mindfulness intervention (Malboeuf-Hurtubise et al., 2017), as decreased inattention can mean an increase in on-task behavior.

When a teacher implements a mindfulness practice with their students, it affects not only the students but the teachers as well. Teachers need interventions to be easy to implement and not time consuming, as there is little time for extras in a school day. Mindfulness can be easy for teachers to implement and use (Janz et al., 2019). One goal

teachers have is to increase participation and engagement while decreasing inattention and problem behaviors. Mindfulness can help meet that goal (Janz et al., 2019). Mindfulness, when practiced for a short amount of time, can also help with increased participation and engagement throughout the day. For example, practicing yoga as a class allowed for smoother transitions and made the classroom a more positive environment, according to the teacher (Stapp & Lambert, 2020).

Key Terms

There are several terms used throughout this paper discussing the use of mindfulness in schools with general education and special education students.

Executive Functioning

Executive functioning is the mental processes or cognitive abilities that facilitate the setting of goals, the development of plans, and the monitoring of progress and includes working memory, problem solving, attentional control, inhibition, and emotional regulation (psychologytoday.com, n.d.).

Mindfulness

Being mindful can be defined as being present and aware of what is happening around us and in our bodies in a non-judgmental way. It is also the practice of being present and accepting of one's experiences and not reacting.

Mindfulness Based Intervention

Mindfulness based interventions teach and practice mindfulness in order to reduce or in place of a non-desired behavior.

Mindfulness Orientated Meditation (MOM)

This type of meditation involves practicing mindfulness in order to calm one's thoughts and minds.

On-task Behavior

On-task behavior is being engaged in the current learning task or lesson

Yoga

Yoga is a mindfulness activity that includes whole body movement, stretching and meditation.

Research Question

Knowing that mindfulness can be beneficial to people with anxiety and depression, and knowing that sometimes anxiety can lead to undesired behavior helps teachers know what is a possible solution for problem behavior in the classroom. There are other questions to answer such as: what are mindfulness activities for the general education classroom? How would implementing mindfulness in a general education classroom affect general education students? How do mindfulness activities affect academic performance? How do mindfulness activities affect special education students whose needs can be vastly different from their general education peers? What are mindfulness activities for special education? Answers to these questions fall under the guiding question, how do mindfulness activities affect students with disabilities in a general education classroom?

CHAPTER II: LITERATURE REVIEW

Literature Search Procedures

Chapter II reviews scholarly literature found through ERIC through the Bethel University Library, EBSCOHost, and Google Scholar. The search parameters included articles published after 2010. Key terms and phrases used in this search were, mindfulness in schools, mindfulness with special education students, mindfulness with emotional behavior disorders, autism spectrum disorder, attention deficit-hyper activity disorder, and learning disabilities. This chapter reviews the literature and how it relates to the effects mindfulness has on special education students in the general education classroom setting.

Mindfulness and General Education

How does mindfulness affect students' wellbeing in the classroom? What are other some other possible outcomes of a mindfulness practice? Can mindfulness help students with and without disabilities regulate their behavior? Can a simple mindfulness intervention done with the whole class promote social and emotional learning as well as improving school culture? A study by Schonert-Reichl et al. (2015) set out to address these questions, primarily addressing the question, "How does implementing mindfulness-based SEL affect children and school culture?"

One hundred fourth and fifth-grade students participated in the Schonert-Reichl et al. (2015) study. These students were from four different elementary schools in a largely middle class suburban area of Canada. Randomly, two classes were chosen to participate in the mindfulness-based intervention (Hawn Foundation; MindUP , 2008),

while the other two classes took part in a non-mindfulness-based curriculum. Students were given multiple baseline assessments, including a saliva test that tested the levels of cortisol in their system, pre, and post-intervention. Schonert-Reichl et al. (2015) found after implementing the MindUP curriculum for the twelve lessons, students who participated experienced an increase in positive behaviors and decrease in aggressive behaviors. In addition, the children who participated in the MindUP program outperformed the comparison children on executive functioning tasks, including working memory, and cognitive flexibility.

This quantitative study was thorough in its testing. Not only did the study test for executive functioning tasks and cortisol levels, but it also took into consideration academic subjects, specifically math. After the intervention, Schonert-Reichl et al. (2015) found a 15 percent increase in math scores from the control group. Students also reported a gain in their perceived well-being. Schonert-Reichl et al. (2015) reported a relatively simple way to implement mindfulness-based curriculum, which could and did have positive effects.

Mindfulness and Executive Functioning

Mindfulness practiced in the general education classroom can also have an effect on executive functioning. Executive functioning is the ability to plan, organize, and follow through to completion. Both general education and special education students alike rely on executive functioning skills to complete tasks and remember order and details. A 2010 study by Flook et al. sought to determine the effect of mindfulness practices on children's executive functioning skills. According to parents, the research

looked at how mindfulness affected executive functioning in the school setting and what the effects of mindfulness practice at school were at home. This quantitative study involved 65 students in grades two through three. It was conducted in a diverse urban setting in Los Angeles, California. Both teachers and parents were surveyed at the beginning and end of the mindfulness intervention. Students were placed randomly into either the mindfulness practice group or a silent reading control group. The Mindfulness Awareness Practice (MAP) group participated in two mindfulness awareness sessions per week for eight weeks for a total of eighteen sessions. Parents and teachers were given the Behavior Rating Inventory of Executive Functioning (BRIEF) evaluation to fill out on students critiquing executive functioning operations in the last month.

The study showed that students who had poorer initial Executive Functioning (EF) scores and went through the MAP sessions showed better EF after the training compared to the controls. This was also reported by the parent survey. There was a significant difference between the pre and post-evaluations with students who started with lower EF scores. For students who started with higher functioning or average functioning EF, there was not a noticeable difference between the MAP groups and the control group.

Reports suggested that both parents and teachers noticed a difference in EF for children who had difficulties before the MAP training. These areas of executive functioning saw significant growth in shift, initiate, plan/organize, and monitor. The organization of materials saw some growth. Inhibit, emotional control, and working

memory did not report significant differences between pre and posttests. This was seen in both teacher and parent tests. “Participation in a mindful awareness practices program was associated with improvements in behavioral regulation, metacognition, overall EF” (Flook et al., 2010, p. 79).

A couple of possible shortcomings of this study was that data was based on reports of dysregulated behavior, so the growth might be more noticeable or more likely to be noticed. The study also had a relatively small sample size. Teachers were also aware of which students were participating in the MAP and who were in the control group, which may leave room for bias.

Mindfulness can benefit children with Executive Functioning difficulties when introduced in a general education setting. After participating in the MAP training, children with initially lower levels of EF demonstrated an average EF (Flook et al., 2010).

Another study by Janz et al. (2019) also looked at how mindfulness can affect executive functioning. The main purpose of this quantitative study was to look at the effects a mindfulness based program had on young students. This program was to be part of the classroom curriculum and used a waitlist-controlled design.

Janz et al. (2019) invited 115 kindergarten, first, and second graders from rural Australia to take part in the study. Ninety-one students returned consent and participated in the research. These ninety-one students were randomly assigned to participate or be a part of the waitlist control group. The participants took part in mindfulness program curriculum called CalmSpace (2019). There were two parts to the intervention. Part one involved attending to the sound of a gong at points of major

transition as a required "core practice" such as lunch and dismissal. The second part was left up to the teachers' discretion when they felt it would be the most beneficial to implement additional mindfulness-based activities supplied by the researchers.

At the conclusion of the study, the researchers found that mindfulness programs can be implemented in a classroom with fidelity and it showed participants in the mindfulness program CalmSpace showed improvements in inhibitory control and cognitive flexibility. Additionally, measures of behavior, particularly attentional control, were significantly improved (Janz et al., 2019).

The teachers who participated in this mindfulness intervention stated the activities were easy to use and implement. Researchers noted one downfall of the study might be because the teachers participated in mindfulness activities along with their students, they might be more tolerant of hyperactivity and inattention (Janz et al., 2019). Teachers looked for ways to increase participation and engagement while decreasing inattention and problem behaviors. According to this research, short mindfulness activities implemented throughout day can do just that.

Along with increasing executive functioning skills, decreasing attention problems is critical in classrooms. Su and Swank (2018) researched the effect of adding mindfulness to the classroom and with children who had attention problems. In the intervention, mindful breathing, sensory awareness, being nonjudgmental, and choosing to respond instead of reacting were all emphasized (Su & Swank, 2018).

Third and fourth-grade students who had been identified as having attention problems were part of both the intervention group and the control group. These

students were at two different schools in a midsize city. Students were multiracial, European American, or African American, scoring a borderline or clinically significant range for attention problems on the Teacher's Report Form, which identified these students as having attention problems (Su & Swank, 2018).

Unlike Janz et al. (2019) where teachers were able to implement the mindfulness intervention, Su and Swank (2018) chose to have two school counselors complete the brief intervention, which was thirty minutes session once a week for six weeks. The results of the intervention were mixed, but it was reported that for two out of the six students there was an improvement in attention problems, and for another two, the intervention was "debatably effective" (Su & Swank, 2018). The last two students saw no improvement in attention problems. Similar results were found for improving on-task behavior. The results did align with previous research showing that mindfulness positively effects children's attention (Flook et al., 2010; Napoli et al., 2005; Semple et al, 2010).

There were a few issues with this study. There was a small sample size to this brief intervention and there were also variables that could have affected the results, such as teacher style and learning style. The counselors were encouraged but not required to have their own practice, which could have led to differences as two different counselors implemented the intervention. One of the researchers was an observer, which could have also led to bias. The study took place in the last few months of school when things tend to be a little more hectic, which may have affected students' ability to be mindful or decreased attention problems. One teacher report of more behavior

issues could have been because of unstructured learning time or the anticipation of summer break, and the intervention schedule had variations, not because of the validity or fidelity of the mindfulness intervention.

In 2016, Vickery and Dorjee set out to see if mindfulness training has a positive effect on wellbeing and metacognition. Using Mindfulness in School's Project (Mindfullnessinschools.org 2015) curriculum "Paws B", Vickery and Dorjee conducted research in primary schools in the United Kingdom. The target group of students for this research was children ages seven to nine. Seventy-one children from 3 different primary schools took part in this mindfulness training. This mixed methods study concluded that their classroom teachers could deliver Paws B mindfulness curriculum to school age children. A majority of the children reported liking the program and that there was a significant decrease in negative affect. The study also showed improvements in meta-cognition of students as reported by their teachers (Vickery & Dorjee 2016). Parents, teachers, and students were all interviewed before and after the intervention. Parents and teachers were asked to fill out the Behavior Rating Inventory of Executive Function – Teacher and Parent Versions (BRIEF) (Gioia et al., 2000). Students were to complete a brief questionnaire before, immediately after the eight-week intervention, and three months later to see if the effects of mindfulness were lasting. The training group reported significant decreases in negative affect compared to the control group on self-reports (Vickery & Dorjee, 2016). Teachers also reported significant improvements in meta-cognition.

It is believed that the Paws B program can be delivered by primary school teachers as part of their regular curriculum, is acceptable to the majority of children, and may significantly decrease negative effects and improve meta-cognition in children aged seven to nine.

Mindfulness and Classroom Behavior

Classroom behavior plays a huge part in the quality of education students receive. There are many factors that can affect classroom communities and student learning, and student behavior seems to be a priority. A study by Black et. Al. (2014) looked at student behavior in lower income schools to see the way mindfulness training affects classroom behavior In this study, four hundred and six students from one elementary school in California received five weeks of mindfulness instruction and practice. In addition, half of the group was randomly assigned to receive an additional five weeks of mindfulness instruction. The school was 83% free and reduced lunch (low income) and 93% minority.

Two mindfulness meditation instructors delivered the mindfulness intervention across classrooms three times a week for fifteen minutes a session. Classroom teachers were also asked to implement a two-minute mindfulness practice on days without formal instruction. Teachers were asked to rate student behavior before, during, and after the mindfulness intervention. Teachers graded students using the "The Student Behavior Rubric" by Kinder Associates, LLC (2007). This rubric looked at four areas of student behavior: paying attention, self-control, engagement, and respect for others. Each of these areas was ranked: the higher the score, the better the behavior. Both

groups saw student behavior scores improve in all four areas. These improvements lasted up to seven weeks after the intervention. The additional time spent with the mindfulness intervention did not show additional advantages, except for paying attention, which continued to improve with additional practice.

A strength of this research is the size of this study. The whole school took part, meaning the whole school saw at least some benefits of mindfulness in the way of student behavior. It was a relatively short amount of instruction time for teachers to implement. Because it was two mindfulness meditation instructors delivering the instruction, teachers were able to participate along side students, better equipping them to implement the two minutes of mindfulness practice on the days when there was no formal instruction.

There was no control group due to the size of the study, which could be viewed as problematic. Just like with the Janz et al. study (2019), in Black et al. (2014), teachers participated in the study, and therefore they may be more tolerant of misbehavior or inattentiveness. Even with the shortcomings, this research showed positive results on student behavior after mindfulness practice.

Does mindfulness, in combination with behavior management techniques, increase student engagement and on-task behaviors? Kasson and Wilson (2016) looked to answer this question. This study took place in an urban K-8 Midwest school. One class of 21 third graders and two teachers, the classroom teacher and a specialist teacher, took part in the research. The class was referred by the social worker due to

their ongoing behavior problems. Six of these students were referred to be specifically tracked by the classroom teacher and social worker for ongoing behavior problems.

The two teachers in this study were given not only mindfulness interventions but also strategies to increase student engagement such as the use of a visual timer for transitions, using signals to gain student attention, and ignoring undesired student behavior. After the teacher had carried out the classroom behavior management strategies, four of six students demonstrated an increase in on-task behavior. With the addition of mindfulness exercises, five of six students demonstrated increased on-task behaviors and engagement (Kasson & Wilson, 2016). While the researchers noted these initial results were positive, and that mindfulness is able to strengthen traditional behavior management techniques, there were more questions and limitations with this study. As a result of the outside researchers' involvement in recording data, training teachers, and implementing mindfulness activities, the external validity of the procedures was limited (Kasson & Wilson, 2016). Researchers were also not sure why the combined interventions were particularly ineffective for the one student. With the small sample size, it is hard to understand the reason for the infectiveness.

While Black et al. (2014) looked at mindfulness as a behavior intervention school-wide, Harpin et al. (2016) looked at the impact of a mindfulness curriculum on elementary students, positive classroom behaviors, emotional regulation, and academic competence in a single classroom. This took place in an urban elementary school where, again, the percentage of students receiving free or reduced lunch was high, as was the percentage of minority students. Two fourth-grade classrooms in Denver, Colorado,

took part in the research. One class received a 10-week mindfulness intervention. These mindfulness sessions took place twice a week for 20 to 30 minutes and happened in the classroom during their regularly scheduled morning meeting time. The other class was a control group and took part in their regularly scheduled activities and lessons. A certified mindfulness instructor delivered the mindfulness curriculum to complete the intervention. This qualitative study gathered data in the way of three different surveys administered to both the teachers and students before, during, and after the intervention. One survey measured the teacher's perception of the students' pro-social behavior, academic gain, and emotional regulation. One survey used was designed to assess children's ability to observe their own experiences and then accept them without judgment. The last survey was designed to look specifically at how the students and teachers felt about the curriculum used and mindfulness practice. After the intervention, the survey measuring the teacher's perception of the students' pro-social behavior, academic gain, and emotional regulation showed a significant increase in all categories. The benefits of the mindfulness intervention were also noticed outside the classroom. Other teachers in the school noticed the students improved behavior in areas such as the hallway and playground and attributed it to the mindfulness practice. "Overall, teachers felt the Mindfulness made students more relaxed, more focused, and with less behavioral issues after having received training" (Harpin et al., 2016, p. 153). Students reported liking mindfulness and wanting to be more mindful. A large majority of the participants also reported teaching others how to be mindful. "Students who participated in Mindfulness not only saw dramatic increases in those classroom

behavior outcomes, but also saw other tangible positive increases over the control students" (Harpin et al., 2016, p. 154).

These positive results did have some drawbacks. Researchers noted it was a small sample size of one classroom of students. Also, one of the standardized surveys used was typically used for adults and had not been used with children before, creating questions of comprehension on the part of the students. However, it was noted by the researchers that the benefits of the mindfulness intervention seemed to outweigh the limitations.

Mindfulness and Academic Engagement

Behavior management is one critical piece to ensure student learning. Academic engagement is another. How does mindfulness impact academic engagement in a general education classroom? This was the guiding question for the 2021 study by Axelrod and Santagata. The study looked at mindfulness interventions as a way to improve academic engagement. The specific student population chosen as a part of this research was students who had been identified by their classroom teacher and school resource team as needing tier-two support in the area of behavior and academic engagement. These students were identified with behaviors such as not listening to the teacher, arguing, disturbing others, and being hyperactive. Three male students met the criteria for the intervention. The classroom teacher reported that all three students had a history of off-task behavior, disruptive behavior, low grades, and not finishing their work (Axelrod & Santagata, 2021).

This study examined academic engagement as the primary variable. Therefore, as a baseline before the intervention was implemented, students' academic engagement was measured using a momentary time sample method. An ABAB design method was then used to determine the effectiveness of mindfulness on academic engagement. With the students who met all the criteria for the intervention being identified and baseline data in place, the intervention itself could start. Throughout both stages of the mindfulness intervention, students met with a school counselor each day for a 30-minute session. The process was then repeated.

The results of the intervention were mixed. One student's academic engagement showed no improvement with the mindfulness intervention. One student showed a small improvement in his academic engagement. The final student showed a more moderate improvement in his academic engagement. These findings, while mixed, did not show the improvement in student's academic engagement the researchers had hypothesized. Because of these findings, researchers suggested mindfulness-based interventions may be more effective in reducing negative symptoms such as anxiety or depression than improving academic engagement (Axelrod & Santagata, 2021).

If mindfulness-based instruction as a tier two intervention does not have proven results in improving academic engagement, can it help improve school grades? Can it be implemented easily? How do teachers themselves implement mindfulness in order to see benefits for themselves and their students? Bakosh et al. (2016) published a study addressing these questions. These researchers suggested there was information stating the benefits mindfulness with students, but someone other than the teacher delivered

most of it. Bakosh et al. (2016) wanted to see if the positive effects of mindfulness could be easy to implement or be more "user friendly" for both teachers and students, therefore creating a sustainable practice in the classroom that would, in turn, benefit students and possibly their grades.

The study took place in two public schools in the same suburb of Chicago, Illinois. Ninety-three students from four third-grade classes were chosen to be a part of the intervention group and 98 students from four third-grade classes were the control group. Each school had two classes participating in the intervention and two classes that acted as the control group. Students stayed grouped by their classrooms in order to see if the intervention could be implemented in a traditional public school setting, during regularly scheduled class, and by current classroom teachers. Researchers also specifically targeted third grade because it serves as the midpoint in elementary school and because third grade reading levels have been linked to high school graduation rates (Bakosh et al., 2016).

Teachers participating in the intervention received a 60-minute training session prior to the intervention. The intervention itself consisted of pre-recorded audio tracks based on mindfulness-based stress reduction (MBSR) protocol originally developed by Jon Kabat-Zinn (1979). Each track was roughly 10 minutes long and one track would be played daily for the duration of the eight-week intervention. Teachers were also encouraged to pick a time during the day that would work for the class, with the expectation if the class found a time that worked best for them, they would be more likely to implement the intervention.

Data was collected around three areas that researchers were testing: grades, behavior, and “program impact on teaching operations” (Bakosh et al., 2016, p. 62). Grades and behavior data was already being reported to the school in the way of quarterly report cards. Behavior data was taken daily by teachers and was classroom, not student, specific. The last of data that was collected showed the impact the program had on day-to-day teaching operations. This showed the feasibility and fidelity of the intervention.

As with the research of Axelrod and Santagata (2021), both the intervention group and control group determined a majority of pre intervention scores determined the post intervention scores. There was an exception to this of a significant increase to reading scores in the intervention group. This meant the mindfulness intervention had little effect on academic achievement.

The behavior of the intervention group decreased by 50 percent from an average of about four incidents per day in week one to fewer than two per day in week eight and rose by 15 percent for the control group over the eight weeks, from two incidents per day in week one to an average of slightly more than two per day by the end of the intervention. Little to no impact was found on the day-to-day operations of the teachers who implemented the intervention.

As with the research of Axelrod and Santagata (2021), this research found mindfulness was not an appropriate intervention for academic success. However, this research did support the research of both Black et al. (2014) and Harpin et al. (2016).

Mindfulness and Wellbeing in the Classroom

How does mindfulness help to promote wellbeing in an elementary classroom? Does it promote wellbeing? Social and Emotional learning are important parts of classrooms, but how does mindfulness fit into that learning component? Can mindfulness benefit the whole classroom community? Crescentini et al. (2016) evaluated the effects of an eight-week mindfulness-orientated meditation (MOM) training on healthy elementary school children.

Thirty-one children ages seven and eight participated in this study. The mindfulness-orientated meditation group has a total of 16 children. The 15 students in the control group took part in lessons on emotional awareness and recognition. As this study took place in Italy, the students all spoke Italian as their first language and came from similar ethnic backgrounds students. The students participated in three mindfulness sessions a week for eight weeks, starting with 30 minutes a session and building up to 55 minutes a session. The teachers were given two different rating scales both before and after the mindfulness training. The teachers also introduced the mindfulness instructors to the groups but did not take part in the MOM, nor were they present while the MOM sessions were being delivered. The students also completed a short standardized self-report.

The teacher reported specific positive effects of MOM training in reducing problems associated with attention deficit/hyper activity (ADHD), such as inattention. In addition, both trainings were found to have beneficial effects on children's internalizing problems, such as anxiety. It should be noted, however, that subjectively, the children in

the MOM or control groups did not report improved moods or less depressive symptoms as a result of the trainings.

In general, this study demonstrated that MOM training had positive effects on a group of healthy primary school children's attentional skills, ADHD symptoms, and emotional functions. There was a discrepancy between the teachers' reports and the children's self-reports, but that may be due to the fact that the teacher's report relied on behavioral observations, whereas the students' report relied on subjective assessments of their emotions. The difference, particularly when viewed in light of the effect of MOM training on ADHD-related problems, suggested that MOM training might have been particularly effective in transforming behavior problems.

Crescentini et al. (2016) found that MOM training could have positive results on children, especially those with ADHD symptoms or problems paying attention. Can those positive results be reproduced with other mindfulness programs? Is mindfulness more successful in helping students than other non-mindfulness emotional literacy or social emotional learning programs? Devcich et al. (2017) wanted to study and compare the effectiveness of a mindfulness-based program with another standardized emotional literacy lesson in elementary school students and their subjective well-being. Devcich et al. (2017) hypothesized that mindfulness would be superior, and the subjects of the research would demonstrate greater improvements in their own well-being.

Ninety-one fourth and fifth-grade students from a predominantly affluent public school in New Zealand participated in the study. A majority of these students were also "New Zealand European" (Devcich et al., 2017, p.314), which is important to note for

comparison purposes of other studies where students were from diverse areas both in terms of racial diversity and socioeconomic status. These students took part in an eight-week mindfulness course. During the program, body-based and breath-based practices explored the interaction between physical sensations, thoughts, emotions, and relationships with others and the environment as a whole. This course was taught for an hour each week by an outside meditation specialist, and the classroom teacher participated in the mindfulness practice with the students. Students were encouraged to journal about their feelings and awareness at the conclusion of each session. The control group took part in an emotional literacy curriculum designed to help students identify and manage their emotions. Both groups were surveyed before and after the eight-week testing period. The mindfulness group was also surveyed after 12 weeks to check for any longer-lasting effects of the mindfulness training.

Results from the eight-week intervention showed that although both groups saw an improvement in self-reported wellbeing, the mindfulness group reported "significantly greater improvements" (Devcich et al., 2017, p. 322). These major improvements for the mindfulness group were noted in both general well-being and subjective wellbeing.

One limitation of the study noted by researchers was while there was an outside meditation guide to lead the meditation and mindfulness intervention, and this allowed the teacher to participate, the classroom teacher taught the emotional literacy section to the control group. Because of this, researchers noted the possibility of students liking

the mindfulness and reporting greater wellbeing simply because of the uniqueness of the mindfulness instructor.

Mindfulness and mindfulness-based meditation can improve student wellbeing compared to an emotional literacy curriculum. Can it improve well-being and prevent stress? A 2012 study by van de Weijer-Bergsma et al. looked at "The Effectiveness of a School-Based Mindfulness Training as a Program to Prevent Stress in Elementary School Children". This study took place in the Netherlands, where 199 third, fourth and fifth graders from three different elementary schools participated. Schools differed in their levels of diversity, and classes were simply chosen to participate if the teachers volunteered their classes or not to be included in the research. The participating classrooms took part in two 30-minute sessions led by a meditation instructor, and the classroom teachers were asked to lead by reading a five-minute script the rest of the days. The sessions focused on developing a nonjudgmental awareness of sounds, bodily sensations, breath, thoughts, and feelings. Data was collected pre-intervention and post-intervention, as well as a follow-up time to check for longer-lasting effects. Children reported significant improvements in the ability to differentiate emotions, share emotions verbally, be aware of their bodies, not hide emotions, and have a sense of coherence from pretest to follow-up. In addition to these results, children who experienced rumination and continuous thought patterns experienced a significant reduction in those as well. Parents also reported a decrease in aggressive behavior and anxiety. The teachers also reported the effects on the classroom climate were an improvement.

Researchers concluded that it is, in fact, feasible to implement a mindfulness program in an elementary school, and there are benefits in the way of differentiating and sharing emotions and decreasing aggressive behavior and anxiety. One of the limitations that researchers made note of was that it was not entirely possible to rule out normal maturation for students who experienced a reduction in aggressive behavior and anxiety. Another limitation noted was the fact that teachers volunteered to participate in the research, which may result in some bias.

Mindfulness Decreasing Stress and Anxiety

There are multiple studies looking at the impact of mindfulness in reducing stress and anxiety in school-aged children. Another study compared how target and universally implemented mindfulness programs affect anxiety in students. Etherington and Costello (2019) chose to look at the difference between a group of 45 students in grades five and six who received mindfulness as part of their regular school curriculum and a targeted group of 20 students who were recommended for the intervention based on a referral from the teacher as having anxiety or trauma. Researchers believed it was critical to study a "direct comparison of targeted and universally implemented SEL programs will be useful in informing which approach leads to the best outcomes for students and is the most effective use of resources" (Etherington & Costello, 2019, p. 25). While they chose to focus specifically on reducing anxiety by using mindfulness interventions, researchers did voice concerns about missing valuable pieces, both in the way of advantages and disadvantages of mindfulness interventions. Also, Etherington and Costello (2019) chose to use a mixed methods approach to their research; capturing

data in the way of measuring anxiety and students' experience would give more of a complete picture of which method, universal delivery, or targeted instruction, would be more effective in reducing anxiety.

The intervention itself consisted of eight one-hour sessions over a 16-week time frame. The mindfulness sessions were conducted by a mental health professional, not the classroom teacher. Through the explicit teaching of social and emotional competencies, the program aimed to address anxiety in students. Data was collected at the beginning of the sessions and again at the end of the 16 weeks. After the data was collected and students were interviewed, the researchers determined that students who experienced higher amounts of anxiety before the intervention were able to reduce anxiety regardless of whether they were part of the universal delivery or the targeted instruction group. As part of the qualitative research, the interviews conducted led to valuable insight into how the students viewed mindfulness after the intervention. High and low anxiety students alike could name strategies they had used to help them cope with stressful situations. Overall, mindfulness and cognitive strategies appeared to be beneficial to both anxious and non-anxious children. Some used these tools to cope, and for others, resilience was fostered.

Badpa et al. (2019) looked specifically at junior high boys who can experience anxious thoughts and a can also experience a deficiency in tolerance that can affect their mental health as well as academics. Researchers analyzed the effects of mindfulness-based cognitive behavioral anger management therapy on anxious thinking.

Using the Anxious Thoughts Inventory (Wells, 1994), 30 male students who scored high in anxious thoughts were selected to take part in the intervention. Fifteen students were a part of the experimental group that received ten 90-minute sessions of mindfulness-based instruction during a two-month time period. The other 15 boys were part of the control group and received no interventions. The interventions included breath work, focusing on thoughts, emotions, and behaviors, as well as sitting meditations and homework.

After the 10 sessions and homework, researchers found a significant decrease in the anxious thoughts of those students in the experimental group compared to those of the control group. Researchers suggested that mindfulness-based cognitive therapy may be used to reduce anxiety in a population of adolescent boys.

Looking at ways to reduce anxiety to improve classroom behavior, Stapp and Lambert (2020) tried yoga as a way to be mindful and reduce anxiety. The purpose of this study was to examine the impact of mindfulness-based yoga on fifth-grade students' perceived anxiety and stress and to garner the teacher's perceptions of the intervention.

Fifty-eight students from three classes agreed to participate in this study. Stapp and Lambert (2020) conducted the research during math class, where students were divided into three different ability-based groups. A pre-questionnaire was given to the students and the teachers before the interventions were conducted. After collecting three weeks of baseline data, the intervention began. At the beginning of each class period, the teacher would lead students through breathing exercises where students

were to count their breaths. This was followed by some light stretching exercises. The application Headspace (2012) was also used as part of the intervention to provide students with guided meditation. At the end of the intervention period, the students were given a post-questionnaire that was identical to the pre-questionnaire, and they filled this out anonymously. The teacher was also interviewed to allow researchers the opportunity to seek the teacher's perspective on the intervention.

The researchers found that overall there was a slight increase in the students' perceived anxiety level, but a perceived decrease in stress levels. The students who had identified themselves as having Attention Deficit/Hyperactivity Disorder (ADHD) reported a decrease in perceived anxiety levels but an increased stress level. Students who had a lower ability in math saw a decrease in both perceived stress levels and anxiety levels. The teacher's perception was that mindfulness-based yoga helped with transitions during the day, making the classroom a more positive environment. The research concluded that mindfulness-based yoga did not hinder students but could be an added benefit to lowering perceived stress and anxiety and making the classroom a more positive environment.

Mindfulness and Emotional Behavior Disorder

Steiner et al. (2013) also looked at yoga as a mindfulness intervention and the effects it had on students classified as Emotional Behavior Disorder (EBD). The purpose of this study was to examine the feasibility of yoga training in groups for children with emotional-behavioral disorders in an urban school setting as an intervention to promote emotional and behavioral well-being and teach coping skills.

Students chosen to participate in this study were fourth and fifth graders who had been identified as having emotional and behavioral disorders by special education staff. The problem behaviors of these students included anxiety, depression, aggression, conduct disorder, hyperactivity, and attention difficulties. Students took part in two yoga sessions per week during the school day for three months. The classes took place at different times during the school day so as not to interfere with important academics. There were about seven to 10 students in each yoga session. The yoga sessions were divided into parts; a quarter of the session was spent on initial relaxation. This was followed by yoga exercises and group activities, which took about half the session. The final quarter of the session was spent in closing visualization and or meditation time.

Parents, teachers, and students filled out multiple standardized rating forms before and after the yoga intervention. The intervention itself was well accepted by the participants, their teachers, and their families. Steiner et al. (2013) did note that buy-in from the school was high, even though it was hard to accommodate two hours a week, where students participating would be pulled from their classrooms, but the school also knew help was needed with this population of students. The teachers stated a significant increase in improved focus as well as a significant decrease in problem behaviors for those students who participated in the yoga sessions. There were no significant findings from the parent reports, but students stated a slight increase in anxiety. Researchers attributed this possibly to stressful events that took place at the time the participants completed their post-intervention questionnaires.

The results of the study determined it is feasible and capable of producing positive results to provide yoga as a way to support children with EBD in an urban setting. A few limitations of this research were noted, such as a lack of parental involvement. It was difficult to get parents or guardians to return questionnaires and surveys, possibly skewing data. Also, given the urban setting of the school, these families may be transient, moving multiple times. It also might be possible that parents did not return the forms because they did not speak or understand enough English to complete them. Researchers also noted students had a hard time understanding a lot of the questions on the surveys, even though they should have had no problem understanding them. Steiner et al. (2013) also suggested given the results of this study, there should be a larger randomized control trial of yoga-based interventions in schools.

Yoga as a method of mindfulness can have benefits in the general education class, as can other forms of mindfulness and meditation. Research has shown that the benefits of mindfulness can include decreased anxiety and inattention problems (Crescentini et al., 2016), overall classroom behavior, and improved self-reported well-being (Devcich et al., 2017), but what about students who receive special education services? Can mindfulness make a difference to those students? Is mindfulness a viable option for stress reduction or decreased anxiety in children with disabilities?

Students with Emotional Behavior Disorders (EBD) can be a challenge in the classroom. Often, they have experienced trauma in their lives. They can experience anxiety and frustration, and it may be hard for these students to regulate their emotions. Mindfulness practices may help students regulate their emotions and calm

their bodies. Trained teachers are constantly implementing new practices to improve the quality of their teaching and the quality of students' learning. The authors of this study, Malow and Austin (2016), set out to prove students with EBD could benefit from regular mindfulness practice and that teachers could implement this practice with little to no extra training.

Fifteen EBD students who were attending summer school took the Resiliency Scales for Children and Adolescents (2007) before starting their six-week summer school program. On the first day of summer school, a certified teacher began implementing a mindfulness practice with the students. Each daily session was five to 10 minutes long. At the end of the six weeks of summer school and the daily mindful practices, the students took the survey again.

The study found that the students with EBD perceived themselves to have a stronger feeling of mastery in the areas of optimism, self-efficacy, and ability. They also perceived themselves to be better at interacting with others and building and maintaining relationships. The teacher was able to implement the mindfulness practice with little training and little time, demonstrating mindfulness practices are relatively easy to implement and can improve the resiliency of students with EBD. Although the test group was small, because of their disability, it was a perfect audience to work with to improve their resiliency. In addition to the resiliency scale that was used, there was also anecdotal data from the participants. Both the teacher and the students mentioned favorable results. Between the resiliency scale and the anecdotal data from the participants, the authors concluded that by incorporating mindfulness practices or

activities into their day, students with EBD were better able to regulate their emotions and behavior, and periods of anxiety were reduced (Malow & Austin, 2016).

According to the research completed by Malow and Austin (2016), mindfulness can help build resiliency and reduce anxiety in students with EBD. What about on and off-task behavior? Can mindfulness help EBD students improve their on-task behavior? Rush et al. (2017) used a mindfulness based, social emotional based curriculum to determine whether it has any effect on the on-task and off-task behavior of students with emotional disturbances in special education emotional support classrooms. This particular mindfulness based, social emotional based curriculum, HeartSmarts (Heartmath Science and Research, 2013), included bio feedback as a way to immediately see their heart rate and breathing and then to be able to control their breathing and heart rate and as a way to regulate their emotions.

Thirty-one students who had previously qualified as EBD took part in this study. The majority of these students were boys and ranged in age from eight to 13. Students were observed for off-task behavior using a standardized observation scale. This observation took place in two 30-minute time periods, one before and one after the intervention. The students were placed in two groups. One was a control group that continued their weekly social skills with their school psychologist. The test group received specific instruction, including the biofeedback, in 20 to 30-minute sessions across a 12-week time period. The instruction was led by a trained school psychologist, however, this was because the school psychologist had previously taught the social skills group.

The results of the study showed that students who participated in the study had an 18 percent decrease in off-task behavior compared to the control group. The control group did not experience decreased off-task behavior; in fact off-task behavior increased slightly.

A decrease in off-task behavior in students would seem to make this a successful study. However, there were several drawbacks or limitations to this research. One, school resources are limited, and the observations were conducted by a school psychologist, not an independent observer, who may have bias, especially if they are also implementing the curriculum. Only one pre and post-observation of 30 minutes was done, so there were no averages available. Finally, the curriculum used has both a mindfulness and social emotional component. It is not possible to say it was the mindfulness component and not the social emotional component that produced the results of the increased on-task behavior for students with EBD.

Mindfulness and Intellectual Disabilities

Students who have qualified for special education services with EBD are not the only ones who may struggle with on-task behavior and performance or task completion. Students with intellectual disabilities (ID) may also struggle to remain on-task and have issues with task performance and completion. The goal of Kim and Kwon (2016) was to assess the effectiveness of mindfulness based intervention (MBI) on an individual with mild ID. The researchers looked at three parts of the MBI: to see whether a mindfulness based intervention could lower task avoidance in kids with intellectual disabilities, to see

if an MBI could improve on-task behavior, and if the level of improvement would stay the same once the intervention was complete.

There was a small test group of three students who qualified for the study. These children were from the ages of 10 to 12 and had an IQ in the range of 50 to 69. They attended general education classrooms but did have an Individual Education Plan (IEP) and were part of a special education program. Their teachers and parents reported task avoidance, but the children could read and write at least five sentences in their home Korean language. The study took place in the children's homes and was video recorded so that researchers could tally the time on-task. A pre-intervention baseline was established for the three children.

The intervention itself was lengthy. The three children received 25 mindfulness sessions twice a week. Each session was about 45 minutes long. The mothers of the three children met with the instructors prior to the intervention so that the needs of the children could be discussed. The intervention was also adapted slightly to each participant, based on his or her needs.

According to the results, all participants demonstrated improvements in their performance in the task, including an increase in their on-task behavior, an increase in their completion accuracy in arithmetic, and a decrease in the time taken to complete the task. During the maintenance phase of the intervention, the mothers reported their thoughts. They all commented on a variety of improvements, ranging from appropriate communication, increased attention span, and the ability to calm down. Kim and Kwon (2016) suggested a MBI procedure of this kind would be an appropriate addition to a

wide range of applications pertaining to task-avoidance, off-task behavior, and other maladaptive behaviors. This MBI could be used in a variety of settings such as school, home, or out in the community. Finally, researchers suggested various behaviors could be addressed by using this MBI approach. In addition to academic learning, school violence prevention, impulsive behavior, and other undesirable behaviors may also improve from using an MBI.

Mindfulness and Learning Disabilities

Kim and Kwon (2016) found success in a small group of students with intellectual disabilities. They also suggested mindfulness based interventions could be helpful in decreasing undesirable behavior. What about students with learning disabilities? Can mindfulness help students who have identified learning disabilities? Thornton et al. (2017) looked at a group setting and wanted to know if group mindfulness practice helps young people with learning disabilities. Five students ranging in age from 13 to 15 who had been identified as having mild to moderate learning disabilities took part in the study. These five students were also known to struggle with anxiety. Each of them had a history of anxiety, along with other difficulties such as low moods, low self-esteem, and difficulties with social skills. Like the Kim and Kwon (2016) study, this control group was small, and it had a parent or caregiver involved. The caregivers were used as support for their children, for follow-up reminders, and for feedback purposes. This study also took place outside of a school at a child and adolescent mental health services location and was conducted as a group. There were surveys for the students as well as the caregivers to fill out before and after the intervention. Researchers specifically used the Screen for

Child Anxiety Related Disorders (SCARED) (1997) questionnaire because all of the students experienced anxiety and this particular screen is used to assess anxiety as well as anxiety related to school.

The intervention itself was based on the specific needs of the five students. It took place once a week for six weeks, for about an hour at a time. As the group was designed primarily as an experiential learning experience, the group members were able to observe the impact of participating in various mindfulness-based practices. Even though one of the students noted a slight reduction in anxiety after the intervention, due to the fact that only two of the students returned their SCARED questionnaire, it was impossible for researchers to conclude if there was a reduction in anxiety. Parents also reported little change in the anxiety of their students after the intervention. However, both student participants and their parents reported benefits from the MBI. Parents most frequently mentioned mindful breathing as being helpful for their children.

Thornton et al. (2017) found the participants and their parents thought mindfulness was beneficial, but with this small sample size, mindfulness could not be proven to reduce anxiety in students with learning disabilities. Keller et al. (2019) also looked at mindfulness to reduce anxiety in students with learning disabilities, but their research asked more questions. Among children with Learning Disabilities (LD), mindfulness has the potential to promote generalizable gains in literacy skills through training in self-awareness, self-acceptance, and self-regulation (Keller et al., 2019). Their goal was to determine whether mindfulness training would reduce anxiety and increase

writing and reading abilities, positive affect, self-awareness, self-efficacy, and the use of metacognitive strategies.

Twenty students from grades two through five were recruited from a school district in the Southwest (New Mexico). These students had met the learning disability (LD) criteria through the special education assessment team. Looking at criteria such as age, sex, and amount of services, students were paired as closely as possible to each other. One member of the pair was randomly assigned to the control group, and the other was assigned to the experimental group. Overall, 18 students participated in the study. For the baseline information, students were given a standardized reading test, a writing task, and a lexical decision-task. Both groups then participated in the district's summer school program, which was 25 days long and six hours a day. Each group was exposed to phonics instruction, phonemic awareness, spelling, and a fluency exercise. The control group received an extra dose of phonics and spelling instruction whereas the experimental group received literacy instruction and mindfulness. In addition to teaching students decoding strategies (e.g., context cues, phonetic cues), mindfulness was used as a metacognitive strategy to alleviate symptoms of cognitive interference, fatigue, and anxiety that arise during instruction (Keller et al., 2019). As did Rush et al. (2017), Keller et al. (2019), used HeartSmarts (Heartmath Science and Research, 2013) biofeedback. Running records, as well as writing samples and heart rate information, were tracked daily.

After the five-week intervention, students repeated the baseline testing. In this mixed method research approach, interviews, journals, and researchers' notes were

also collected and analyzed. Researchers found mindfulness helped slightly in students' writing, especially in the areas of students using their voice and vocabulary. In reading, there was no improvement noted, but researchers attributed that to the student's use of metacognitive strategies while decoding text. Students were deliberate in their thinking and decoding words; they were no longer just guessing at the words. Also, a significant decrease in the average heart rate of the experimental group was observed over the five-week intervention, suggesting a decrease in anxiety. As researchers analyzed the qualitative data, they found improvements in reading and writing in the way of samples. Students were also clearly using metacognitive strategies to decode words. Positive affect was also increased as a result of mindfulness instruction, as were self-awareness and self-efficacy (Keller et al., 2019).

Although these results were hopeful, researchers noted the small sample size as a fault in the study. However, with the promising benefits of mindfulness to improve common characteristics of a learning disability, researchers suggested further research on a larger scale.

Malboeuf-Hurtubise et al. (2017) examined not only how mindfulness could affect students with learning disabilities but also the feasibility of using mindfulness with students who have learning disabilities. In addition to problems such as inattention and conduct problems, students with severe learning disabilities often exhibit signs of anxiety, depression, and problem behaviors. Is it possible for mindfulness-based interventions (MBI) to alleviate some of those signs and symptoms? With those

thoughts in mind, Malboeuf-Hurtubise et al. (2017) sought to find out the answer to that question.

Students from one special education class, which included fourteen students and their teacher, were asked to participate. In order for the students to qualify to participate in the study, they had to have met the criteria for a learning disability, struggled with reading, writing, and math, and were academically behind their non-disabled peers by at least two years. They also had to be willing to fill out questionnaires before and after the eight-week mindfulness intervention. Their teacher also filled out questionnaires on each student pre and post-intervention.

The intervention was one 60-minute session each week for eight weeks. In order to make this research project smoother, the length of each session was adapted to fit one daily classroom period to accommodate elementary school students' short attention spans. There was also in-class practice and homework assigned each week. After the intervention, students completed self-reports, as did the teacher. The results of the self-reports as well as the teacher report showed mindfulness had a significant positive impact on symptoms that often coexist with severe learning disabilities in children, especially in the areas of anxiety and depression. It was also discovered that there were significant decreases in aggression, conduct problems, and attention problems according to the teacher's report. The teacher’s report also noted issues with aggression, behavior problems, and inattention also decreased.

Researchers noted several strengths to their research. One, the sample group was uniform in their special education classification; the participants all had severe

learning disabilities. Two, the group stayed the same size throughout the study. Possibly the biggest strength of this research was its uniqueness of it. Researchers focused on how mindfulness can affect students with learning disabilities and "thus bridging the gap between studies in regular classroom settings and research for special education children" (Malboeuf-Hurtubise et al., 2017, p. 479). The conclusion of the researchers indicated that MBIs is an interesting avenue to alleviate comorbid psychosocial symptoms of LD in elementary school students, and their data showed MBI's could reduce mental health symptoms.

Another study by Malboeuf-Hurtubise et al. (2018) not only looked at the feasibility of MBI's, but also at how it affected elementary school students with learning disabilities' perception of basic psychological need satisfaction (competent, autonomous, and relatedness). Researchers "hypothesized that our MBI would have a significant and positive effect on need satisfaction among these students, namely that they would feel more autonomous, competent and socially related pre-to-post-intervention" (Malboeuf-Hurtubise et al., 2018, p. 35).

This mindfulness based intervention met once a week for 60 minutes a session for eight weeks. There were 14 students in one special education class that took part in this intervention. Like the previous Malboeuf-Hurtubise et al. (2017) study, the MBI was adapted to be developmentally appropriate for elementary students based on their needs and attention span. Students did have a weekly homework assignment, and were expected to practice mindfulness with their teacher at least once a week outside the intervention session. Students completed a pre and post intervention survey and rated

how their basic psychological needs satisfaction of competence, autonomy, and relatedness felt on a daily basis.

After the eight-week intervention, the post intervention surveys suggested an overall decline in the student's perception of their basic psychological need satisfaction, especially in the area of competence. Malboeuf-Hurtubise et al. (2018) theorized this was because as students become more mindful, they may become more conscious of their inadequacies.

The unique study had a small sample size and no control group or a follow-up measure. Although researchers did not get the results they had anticipated, they suggested that if they had an additional measure after the intervention, they may have seen an increase in need satisfaction due to a greater awareness of their experiences. However, it could be argued the opposite may have happened as well.

Mindfulness and Attention Deficit Hyperactivity Disorder

According to Malboeuf-Hurtubise et al. (2017, 2018), mindfulness does not improve perceived basic psychological need satisfaction, but it has been shown that MBI's can reduced mental health symptoms in children with learning disabilities. What about those children who have ADHD? Those children can also have anxiety, depression, and other mental health symptoms that could be related to their diagnoses. Can MBIs help alleviate those symptoms? Can it help with inattentiveness as so many children with ADHD struggle with inattentiveness? How can this also affect the children's families? Can mindfulness help families with children who have ADHD? If parents participate in mindfulness with their children, does that help the children or parents?

Does it alleviate stress and inattention for the families? Does mindfulness training or intervention have to take place in a school in order for students receiving special education services to experience its benefits? van de Weijer-Bergsma et al. (2011) had a group of students with ADHD and their parents participate in an eight-week mindfulness intervention to research the effectiveness of mindfulness training for adolescents with ADHD and mindful parenting for their parents. These students had been referred to an academic treatment center with diagnoses or support or both. All participants took a pretest prior to the intervention and a posttest immediately after the mindfulness training. Each student had at least one parent participate in the intervention, and the parents who did not participate in mindfulness, still participated by answering questions in the pre and posttests. Follow-up tests were also administered after the intervention at the eight-week and 16-week mark to see if there was any lasting effect from the mindfulness training.

The intervention was eight weeks long, and students met each week to practice mindfulness for an hour and a half. Following the last session, families participated in an additional “booster” session eight weeks later. Students were taught to improve their attention and self-control by using mindfulness activities. They took part in mindfulness activities like body scans and breathing meditations, but they also took part in additional exercises that targeted specific problem behaviors associated with ADHD. The ability to recognize one's distractibility, impulsivity, and hyperactivity was strengthened, along with the practice of breathing space during such situations. Parents received eight weeks of mindful parenting practice. Both children and parents had homework

assignments to complete outside of the weekly sessions. Measures were taken in behavior symptoms, executive functioning, mindful awareness, parenting stress, parenting style, happiness, fatigue, and a computerized attention test.

According to the self-reports, the students who had participated in the mindfulness session had reduced attention problems, as well as reduced externalizing and internalizing. Executive functioning had improved. These improvements were corroborated by better performance on the computerized attention tests. At the eight-week mark, self-report results were still strong and confirmed again by computerized test. Sixteen weeks after the intervention, the drop in problem behaviors had weakened. Fathers, even the non-participating fathers, noted a considerable decrease in stress after the eight-week training.

The results of this study showed an overall improvement for children with ADHD and their families, but the study was not without drawbacks. The small sample size was noted, as was the lack of a control group. Also, as with other studies where teachers participated in the mindfulness, parents who participated may have been more aware of ADHD symptom improvements in their children, or they may have been more relaxed and not as critical of the symptoms and undesired behaviors. There was mindfulness practice for the students and mindful parenting for the parents; it is hard to say which one had more impact on the success of the study.

Haydicky et al. (2012) also wanted to study the effects of a mindfulness intervention on youth with learning disabilities in combination with ADHD or anxiety. Specifically, Haydicky et al. (2012) wanted to know if a mindfulness based martial arts

program could improve executive functioning and decrease problem behaviors, such as anxiety and defiance.

This intervention also took place in a mental health clinic as opposed to a school, so the 49 participants were either previous or current clients. These participants were all male, between the ages of 12 and 18, and had all been previously diagnosed with a learning disability. The forty-nine participants were also placed into three sub-groups: a group with learning disabilities and ADHD, an inattentive group, and an anxiety group. Twenty-one students were in the mindfulness martial arts (MMA) group, and 28 were in the waitlist group. The intervention itself was a 20-week program. Each week, there was an hour-and-a-half session that included mindfulness cognitive behavioral therapy (CBT) and mixed martial arts. Like other mindfulness interventions, MMA emphasizes impermanence, nonjudgment, acceptance, letting go, and focusing on the present moment as core mindfulness concepts. Participants also had weekly goals to work towards and homework assignments. Weekly meetings with parents and therapists monitored progress. Using many standardized rating scales, parents and children rated themselves before and after the 20-week intervention.

The results differed slightly from what researchers had hypothesized. The outcomes were looked at in the three different sub-groups. Within the ADHD sub-group, those students who took part in the MMA intervention had significant improvements with conduct problems and oppositional defiant problems, according to the parent rating scale. However, this group saw no significant change in executive functioning or social skills. The inattentive group also saw a decrease in social problems as rated by

parents, but again, no progress was made on executive functioning. The group that reported anxiety at the beginning of the intervention saw a decrease in anxiety post-intervention. In this study, mindfulness combined with martial arts was found to be an effective intervention for youth who suffer from ADHD and anxiety. Only partial support was found for the idea that mindfulness could improve executive function. Changes in monitoring were made in the ADHD subgroup, but no changes were noted in emotional control, flexible thinking, or inhibition. Researchers did note that it was possible the survey used to measure these things was not sensitive enough to notice a difference pre to post test.

Although there was a waitlist group for all three subsections of this intervention, it is possible that students and their families sought treatment elsewhere, which would make the data difficult to decipher. An additional limitation noted by the researchers was parental basis in reporting. Haydicky et al. (2012) also noted further research should be done to compare the effects of mindfulness alone to mindful martial arts or cognitive based therapy. Because a group of students can participate in the MMA class at one time, this intervention could have a larger effect size and reduce the cost of individual therapy. However, because the instructor needed special training, this intervention may not be easily duplicated in other settings, especially schools.

Mindfulness and Autism

Another category of special education students is students with Autism Spectrum Disorder (ASD). One study used mindfulness to train parents of children with ASD to see the effect on them as parents, to train the parents to teach their children

with ASD mindfulness, and to investigate the effects of mindfulness training mediated by parents on children with autism spectrum disorders (ASD) and behavior problems (Hwang et al., 2015). This intervention and investigation were not related to school problems, but behavior problems associated with ASD. Perhaps some of the findings could translate to students at school or universally improved behavior for students with ASD.

Because there were three guiding questions to this research, there were three parts to the study. Participants were mother-child pairs. The children were between the ages of eight and 15 and had been diagnosed with some form of autism. They also all exhibited some problem behaviors, including verbal aggression, physical aggression, and self-injury and damage. The first part of the research was to train the parents, in this case all mothers, in mindfulness. These moms took part in a two and half hour weekly mindfulness session for eight-week at a yoga studio. After the initial eight weeks, the mothers completed a two-month self practice time. This was to prepare them for stage two of the intervention. Stage two consisted of the mothers guiding their children in mindfulness practices. Hwang et al. (2015) made weekly visits to support the mothers and children in mindfulness. The mothers also had a chance to take part in an online session to continue mindfulness practice and training. This stage of the intervention lasted twelve months. Children were also able to self select some of the mindfulness practices.

Different standardized tests were given to both the parents and the child prior to and after the mom's mindfulness training and after the children's mindfulness training.

The moms had increased levels of mindfulness after their initial training. Five out of the six moms reported decreased parenting stress after the mindfulness intervention. After completing parent mindfulness training, mothers reported a reduction in anxiety and thought problems for their children with Autism Spectrum Disorders and problematic behaviors, and at the group level, there was a visible decrease in anxiety and thought problems for the children who participated in the study. Four of the moms reported a decrease in aggressive behaviors from pre intervention to post child mindfulness training. Reductions in parenting stress were also noted after the completion of the child mindfulness training, along with a slight increase to family quality of life (Hwang et al., 2015).

This was a small and lengthy study but offered improvement for families with children with ASD and behavior problems. Hwang et al. (2015) noted that further research should include how this could be translated into a school setting and how mindfulness could be used as an early intervention for families with children on the Autism Spectrum.

The main purpose of the next study was to look at the effectiveness of a school-based mindfulness program for improving both attention and inhibitory skills in students with ASD (Juliano et al., 2020). This study also looked at the effects of the comorbidity of also having an ADHD diagnoses.

Twenty-seven students met the criteria and completed the study. A majority of those students were male, which matches the ASD population. Students were English speaking who were between the ages of 10 and 17 and had a previous diagnosis of

autism. All the participants happened to be higher functioning ASD students, but a lot of these students had additional diagnoses, labels of ADHD, anxiety, sensory processing disorder, or speech and language issues. As part of the baseline test, three neuropsychological tests were administered. Specifically, these tests were chosen to determine the effect of the school-based mindfulness intervention on both attention and inhibitory skills. The Mindful Schools curriculum (Mindfulschools.org, 2010) was used twice a week for eight consecutive weeks, and each session lasted thirty minutes. According to Juliano et al. (2020), mindful schools were specifically chosen for their low intensity, low frequency, and brief intervention. It is an easily incorporated mindfulness program into the school day without affecting the schedules of students or educators significantly. A mindfulness educator taught the sessions and depending on the needs of the students there were two to five additional educators who also participated in the intervention.

After the intervention, the three neuropsychological tests were given again. Significant improvements were found in the prepotent response inhibition section of the testing, as well as moderate improvements in interference control. Also, mistakes made were lower in the test after the intervention, and selective attention improved. Executive functions also improved after an eight-week mindfulness intervention. There was also no significant difference between the results of the comorbid ASD ADHD group and the group of students with only an ASD diagnoses. This is important because improvements to executive functioning due to the intervention were not any more or less beneficial to students with only ASD versus those who had both ASD and ADHS.

There were several minor limitations with this study. There was no control group to compare results with the test group. The sample group was also fairly homogenous, with higher-functioning Caucasian students who did not necessarily represent the demographics of the population. However, the research of Juliano et al. (2020) demonstrated that there are benefits for students with ASD and ADHD who practice mindfulness. School based mindfulness can be accessible to most schools, making it feasible to implement. Teachers are also involved with the intervention and may also receive added benefits from mindfulness instruction.

Mindfulness can have positive affects for students with ASD in the areas of attention, inhibitory skills, and executive functioning. Can it help with emotional regulation ability in students with ASD? Conner et al. (2019) used a new intervention they developed to improve emotional regulation (ER) called Emotion Awareness and Skills Enhancement Program (EASE). This program highlighted both mindfulness and distress tolerance to increase emotional regulation in both adolescents and adults with ASD. The aim of EASE is to learn to remain in control even when faced with strong negative emotions rather than to avoid such feelings or thoughts altogether Conner et al., (2019). Researchers were aiming to create a mindfulness intervention that was easy to implement or accessible to people and that would decrease ER impairment.

The study took place across two university-affiliated clinics. One was a university medical setting in an urban area, and the other was in a rural area. The participants were between the ages of 12 and 17 and had a clinical diagnosis of ASD. Participants also had at least one are of concern with emotional regulation according to a parent

report and the parent had to attend the session with the participant. Parents completed a rating chart as part of the baseline data.

The intervention was sixteen sessions within four units. The units focused on an ABCD model: Awareness, Be accepting, Change, or Distract. Each unit had several individual sessions where skills were personalized to the need of the participant. There was also one session where those skills were applied and practiced. Students also had access to online session and an e-coach.

This mixed methods research quantitative data was used in order to assess the success of the EASE program. It also collected qualitative data from the participants in order to improve the program and make it more accessible. This preliminary study indicated that the EASE system is feasible to implement and suitable for students with ASD. Perhaps more importantly, there was a moderate to large reduction in ER impairments as well as decreases in depression, anxiety, and problem behaviors (Conner et al., 2019).

Again, even with the promising results, like Juliano et al. (2020), the sample size of Conner et al. (2019) was small fairly homogenous, and there was no control group. However, the promising results warrant further research. Even though this study took place outside of a school, if it is easy to implement, maybe it would be appropriate to look at implementing in a school setting.

Felver et al. (2017) looked at mindfulness in special education students in general and by the behaviors demonstrated, not necessarily by classification of diagnoses. Like Conner et al. (2019), Felver et al. (2017) used a specific mindfulness-

based intervention, Soles of the Feet (Singh et al., 2003). In a 2014 study by Felver et al., researchers looked at how using the mindfulness technique Soles of the Feet (SoF) improved academic engagement and decreased off-task behavior. The goal of this current study was to replicate a previous study but with special education students. Researchers thought that not only would SoF increase academic engagement in special education students, it would decrease disruptive behavior, and be suitable to use in inclusive, special education settings.

The criteria for participants in this study included English speaking, special education students in grades three through eight. These students had been identified as students with high levels of disengagement, disruptive behavior, or off-task behavior. Eight students were identified and were asked to participate in the study. These eight students received the intervention, but due to lack of resources and personnel, only half those students were observed. The interventionist did not know which students the data would be collected for, essentially making this a blind study and reducing bias. The four participants who were observed were three students with a special education label of EBD, and one qualified for special education services under the Other Health Disabilities because he had a medical diagnosis of ADHD. The four participants who were observed all had disruptive, off-task behavior.

The SoF process involves teaching students a highly generalizable routine, primarily the ability to notice somatic sensations in their feet when they are experiencing challenging emotional states (Felver et al., 2017). The interventionist taught students how to pay attention to their feet, use the SoF routine mindful

breathing. The interventionist met with students five times; each of those five sessions lasted 20 to 30 minutes. After the intervention, students were observed again for on and off-task behavior.

Data from this study suggested a modest but positive growth for students with disabilities can be positively influenced by SoF mindfulness-based interventions, decreasing off-task behavior and disruptions and, in turn, increasing on-task behavior. Even though this study was small and due to a lack of time and resources and students' attendance was spotty not allowing more data points, data suggested Soles of the Feet can decrease disruption and increase on-task behavior. An additional strength of this study was SoF was accessible to students and teachers and easy to use or learn. This mindfulness strategy could also be taught with only eight hours of training and limited prior knowledge or formal experience with mindfulness.

CHAPTER III: DISCUSSION AND SUMMARY

Summary of Literature

Throughout the research, a few themes emerged in how mindfulness affects general education and special education students, and teachers. The first major benefit to mindfulness among students, both general education and special education alike, was reduced stress and lessened anxiety (Badpa et al., 2019; Conner et al., 2019; Crescentini et al., 2016; Etherington & Costello, 2019; Haydicky et al., 2012; Hwang et al., 2015; Keller et al., 2019; Malboeuf-Hurtubise et al., 2017; Malow & Austin, 2016; Stapp & Lambert, 2020; Steiner et al., 2013; van de Weijer-Bergsma et al., 2011). Students experiencing anxiety can have problems with relationships, both with peers and teachers. They can struggle to complete work or show their understanding to what is being taught. When anxiety is lessened, it can lead to more productive students, fewer problem behaviors, and more peaceful classroom environments in general.

Improved behavior and on-task behavior were another benefit of mindfulness among all students (Axelrod & Santagata, 2021; Harpin et al., 2016; Haydicky et al., 2012; Kasson & Wilson, 2016; Schonert-Reichl et al., 2015; Stapp & Lambert, 2020; van de Weijer-Bergsma et al., 2012). Improvement in behavior led to positive outcomes in overall classroom behavior as well. Teachers and students alike benefit from a positive classroom environment with appropriate classroom behavior. Mindfulness can also lead to student wellbeing and promote school culture (Bakosh et al., 2016; Black et al., 2014; Devcich et al., 2017; Schonert-Reichl et al., 2015; Stapp & Lambert, 2020; Vickery & Dorjee, 2016).

Mindfulness can lead to lessened anxiety and stress and improve on-task behavior while promoting student wellbeing and school culture. If it is not easy to implement, teachers, as well as schools may not be excited about trying mindfulness as a behavior intervention. However, teachers can easily implement some mindfulness interventions (Black et al., 2014; Janz et al., 2019; Schonert-Reichl et al., 2015; van de Weijer-Bergsma et al., 2012; Vickery & Dorjee, 2016). Even though demands on teachers are great, mindfulness interventions may be a beneficial use of time given the positive results.

One other area mindfulness affected students in the general education setting, both general education students and their disabled peers, was in executive functioning (Conner et al., 2019; Flook et al., 2010; Janz et al., 2019; Juliano et al., 2020; Su & Swank, 2018; van de Weijer-Bergsma et al., 2011, 2012). Students with poorer executive functioning skills (with or without receiving special education services) saw a larger improvement than those with average executive functioning skills (Flook et al., 2010).

Mindfulness in the classroom can lead to decreased stress and anxiety, decreased problem behaviors, and increased on-task behavior, however, it did not increase academic engagement or grades for some students (Axelrod & Santagata, 2021; Bakosh et al., 2016; Keller et al., 2019).

Looking specifically at mindfulness and special education students, the research indicates similar results to that of their non-disabled peers. There was improved academic engagement and decreased off-task behavior (Felver et al., 2017).

Mindfulness interventions can lessen anxiety and problem behaviors in students with attention deficit- hyper activity (ADHD) as well as students with autism spectrum disorder (ASD) and improve executive functioning (Conner et al., 2019; Crescentini et al., 2016; Haydicky et al., 2012; Hwang et al., 2015; van de Weijer-Bergsma et al., 2011). Students with emotional behavioral disorders (EBD) also benefited from mindfulness interventions by reduced anxiety (Malow & Austin, 2016) and increased on-task behavior (Rush et al., 2017; Steiner et al., 2013). Students with intellectual disabilities also saw increased on-task behavior (Kim & Kwon, 2016). Students with learning disabilities also found mindfulness interventions beneficial (Keller et al., 2019; Malboeuf-Hurtubise et al., 2017, 2018; Thornton et al., 2017).

Limitations of the Research

Research was limited by searching different mindfulness techniques for students with and without disabilities, specifically looking at students aged in elementary classrooms or elementary-age students. However, with the limited studies, the age range increased from approximately five to 15. I also took into consideration how different mindfulness techniques affect students in general and then specifically in the special education categories. I tried to limit the research perimeters to mindfulness interventions that took place in the classroom or school setting, however, the few articles reviewed (Conner et al., 2019; Haydicky et al., 2012; Hwang et al., 2015; Kim & Kwon, 2016; Thornton et al., 2017; van de Weijer-Bergsma et al., 2011) that took place outside the school setting, in private practice for example, strengthened the validity of the results. Because time and resources are limited and there is so much to accomplish

in classrooms, I also took into consideration the ease of implementation for teachers. Also, I tried to limit research to what was happening in the United States, but that also limited the research that I found, so I opened up the scope to include what was happening worldwide.

The research was also limited based on the effects mindfulness interventions had, such as on a student's wellbeing, executive functioning, anxiety, stress reductions and behavior problems. These effects were looked at for students with and without disabilities.

Although there are many examples of specific mindfulness-based interventions by type (such as breath work, yoga, mixed martial arts) and by specific curriculum, my hope was to find research based, cost effective interventions for teachers that were highly engaging and easy to implement in the elementary classroom setting. I was also looking for an exact answer to how mindfulness can affect special education students in the classroom setting, such as following a certain procedure and this desired effect would take place. Implement a whole classroom breathing practice and you will have perfectly mindful students who do not make poor choices or misbehave.

Implications for Future Research

Elementary school teachers already have much on their plate. There is very little time and resources for extra things in the day, but problem behaviors are increasing, as is anxiety in students and teachers. Academic demands are being placed on students, and their needs are increasing, both academically and socially, and resources are dwindling. How do teachers continue to do more with less? How do teachers build

resiliency in themselves and all of their students, both general education students and those students with disabilities? Can mindfulness help with that? Which type of mindfulness based intervention can help with that? Which type of mindfulness intervention is the "biggest bang for your buck"?

The research says mindfulness interventions can reduce anxiety, prevent stress, and increase wellbeing. Why are mindfulness based interventions not being more widely used in classrooms? Will mindfulness be an acceptable part of the growing social emotional learning or emotional literacy?

Implications for Professional Application

What does this mean for the practice of teaching? How can I, as an educator, first as a general education teacher and then as a special education teacher, ensure all my students have opportunities to work in a positive, peaceful environment? Mindfulness can be an opportunity to provide that peace for students. There should be more space and time for mindfulness practices during the school day. Allowing students to learn how to be non-reactive could be a game changer for students, teachers, and the school climate in general.

General education students could benefit from mindfulness practices because a lot of our general education students are facing similar issues as their disabled peers such as crippling anxiety and pressure to perform at a certain standardized level. Interpersonal problems with other students become behavior problems as young students do not yet have the tools to deal with and resolve conflict. Mindfulness could be implemented to help with all these things.

Special education students are general education students first. Like general education students, they also need tools to be successful in navigating school and life beyond. However, special education students have more needs and sometimes a smaller threshold for having those needs met. Because of their disabilities, special education students are at an unfair advantage when it comes to functioning in a general education classroom. Whether the pace is moving too quickly for them or they need to continuously revisit the content, leading to frustration and, in turn, problem behaviors, special education students may need more tools available to them to help them be successful. Mindfulness could be one of these tools. Mindfulness is accessible to all and could be something that helps "level the playing field" for special education students, especially in the general education setting.

Teachers can also benefit from mindfulness practice. Either a mindfulness practice of their own or one together as a class could be beneficial for teachers and in turn, students. Teachers are making many split-second decisions each day and a lot of times react to situations which may make the situation worse for everyone or take more time to deal with than necessary. If teachers practiced mindfulness, it could help them be less reactive, more content, or at least calmer. Calmer teachers have calmer classrooms. Calmer classrooms can be more productive.

Time and resources are very limited in most schools, but this seems to be especially true in public schools. There is no time to add more into the day. However, because of the varieties of mindfulness, students could be taught how to be mindful and practice that mindfulness in short periods of time. This time that is taken away from the

daily schedule may reduce problem behaviors that take more time to deal with or correct and in turn, add time into the school day. If a five to ten minute mindfulness practice each day resulted in less problem behaviors, would not that be more than worth the time investment? Students and teachers alike would be more content, less anxious, less reactive, and most likely more productive. It could be argued that a mindfulness practice could be a very cost effective way to have happier, healthier classrooms and schools.

Mindfulness could be a tool students could use throughout their lifetime. That is what is wanted for students. Equipping students with tools so that they can be happy, healthy, well-adjusted students helps them move on to be productive, contributing members of society. Mindfulness could be a tool that students take with them and use to help them be content, productive adults. Why would we not want them to have that as a tool now?

Mindfulness can be incorporated with yoga or mixed martial arts. Although those methods of mindfulness might be engaging and somewhat of a novelty for students, they are not practical for most teachers to implement. However, mindfulness breath work or body scans could be implemented with a little training and a little time and with little cost to schools or teachers. Mindfulness could lead to saving time in the end, as it reduces problem behavior and increases on-task behavior. It could also lead to happier, healthier, more content, calmer students of all abilities, which increases productivity and promotes school climate.

Conclusion

Mindfulness can be beneficial to both general education students and special education students. It can reduce anxiety and problem behaviors as well as increase on-task behavior. It can also improve executive functioning. Mindfulness interventions can be easy to implement creating positive classroom culture for all students.

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