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The Effects of a Mindfulness-Based Intervention on Middle School Students with Special Needs

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This thesis, written under the direction of the candidate's thesis advisor and approved by the program chair, has been presented to and accepted by the Department of Education in partial fulfillment of the requirements for the degree of Master of Science in Education.

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The Effects of a Mindfulness-Based Intervention on Middle School Students with Special Needs

by

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A culminating thesis submitted to the faculty of Dominican University of California in partial fulfillment of the requirements for the degree of Master of Science in Education

Dominican University of California

San Rafael, CA

May 2019

Abstract

Adolescence is a vulnerable period to a child's emotional and social environment due to the puberty-related changes in hormones, which has an effect on their judgement, impulse control, and emotional regulation. Middle school students face several daily stressors at school, at home, and in their communities. Although adolescents face stressors in and out of school, a mindfulness-based intervention (MBI) can be beneficial. This research focuses on the effects of a mindfulness-based intervention on middle school special education students in regards to their attention and behavior in general education classes as well as their self-perception. While prior studies address the benefits of an MBI on students at the elementary and high school levels, there is little research showing how mindfulness affects middle school students, specifically students with special needs. Taking a mixed methods approach, this study involved implementing a mindfulness-based intervention in a life skills math class of ten sixth, seventh, and eighth grade special education students. Data was collected through surveys, focus groups, interviews, and observations. The findings from the research show that the MBI was significantly effective for improving the attention and behavior of students who qualify for special education services under the Other Health Impairment (OHI) category. In addition, students' self-perceptions in regards to school motivation and attention improved after participating in the mindfulness-based intervention.

Keywords: mindfulness, special needs, middle school, behavior, attention, self-perception, breathing, stress

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Chapter 1 Introduction

Walking into a seventh grade social studies classroom, one glances around and notices the typical setting: students in table groups discussing ancient Rome while the teacher circulates. They all appear to be immersed in work, but then one notices a student slouched in his chair, tapping his pencil against his leg with no materials out. As the teacher approaches, she asks him to take out his notebook. He complies, then begins doodling on his notes and attempting to have an off-topic conversation with a student at a different table. It is easy to assume this student is disinterested and choosing not to work. However, this student is stressed because he missed three days of school, is behind in his classes, and, not to mention, has a disability.

According to the U.S. Department of Education (2018), 6.1 million students ages 6 to 21 received special education services for the 2017-2018 school year. Of those students, 3.8 million spent 80% or more of their day within the general education setting. A benefit to the increased amount of time in the general education setting is the opportunity to interact with neurotypical peers. However, this may also mean more difficulty keeping up with grade-level content as a result of their disabilities, which, often times, leads to added stress. According to the American Psychological Association (2014), 31% of teens felt overwhelmed due to stress. Many middle school students, especially those with special needs, typically lack an awareness of strategies necessary to manage stress.

Statement of Purpose

Previous research has shown the positive effects mindfulness-based interventions (MBI) have on students, in regards to their social-emotional regulation. For the purpose of this study, mindfulness will be generally defined as the act of paying attention in an intentional way while focusing on one's breathing. A study by Broderick and Jennings (2012) revealed improvements

in emotional regulation skills and reported stress in students after using a mindfulness program. According to the study, “Adolescents who participated in the program were better able to recognize and label feelings, were less anxious and reactive to difficult thoughts and feelings, and showed a greater array of coping abilities” (Broderick & Jennings, 2012, p. 121). Likewise, a study by Dariotis et al. (2016) of a school-based mindful yoga intervention found students had greater impulse control through reduced negative behavioral reactions and applications of strategies to regain emotional balance.

While there are studies that have examined the effects of mindfulness with students, there is little to no research studies that have examined the effectiveness of an MBI on middle school students with special needs. Previous studies regarding mindfulness with special education students focus on students at the elementary, high school, and college levels (Beauchemin, Hutchins, & Patterson, 2008; Carboni, Roach, & Frederick, 2013; Malow & Austin, 2016; Elias, 2004; McCloskey, 2015; Malboeuf-Hurtubise, Lacourse, Taylor, Joussemet, & Amor, 2016). Therefore, the aim of this study was to examine the effects of a mindfulness-based intervention on middle school students with special needs with three research questions in mind: 1) How does incorporating a mindfulness-based intervention affect the school experience of middle school students with special needs? 2) How does the intervention affect special needs students’ attention and behavior in the general education setting? 3) How do these students’ self-perceptions change in response to the intervention?

Overview of the Research Design

This study employed a convergent mixed-methods approach in order to answer the research questions. Research was conducted at a suburban middle school with over 1200 students in Northern California. Sixty-five percent of the student population receives free or reduced

lunch, and 10% of the student population has special needs (California Department of Education, 2018).

Ten special needs students, grades sixth through eighth, all Latino males with various disabilities, participated in the mindfulness-based intervention. In addition, four general education teachers and one instructional assistant participated. The researcher is a resource teacher at the school site who teaches the student participants and works closely with the teacher participants. The researcher has worked with seven of the student participants for at least two years as both a teacher and case manager to students. Data from students was collected via surveys, focus groups, intervention session observations, journaling, and classroom observations. Data from staff participants was collected by interviews. The study took place over the course of six weeks, fifteen minutes a day, five days a week, inside the researcher's math class. The intervention sessions consisted of five minutes of mindful breathing and ten minutes of discussing and practicing mindful activities and techniques.

Significance of the Study/Research Findings

This study found that a mindfulness-based intervention is particularly effective for students categorized with Other Health Impairments with attention deficits. The four student participants who qualify for special education under Other Health Impairment showed great improvements in their attention and behavior in the general education setting.

Another finding of the study was that the MBI was effective in raising students' self-perceptions. Prior to and following the intervention, students took anonymous surveys that asked them to rate themselves on areas such as how grateful they are for opportunities, how well they focus when doing school work, how often they are able to handle conflicts without fighting, and how encouraging they are to themselves and others. The survey results produced an increase in

several of the areas, including a jump in overall feelings of happiness from 40% pre-intervention to 80% post-intervention, and a rise in feeling grateful for the opportunities they have from 50% most or all of the time to 90%.

Lastly, the study found that students' mindsets prior to the intervention was important in the effectiveness of the MBI. Student participants who showed any growth in their attention and behavior have an overall growth mindset. These students understand that improvements can be made through hard work. While they do engage in negative self-talk, such as "I'm so dumb," and doubt themselves at times, they generally have a positive outlook and are willing to try new things after some encouragement. The three student participants who showed no growth after the intervention have an overall fixed mindset. They tend to have more of a negative outlook and rarely take risks as a result of how they would be perceived by peers.

Significance of the Study/Research Implications

The results of this study are essential for the social-emotional and academic wellbeing of students with special needs. Students with special needs benefit from a mindfulness program in the classroom setting as a means of helping them cope with stress and improve self-perception. Without stress management strategies, special needs students' inattention and negative behaviors can lead to consequences, such as getting sent out of the classroom, which may affect their academic achievement. For instance, Mendelson et al. (2013) states that urban schools that serve disadvantaged communities face certain challenges as compared to schools serving more affluent communities. These challenges include high numbers of students with behavioral problems, high teacher turnover rates, and lower academic performance. Unfortunately, the students and communities that could benefit from mindfulness the most are often the same ones that face the most potential barriers.

However, it's important that a mindfulness program is not just implemented in the special education setting, but also supported in the general education setting. When all teachers and students are using mindfulness, everyone can reap the benefits. A sense of community at the school site is established, along with common language, strategies, and expectations. This also allows for consistent practice, which can lead to the promotion of positive mental health for all.

Chapter 2 Literature Review

Adolescence is a period of major cognitive and physical development. Middle school students face several daily stressors, such as managing school, friends, and fitting in. Students from special populations, such as those with special needs or students of color, experience additional stress resulting from their disabilities, communication barriers, family stress, or peer stress (Cervantes & Cordova, 2011). Mindfulness-based interventions (MBI) have been proven to be successful in reducing stress for all students, and across all settings (Broderick & Jennings, 2012). MBI help students manage stress and regulate their behaviors, which, in turn, helps increase academic success. Mindfulness can be easily implemented into schools with little to no costs by school staff, including classroom teachers. These interventions range from breathing exercises to brain-sensing headbands.

In what follows, three main themes occurring in the academic literature will be discussed. First, the history of mindfulness will be reviewed in order to provide an understanding of what mindfulness is, the science behind it, and how it relates to stress. While mindfulness has deep roots in Buddhism and Hinduism, a focus on modern day mindfulness will be discussed for the purpose of this study. Second, a description of how mindfulness can be easily integrated into the school setting is provided, with an explanation of the various types of interventions commonly used. At the same time, barriers to implementing mindfulness in schools will be explained. Third, the importance of the effects of an MBI on students with special needs will be considered. From the little research that has been done, mindfulness has been shown to assist special needs students with their attention and behavior management.

History of Mindfulness

Mindfulness is defined as “the process by which we pay attention in a particular way: on purpose, in the present moment, and nonjudgmentally” (Malboeuf-Hurtubise, Lacourse, Taylor, Joussemet, & Amor, 2017). In other words, mindfulness is the act of paying attention in an intentional way and without judgement of one’s thoughts. Yoga is one way of practicing mindfulness. Mindfulness can also be achieved through practice of maintaining attention on one’s breathing. During mindfulness breathing, it is typical for one’s thoughts to go astray, but it is important to notice those thoughts, then return the focus to the breaths. This is where the nonjudgmental aspect comes into play.

Jon Kabat-Zinn, a professor and creator of the Stress Reduction Clinic and Center for Mindfulness in Medicine who studied mindfulness under Buddhist teachers, was very influential in bringing mindfulness to the West in the 1970s and integrating it with Western science through his Mindfulness-Based Stress Reduction program. Mindfulness was initially developed to assist in improving the quality of life in patients suffering from chronic illnesses. It was said to improve the patients’ feelings of anger, anxiety, depression, and even physical symptoms (Malboeuf-Hurtubise, et al., 2017).

Components of mindfulness. Mindfulness is used as a mean to calm one’s body. There are four components of mindfulness that help provide a calmer state: mindfulness of the body, mindfulness of feelings, mindfulness of the mind, and mindfulness of one’s self (Martinez & Zhao, 2018). First, mindfulness of the body is achieved through focus on one’s breath and the feeling as it enters and exits the body. Movement of the body, such as with tai chi, is another way of achieving a calmer state through deep breathing and slow, focused movements. Next, mindfulness of feelings is the act of observing and acknowledging one’s emotions, whether they

are positive or negative, without judgement, and realizing that emotions are just emotions and do not define one's self. Third, mindfulness of the mind refers to the awareness of one's mental state, such as being restless or sleepy. Like with mindfulness of feelings, one should acknowledge the mental state without judgement and realize that mental states come and go. Lastly, mindfulness of one's self is a combination of the previous three components, allowing one to recognize and face all thoughts and emotions without judgement in order to help one accept one's self (Martinez & Zhao, 2018).

Adolescent brain development. The existing literature shows that mindfulness has a scientific background with clear benefits for stress reduction. During adolescence, the brain development that takes place involves changes at the site of the brain where executive functioning occurs (Broderick & Jennings, 2012). Executive functions are higher-order cognitive and socioemotional processes, including working memory, mental flexibility, and self-control. Adolescence is a vulnerable period to a child's emotional and social environment, due to the puberty-related changes in hormones which has an effect on adolescents' judgement, impulse control, and emotional regulation. This results in adolescents processing emotional information differently from children or adults, such as having a more exaggerated reaction to a minor issue (Broderick & Jennings, 2012).

Previous research has indicated that adolescents may experience stress with body image issues, school performance, and social adjustment. Adolescents report higher levels of stress at school related to homework, tests, interactions with teachers, and high levels of expectations. Students of color or those with disabilities face additional stressors, resulting from discrimination, classism, and communication and language barriers (Edwards, Adams, Waldo, Hadfield, & Biegel, 2014). Their stress can reveal itself in anger, poor classroom behavior, or

violent behavior. In addition, difficulties with regulating emotions are a basis for the onset of emotional and behavioral problems in adolescents, which include depression and anxiety (Broderick & Jennings, 2012). According to the U.S. Surgeon General's report, "one out of five children and adolescents in the United States suffers from significant social, emotional, and behavioral problems that place them at risk for school failure" (as cited in Broderick & Jennings, 2012, p. 112). Although adolescents face stressors in and out of school, mindfulness can help alleviate the stress.

Emotional regulation, stress, and mindfulness. Emotional regulation is the ability to effectively manage and respond to an emotional experience. Positive emotional regulation abilities are found to lead to adaptive functioning and positive mental health. Those with emotional regulation difficulties are found to have trouble processing and expressing emotions positively (Malboeuf-Hurtubise, et al., 2017). Mindfulness practice involves intentionally paying attention, which strengthens conscious control and tolerance of experiences as they arise.

In addition to emotional regulation, those who experience stress can also benefit from the use of mindfulness. Martinez & Zhao (2018) define stress as "a physiological response to the perception of loss of control resulting from an adverse situation or person" (p. 2). Long term practice of mindfulness has been associated with greater awareness and acceptance of emotions, along with less sensitivity to aggressive emotional stimuli.

Mindfulness Programs in Schools

Although mindfulness-based interventions were initially developed to assist patients with chronic illnesses, research has shown that mindfulness can be just as easily adapted to assist students manage stress and behavior, and improve academic performance. Mindfulness offers possible benefits to education within various settings, but is most crucial for schools that are

lacking in resources due to the high levels of chronic stress among students, as well as teachers. Some of these potential benefits include improved functioning and academic performance, decrease in suspensions, and an increase in attendance (Malow & Austin, 2016). Mindfulness also allows for community partnerships to form. For example, Mendelson et al. (2013) found that partnerships between schools and community mindfulness practitioners in order to bring mindfulness into schools is beneficial in that cultural gaps between students, school administrators, and community based-intervention developers are bridged through linking the diverse perspectives. The research done by Mendelson et al. (2013) created a partnership between Johns Hopkins Bloomberg School of Public Health, the Holistic Life Foundation (HLF), and Pennsylvania State University in which all three partners created and implemented a mindfulness-based intervention (MBI) at Baltimore City Schools. They found that, after this partnership, communication within schools improved, relationships formed, and student engagement increased.

Implementing mindfulness. Findings from research on the implementation of mindfulness in schools has shown that mindfulness can be easily implemented into a school with effectiveness in reducing stress and increasing emotional regulation. Some schools have adopted a mindfulness curriculum in order to improve school climate and educational outcomes for all students. These schools have had professional development for their teachers in order to lead the MBI, or have school counselors leading the interventions. While a school-wide program would be ideal to ensure consistency across the school and reach all students, it is not necessary in order for students to reap the benefits. An MBI can be implemented in a single classroom by the classroom teacher and does not necessarily require the teacher to complete any formal training (Malow & Austin, 2016). A few minutes of intentional breathing exercises allow students to

benefit from mindfulness. The flexibility of mindfulness allows anyone, of any level, anywhere to practice.

Barriers to implementation. At the same time, there are possible barriers to implementing mindfulness in an educational setting. One possible barrier to implementing an MBI is the fiscal restraints of bringing in an outside certified trainer, along with the curriculum. Budget restraints may interfere with a school-wide implementation of a mindfulness curriculum. A second potential barrier to implementing an MBI could be the person who is teaching the curriculum. It is possible that when an MBI intervention is delivered by someone other than an adult students are familiar and comfortable with, such as the classroom teacher, students may not be as receptive and, therefore, unmotivated to participate. A third possible barrier could be the location of the school looking to implement an MBI. In a study by Dariotis et al. (2016), middle school students from urban low-income communities reported greater impulse control after a 16-week mindful yoga intervention. Students were able to identify their emotions, associate stressful triggers, and use emotional regulation skills learned to promote positive outcomes.

Types of intervention. In spite of the potential barriers to implementing an MBI in schools, there are several types of interventions that come at little to no cost. One type of intervention is breath awareness. With breath awareness, one focuses on either the abdomen or the tip of the nose while inhaling and exhaling. In addition to focusing on the breath as it travels, one counts breaths in sets, with each inhale and exhale combination as one breath. This counting helps to focus on the breathing. A second type of intervention is awareness of thoughts, feelings, and sensations. During this time, thoughts, feelings, and sensations are labeled as such as they cross one's mind. For example, if one feels hungry or notices that there is an itch, one would label the feeling or sensation, then go back to focusing on breathing. A third intervention is body

sweeps. Body sweeps consists of focusing on different parts of one's body in consecutive order, perhaps beginning with the feet, then legs, abdomen, chest, etc. (Britton et al., 2014). These types of interventions allow classroom teachers to implement them in their classes at no cost within a small time frame. A recommendation, however, would be for teachers to be consistent in implementing the intervention.

Besides the three interventions mentioned above, the Learning to BREATHE (L2B) program, (BREATHE-an acronym for body, reflection, emotions, attention, tenderness, healthy habits, and empowerment) is another intervention that can be implemented in schools. The program was designed by Patricia Broderick and was developed specifically for middle and high school students. L2B focuses on six core themes: “(1) body awareness; (2) understanding and working with thoughts; (3) understanding and working with feelings; (4) integrating awareness of thoughts, feelings, and bodily sensations; (5) reducing harmful self-judgements; and (6) integrating mindful awareness into daily life” (Metz et al., 2013, p. 256). These core themes incorporate the four components of mindfulness. The L2B program also has a home component for students to practice mindfulness outside of the classroom.

Mindfulness and Special Education

Regardless of what intervention is being used or how it is implemented at the school site, a review of the little literature demonstrates that an MBI is beneficial for students with special needs. An individual with a disability is defined by the Americans with Disabilities Act (ADA) as a person who has “a physical or mental impairment that substantially limits one or more of the major life activities of such individual, a record of such an impairment, or being regarded as having such an impairment” (Americans with Disabilities Act, 1990, section 12102). According to the Individuals with Disabilities Education Act (IDEA), for a student to be considered special

needs, their school performance (academic or social/emotional) must be negatively affected by one of the following thirteen conditions: (1) specific learning disability; (2) other health impairment; (3) Autism spectrum disorder; (4) emotional disturbance; (5) speech or language impairment; (6) visual impairment; (7) deafness; (8) hearing impairment; (9) deaf-blindness; (10) orthopedic impairment; (11) intellectual disability; (12) traumatic brain injury; or (13) multiple disabilities (Individuals with Disabilities Education Act, 2004). Students with special needs face many challenges in their day-to-day lives, particularly with social-emotional regulation and academic performance. Mindfulness training is designed to reduce stress, while promoting skills for interpersonal relationships and academic achievement.

Social-emotional regulation. Elias (2004) states there are thirteen skills involved in social-emotional learning, which include recognizing emotions in self and others; problem solving and decision making; approaching others and building positive relationships; and help-seeking and help-giving. Students with special needs commonly have difficulty with their social-emotional regulation, particularly students with a specific learning disability, Autism, emotional disturbance, and/or other health impairment (Beauchemin, Hutchins, & Patterson, 2008). According to research by Carboni, Roach, & Frederick (2013), more than 50% of children diagnosed with attention deficit/hyperactivity disorder (ADHD) have experienced social difficulties. Students with special needs struggle with social behavior, social relationships, peer status, and classroom behavior. Negative classroom behavior, such as making inappropriate noises, being out of their seat, and blurting out, is a central contributor to lower levels of achievement. Although these students may be vocal more frequently than their typical peers (students without special needs), these students also tend to listen and respond to peers less, which can lead to unbalanced social interactions (Carboni et al., 2013).

Because students with special needs may grapple with social-emotional regulation, they tend to not be accepted by their peers and demonstrate deficits in how they interact with peers and adults. They also have difficulty reading nonverbal and other social cues. Of course, the degree to which students with special needs exhibit these difficulties, and the types of social-emotional difficulties, depends on the disability of each student.

In spite of the social-emotional difficulties students with special needs encounter, mindfulness may enhance students' social skills (Beauchemin et al., 2008). A study by Rani & Rao (1996) assessed a group of 19 special education students who practiced mindfulness regularly as part of their school curriculum. Their findings indicated that these students exhibited greater attention regulation capacity than the students who did not practice mindfulness regularly (as cited in Carboni et al., 2013). Schonert-Reichl et al. (2015) also found similar results. In their study of enhancing cognitive and social-emotional regulation through the MindUp program, they discovered that the MBI that was practiced three times per day for twelve weeks by 99 fourth and fifth grade students was critical in increasing inhibitory control in special needs students. The increase in inhibitory control led to improved emotional control and decreased aggression versus students who did not participate in the intervention. Therefore, the use of mindfulness not only assisted students with improving their executive functioning, it also helped with students' behavior within the classroom.

Academic. In addition to aiding students with special needs' social-emotional regulation, mindfulness can also improve students' academic performance. When students are challenged with social-emotional regulation, their academic performance is hindered. As mentioned previously, students may display inappropriate classroom behaviors, such as blurting out. When this occurs, students often times receive consequences (e.g. office referrals) which result in loss

of instruction. The lost instructional time intensifies achievement gaps and may reinforce the exhibited negative behavior (Martinez & Zhao, 2018). However, when mindfulness is integrated into the classroom setting and practiced regularly, social-emotional regulation can be improved, which in turn contributes to academic improvements. On the other hand, when students, especially those in the upper grades, with special needs, and/or students of color, experience stress as a results of academic expectations their academic performance may decline, which then results in more academic stress. It is an unfortunate cycle that will repeat itself unless students are given the tools and strategies necessary to manage stress (Beauchemin et al., 2008).

Consequently, research by McCloskey (2015) found that the benefits of mindfulness on increasing executive functioning skills had a direct correlation to higher measures of academic success. Practicing mindfulness enhances working memory capacity. This allows students to more skillfully retain information by clearing up space in short- and long-term memory stores, which is vital for students with special needs who may already suffer from attention deficits. In a study by Docksai (2013), college students who participated in a mindfulness intervention scored 16% higher on a Graduate Records Examination between their first and second attempts than students who did not receive the intervention (as cited by McCloskey, 2015).

Conclusion

Mindfulness has had a place in Western science for decades and has been proven to increase the emotional well-being of those who practice, especially for adolescents who are going through puberty. In schools mindfulness as an intervention is beneficial for improving students' stress levels, social-emotional regulation, and academic performance. Implementing mindfulness in schools can be done easily through consistent breathing sessions or through a curriculum. However, schools do face potential barriers to implementation via financial restraints

or low levels of student engagement if an MBI is not taught by someone with whom students are familiar. Moreover, students with special needs can benefit greatly from the use of mindfulness strategies because strategies have been shown to help students with their social difficulties and emotional regulation, while also improving academic performance.

A great strength of the existing literature is that the studies include a different type of MBI, ranging from easily implemented interventions taught by single classroom teachers, to school-wide curriculums taught by professionals, to interventions that require technology, like a brain-sensing headband. Equally important research has been conducted in countries worldwide that have come to the same conclusion, mindfulness is effective in lower student stress levels and raising student attention.

An apparent weakness of these studies, however, is the small sample sizes that are used to answer the research questions. The majority of studies have used sample sizes extending between a few classrooms in a single school site or two to three school sites in a single city. Another shortcoming present in the literature is the lack of research done in the middle school setting. There is plenty of research showing how mindfulness can be beneficial to students in the elementary and high school settings. Nevertheless, there is very little research showing how mindfulness affects middle school students, who are going through a considerable amount of brain development and bodily changes. In addition to the lack of research in the middle school setting, the majority of research participants are Caucasian students and those who are neurologically typical. Unfortunately, there is limited research showing how students of color and/or students with special needs benefit from a mindfulness-based intervention.

Therefore, the purpose of this study is to examine the effects of an MBI on middle school students with special needs. The specific focus will be on student attention and behavior within their general education classroom, in addition to their self-perception.

Chapter 3 Methods

This study examined the effects of a mindfulness-based intervention (MBI) on middle school students with special needs. In particular, this study explored the effects of an MBI on students' behavior and attention within the general education setting, as well as students' self-perception. Specifically, the study sought to answer the following central question and sub-questions: (1) How does incorporating a mindfulness-based intervention affect the school experience of middle school students with special needs? (2) How does the mindfulness-based intervention affect students with special needs' behaviors and attention in the general education setting? (3) How do the self-perceptions of these students change in response to the mindfulness-based intervention?

Description and Rationale for Research Approach

This study used a convergent mixed-methods approach with an emphasis on a constructivist worldview. A constructivist worldview centers on the idea that people seek to understand and create meaning of their own experiences, to interpret their experiences, and to focus on human interaction. In this approach, the researcher's role is to examine and interpret the meanings that others have constructed based on the social world in which they live (Creswell, 2018). Previous research on the effects of a mindfulness-based intervention (MBI) on students with special needs has found MBI to be effective with increasing attention and lowering discipline issues. In order to obtain an in-depth understanding of the effects of an MBI on middle school students with special needs, the researcher engaged with special needs students and general education teachers on their perspectives of an MBI and interpreted the meanings of their experiences.

A convergent mixed-methods approach was chosen for this study in order to obtain an in-depth understanding of students' experiences with an MBI. With this approach, the researcher collects both quantitative and qualitative data simultaneously, analyzes the data separately, and then compares the data to generate findings (Creswell, 2018). A quantitative design uses closed-ended responses, such as those found in surveys. A survey design was used in this research to study how the sample results can be generalized to a broader population of students with special needs. The qualitative aspect of this research design focused on interpretative research, and required the researcher to spend more thorough time with participants (Creswell, 2018). Students' experiences and perspectives were shared through open-ended questions during focus groups, observations, and student journals.

In using a convergent mixed-methods approach with an emphasis on a constructivist worldview to conduct my research on the effectiveness of an MBI on middle school students with special needs, it was hoped to develop a better understanding of the effects of MBI on increasing the attention and decreasing negative behaviors of students. It was also hoped to help students identify strategies to use in order to increase attention and positive behaviors in the classrooms, and improve their self-perception.

Research Design

Research sites. The school in which research was conducted was Hoch Middle School, a suburban middle school serving sixth through eighth grades in the Northern California Bay Area (the school site and participants listed below are referred to through pseudonyms). There are over 1200 students attending this school; 28% are English Language Learners, 65% qualify for free and reduced lunch, 68% identify as Hispanic or Latino, and 10% are students with special needs

(California Department of Education, 2018). Students with special needs receive push-in support or are placed in a resource class with modified curriculum.

Participants. The students involved in this research were sixth through eighth grade students who have been found to be eligible for special education services. The students' disabilities are as follows: one qualifies under Intellectual Disability and Speech and Language Impairment, three under Specific Learning Disability, two under Specific Learning Disability and Speech and Language Impairment, and four under Other Health Impairment. The students included three sixth-graders, six seventh-graders, and one eighth-grader, all male and Latino.

Four general education teachers were specifically recruited from the group of teachers at the middle school site who had students participating in the study. Teachers were selected based on the number of participating students in their classes. Each teacher had at least three of the student participants in their classes. Teacher participants have taught at the site for two to six years. The participating teachers were white females, ranging in age from 25 to 43. Two of the teachers taught social studies, and two taught science. In addition one instructional assistant who has worked at the school for six years and pushes into the general education classes to work with student participants was also recruited.

Sampling procedure. Eleven students with special needs at the research school site in one life skills math special education class for sixth to eighth graders were recruited for participation in intervention sessions and focus groups through a request sent home to obtain parental consent. Ten of the eleven students agreed to participate, and parent consent was obtained for all ten students. Parental consent for student participation was solicited through a phone call home informing parents of a written request sent home with the students. A copy of the letter translated into Spanish was enclosed in its own envelope to ensure confidentiality.

Teacher and staff consent for interviews was solicited in person, based on the students participating in the study.

Methods.

Survey. Student participants were surveyed pre- and post-intervention regarding student perspectives on self, attention, behavior, and motivation. The survey information was collected anonymously through Google Forms. The survey questions were read aloud by the researcher as students completed the survey as a way of clarifying questions. The same questions were used pre- and post-intervention to provide data to answer the research question of how a mindfulness-based intervention affects students' self-perception. For example, question three on the survey asked students to rate how distracted they are while in class, question eight asked students to rate how often they solve a problem without fighting, and question ten asked students how often they are kind to themselves when they are having a hard time (Appendix A).

Focus groups. All student participants joined each focus group that met at the mid-way point and at the end of the intervention in the researcher's classroom during lunch. Students were audio recorded during the focus groups and asked a different question set for each focus group meeting. Questions mid-way through the intervention were used to answer the research question "How does a mindfulness-based intervention affect students' self-perception?" Students were asked about a time when they received an office referral, what stress meant to them, and any positive ways they released stress (Appendix C). Questions asked post-intervention were also used to answer the research question "How does a mindfulness-based intervention affect students' self-perception?" These questions asked students to describe how they now handle stressful events, how they use mindfulness, and their overall feelings of the program (Appendix D).

Intervention sessions. Student participants experienced a Mindfulness-Based Intervention, based on the Learning to BREATHE program by Patricia C. Broderick, which involved helping students learn skills to manage emotions and understand thoughts and feelings. Sessions occurred in 15-minute increments five days a week for six weeks (January 2019 through mid-February 2019). Five minutes of each session were used for mindful breathing and ten minutes were used to discuss and practice one of the five Learning to BREATHE goals (body, reflections, emotions, attention, tenderness, and habits), resulting in one goal being discussed per week.

Journals. Student participants were each given a journal in which they wrote down observations and reflections following intervention sessions. Journals were collected at the end of each week to serve as indicators of the intervention. After each breathing session, students were to reflect on how they felt and what they noticed. During several week's themes, students reflected on various prompts, such as activities students perform mindlessly and those they perform mindfully (Appendix B).

Observations. The data from four in-class observations (two pre- and two post-intervention) in each student participants' selected general education classes were used to verify the accuracy of the emerging themes gathered from the transcribed student focus groups. Each observation contained hand recorded notes following an observation protocol based on the emergent themes (Creswell, 2018).

Interviews. Thirty-minute interviews were conducted with staff participants post-intervention at a time that was convenient for all parties in the teachers' classrooms. Interviews were audio recorded, in addition to notes taken of the interviews. Questions explored how the behavior of student participants had improved and how the student participants had used a

mindfulness strategy in class (Appendix E). These questions were asked to provide data to answer the research question “How does a mindfulness-based intervention affect special education students’ attention and behavior within their general education classes?”

Data Analysis

In this convergent mixed-methods study, data was collected through student surveys, focus groups, intervention sessions, journaling, observations, and teacher interviews at Hoch Middle School. The frequency of behavioral issues were analyzed to determine if the MBI contributed to any changes in behavior and/or attention of student participants in their general education classes, in addition to students’ self-perception. The effectiveness of the MBI on students’ behavior and attention was determined based primarily on staff input and observational data. The effectiveness of the MBI on students’ self-perception was determined based on the results of student surveys. The researcher analyzed the data from pre-intervention to post-intervention.

The qualitative collected data was transcribed, organized and prepared for data analysis through handwritten coding. The coding process involved reading, underlining sections, and assigning a code to each section. Some expected codes were stressors, emotions, and strategies. Codes were grouped on a concept map to create themes and patterns within the data that addressed the research questions.

Validity and Reliability

In this study, qualitative validity was checked by using multiple validity procedures. First, data from multiple sources (post-intervention survey, focus groups, and student journals) were triangulated to justify themes based on several data sources. Second, member checking was used to determine whether student participants felt the themes were accurate. Third, a “rich, thick

description” was used to convey findings (Creswell, 2018). In order to establish reliability in this study, interviews, observations, and focus groups transcripts were double-checked as to ensure no mistakes were made recording data, and data and codes were compared throughout the data analysis.

The researcher has taught at Hoch Middle School for three years as a resource specialist. The staff interviewed for the study were colleagues and general education teachers at the research site. The student participants were students of the researcher’s life skills math class. The researcher has practiced mindfulness with classes in the past. Therefore, there was an existing bias towards the belief that an MBI can help students with special needs manage their behavior and/or attention. The researcher was also in a position of power over the student participants, which could result in biased data. While the researcher was aware of this bias and attempted to analyze the data as objectively as possible, there was a chance that the results showed more positive results.

Chapter 4 Findings

Middle school is a time in students' lives where major cognitive and physical developments are occurring. In addition to this change, they are experiencing stress on a daily basis, in and out of the classroom. Students with special needs face additional stressors in comparison to their neurotypical peers as a result of their disabilities. They lack the strategies necessary to manage stress, and thus, their attention, behavior, self-perception, and, ultimately, their academic performance are negatively affected.

The findings from this research indicate the overall effectiveness of a mindfulness-based intervention (MBI) for students with special needs. Three major themes emerged from the data. The first theme is that all student participants' self-perception improved over the course of the intervention. The second theme is that the mindfulness-based intervention was highly effective in improving the attention and behavior within the general education setting of student participants with attention deficits, those who qualify for special education services under the category Other Health Impairment (OHI). The third theme is that the MBI had little to no effect in improving the attention and behavior of student participants who have a learning or intellectual disability, or for students who were coping with traumatic circumstances at home.

Improvements in Students' Self-Perception

Mindfulness includes four components: mindfulness of the body, mindfulness of feelings, mindfulness of the mind, and mindfulness of one's self (Martinez & Zhao, 2018). Whereas mindfulness of the body and mind are associated with improving attention and behavior, mindfulness of feelings and one's self is associated with improving self-perception. Mindfulness of feelings and one's self allow one to face thoughts and emotions with compassion and without judgement. Often, students with special needs feel the stigma of being in "special" classes and

feel despondent about being perceived as different. This negatively affects their self-perception. As seventh grader Jake shared, “Sometimes I feel bad cause my other friends ask why I don’t have regular English. I think it’s cause I’m not smart or something.” Unfortunately, his sentiments were not unique.

Students had the opportunity to reflect on ways they take care of themselves, through their thoughts, actions, and feelings. During week five of the intervention when discussing the theme of tenderness, students had a moment to think about all the ways they practice being kind and mean to themselves. The researcher asked students if they would rather brainstorm ways they are kind to themselves first or ways they are mean to themselves first. Almost all students excitedly yelled out, “Ways we’re mean!” The researcher then gave students a moment to jot down all the ways they are unkind to themselves, including thoughts, actions, and feelings, then had them share ideas with their table group. Table groups then took turns reading responses while the researcher wrote feedback on the board. Some remarks included, “I suck at science,” “I’m not smart enough,” “Hitting myself,” “Eating chips for breakfast,” and “I get jealous of my friends.” This same procedure was done for ways students are kind to themselves. This, however, did not come as easy to them, so the researcher gave some examples. Once examples were given, there was a collective, “Oh!” among students and great ideas came flowing from the group. Student responses were, “I’m really good at football,” “I make people laugh,” “I’m good at learning,” “I’ll get it next time,” “Keep trying,” “I go to bed early,” “I drink a lot of water,” “I have great friends,” and “I love my family.” Ronaldo, an eighth-grade student, shared with the group that he liked doing this activity because, “A lot of times I only think about what I’m doing wrong. Now, I know I do a lot of nice things for me. I gotta remember to do that more. We all do.”

To illustrate, students participated in anonymous surveys pre- and post-intervention that asked them to rate themselves in areas that included gratitude, overall feelings, distractibility level, ability to calm themselves, self-motivation, conflict resolution, respect, and encouragement towards themselves and others (Appendix A). When asked to rate themselves on how thankful they are for the opportunities they have, 90% chose most/all of the time post-intervention, which was an improvement from the 50% most/all of the time pre-intervention results (Figure 1). When asked how they usually feel, there was a jump in the percentage of students who chose happy/very happy, from 40% pre-intervention to 80% post-intervention (Figure 2).

Figure 1 Survey question #1

Figure 2 Survey question #2

In addition, when asked on the pre- and post-intervention surveys to rate their attention while in class, there was an increase from 20% focused/very focused to 60% focused/very focused (Figure 3). While six students reported an increase in their ability to focus in class, this did not necessarily mirror the teachers' and researcher's observations. Since the surveys were anonymous, there was no way to identify which students reported this increase. Nonetheless, student perceptions regarding their attention improved. Also, students' self-perception on whether they are able to solve problems with others without fighting slightly increased from 70% some/most of the time to 90% some/most of the time (Figure 4). This was mirrored in the researcher's observations. For instance, during week three of the intervention when discussing the theme of emotions, Kevin accidentally took Giovanni's journal. Previous to the intervention, Kevin would have yelled at Giovanni, possibly calling him a name, and snatched the journal away from him. However, Kevin took a deep breath and asked Giovanni if he could give it back to him.

Figure 3 Survey question #3

Figure 4 Survey question #7

Likewise, students were asked to rate themselves on how respectful they are to others at school. 60% of students chose most/all of the time pre-intervention, while 80% chose the same

rating post-intervention (Figure 5). When asked if they are encouraging to others when others are having a difficult time, 70% chose most/all of the time, a jump from 20% pre-intervention (Figure 6). Because two aspects of mindfulness are mindfulness of feelings and of one's self, mindfulness practice is also a sort of self-empathy practice, which can help one's ability to understand others.

Figure 5 Survey question #8

Figure 6 Survey question #10

When others are having a hard time, I'm kind and encouraging to them...

Students with Attention Deficits

Students with Attention Deficit Hyperactivity Disorder (ADHD) oftentimes have a difficult time paying attention and controlling impulsive behaviors, which are both executive functioning skills. Self-awareness, inhibition, working memory (both verbal and non-verbal), emotional self-regulation, self-motivation, and planning and problem solving all fall under executive functioning (Carboni et al., 2013; McCloskey, 2015). These behavioral difficulties can ensue in poor social, behavioral, and academic skills. Four of the ten participating students have ADHD and qualify for special education services under OHI. According to the Individuals with Disabilities Education Act, a student qualifies under OHI if:

...they have limited strength, vitality, or alertness, including a heightened alertness to environmental stimuli, that results in limited alertness with respect to the educational environment that - i. is due to chronic or acute health problems such as ... attention

deficit disorder or attention deficit hyperactivity disorder ... and i.i. adversely affects a child's educational performance. [§300.8(c) (9)].

Sustained attention is a challenge for these student participants. Data collected during two observations prior to the intervention showed students fidgeting with pencils 9 times, not having their materials out 21 times, having off-topic conversations with peers 16 times, and sitting with their heads down on their desks 12 times (Figure 7). On the contrary, during two observations after the MBI, a 52% reduction in off-task behaviors was noted. In addition, students were noted having materials out, tracking the speaker, actively participating in group work, taking notes, and general on-task behaviors.

Figure 7 Number of off-task behaviors for OHI students

As an illustration of this change, upon entering a seventh-grade classroom for a pre-intervention observation, the researcher noticed Abner seated towards the middle of the classroom fidgeting with his sweatshirt string and looking everywhere but his worksheet. The class was going over the warm-up and fixing answers. Abner had nothing written down on his

sheet and did not begin writing until he was approached by his teacher. On the other hand, during a post-intervention observation of Abner in the same class, he was participating in the writing assignment. While he did doodle for a moment, he went back to work.

These student participants' teacher participants mentioned the growth in attention and behavior from when the intervention began. As one participating teacher stated, "I've seen him taking deep breaths ... before he readies himself to go ahead and restart something." The four students also noticed an increase in their attention and behavior. Devin, a seventh grader, shared that he is more aware of when he is not paying attention and will do a few chair stretches and mindful breathing to help refocus.

Moreover, teachers reported that these students were taking their time and thinking about what was going on with their work after the intervention. One teacher participant, Ms. Doble, expressed, "When he takes quizzes, I've noticed he's taking his time more. He's not rushing through it, which is a good sign because he's actually thinking about stuff." Similarly, another teacher participant, Ms. Lahdlon, communicated how a student's energy level has decreased. "In the beginning of the year, he was more spastic and talking more to peers around him. I can arguably say that that has improved."

The intervention did not eliminate all negative classroom behavior for these students. However, it has tremendously improved the negative behaviors that were seen in the general education classes prior to the intervention. According to Ms. Doble, "At the beginning of the year, Devin had oppositional defiance, kind of. I'd say around January it just kind of went away. He started making more of an effort in class, so his behavior and attitude has really improved." This sentiment was similar amongst the participating teachers of students under OHI. In reference to another student's efforts, Ms. Romeo, a participating teacher shared, "Very

beginning of the year, Wolf was putting in effort, and then kind of stopped by the end of the semester. I would say he's back to putting in pretty consistent effort at least every day, maybe every other day."

In addition to teacher input, these students have noticed a difference in their behaviors. During one of the focus groups, students were asked about a time they got a referral for negative behavior and what getting a referral meant to them. Abner shared, "I mean, now it does [matter], but last semester it didn't. Before I didn't care. Now I do cause, like, I'm trying to change my attitude." Students were able to identify strategies they use when they are stressed, such as taking a walk or a break, and doodling. Sergio, a seventh grader, explained that he can now, "Take deep breaths. And if you have a squishy ball, squish it, right? And if you have putty, you can, like, play with it." Devin had a great suggestion for helping others learn to use breathing techniques, "... wouldn't it be better if someone saw [a student taking a deep breath] so they can see that if you're mad, it [breathing] can help them, too?"

Students with a Learning or Intellectual Disability

Despite significantly improving the attention and behavior of students with ADHD, little to no improvements for the remaining student participants were observed. These students qualify for special education services under Specific Learning Disability (SLD) or Intellectual Disability (ID).

According to the Individuals with Disabilities Education Act (IDEA), a student qualifies under SLD if:

...one or more of the basic psychological processes involved in understanding or in using language, spoken or written, that may manifest itself in the imperfect ability to listen, think, speak, read, write, spell, or to do mathematical calculations ... [§300.8(c)(10)]

Students who qualify under SLD show a discrepancy between their intellectual ability (IQ) and academic performance, and generally have gaps in their understanding of basic skills. IDEA defines a student who qualifies under ID as having, “Significantly subaverage general intellectual functioning, existing concurrently with deficits in adaptive behavior and manifested during the developmental period, that adversely affects a child’s educational performance” [§300.8(c)(6)]. Students who qualify under ID have significant limitations in both intellectual functioning and adaptive behavior. These adaptive behaviors include everyday social and practical life skills.

While students with a specific learning disability or intellectual disability may lack executive functioning skills, the mindfulness-based intervention was not as successful for them. Pre- and post-observation data showed that the MBI had some positive effect on three of these six student participants’ attention and behavior, and no effect on the other three students. Whereas the students who are OHI decreased their off-task behaviors by 52% after the intervention, the off-task behaviors of the other participating students only decreased by 2%.

After the intervention, the three students who achieved some improvement in behavior were a bit more prepared for class (they had some materials out), would glance up at the speaker every few minutes but would return their attention to their doodles, and would engage in small group discussions. In comparison, during the pre-intervention observations, these three students were unprepared for class, as they did not have materials out, were not paying attention to the speaker, not actively participating, talking to peers, and blurting out (Figure 8). These students were able to decrease their off-task behaviors by 29%.

Figure 8 Number of off-task behaviors for SLD or ID students

Similarly to the pre-observation for Abner, Ralph was found to be fidgeting with his eraser cap and leaning back in his chair while the rest of the class was annotating a short paragraph. His teacher approached him and asked him if he understood the directions. Ralph responded that he did not, so she explained them to him. Once she walked away, he began drawing on his paper and bouncing his leg up and down. During a post-observation, Ralph had his materials out and was working, but randomly called out, “Bill Nye the science guy.” This caused other students to laugh, which prompted his teacher to redirect him. He apologized and went back to working.

According to their teachers, these students were able to be redirected by teachers when off-task or talking to peers. Ms. Aryn, a general education teacher noted, “I feel like when I redirect them, it’s a little bit easier.” When beginning the Learning to BREATHE intervention, these students were clearly uncomfortable with breathing in silence, as was observed by their fidgeting and giggling. However, by the end of the intervention, students took their breathing seriously. When asked what parts of the program students would want to continue, Jake shared,

“Laying down and breathing. It, like, calms my body. Like, when I actually do it instead of fooling around.”

The remaining three students who qualify under SLD or ID showed no improvement at all with their attention or behavior. During classroom observations, both pre- and post-intervention, students were noted with not having materials out, heads down on their desks, not attempting to participate in group work, and tapping fingers or pencils on desks. Even after the teachers tried redirecting them, no changes were made. The number of off-task behaviors for these students actually increased by 13%. During the Learning to BREATHE intervention while others were engaged in breathing, students were noted looking around the room, crawling towards other students, whispering to one another, or fidgeting with whatever objects were nearby, such as pencils, chairs, clothing. Ms. Tomlainh, an instructional aide participant, who pushes into several of the student participants’ general education classes shared that Musel, a seventh grade participant, “...told Ms. Doble he didn’t give a shit the other day... She said she felt he was so upset that he was going to hit her. He scared her... so that would be the opposite of using mindfulness.” Ms. Doble expressed her frustration with a student who will only work with Ms. Tomlainh.

He basically doesn’t want to be noticed. He doesn’t want me helping him at all, so it’s difficult on the days Ms. T isn’t here... He kind of has an attitude that I’m the cop in the classroom. I don’t know why because I’m very hands off with him.

For instance, upon entering an eighth grade classroom for a pre-intervention observation, Ronaldo was observed hitting his hands loudly on the table while his teacher was explaining the assignment. The other students had materials out and backpacks stored in cabinets at the back of the room. Ronaldo, on the contrary, had nothing in front of him and his backpack was on the

floor next to his chair. Ten minutes later, he took his binder, notebook, and pencil out and began playing with his pencil. “Flip to page fifty-one in your notebooks,” directed the teacher as she also wrote the page number on the board. However, Ronaldo continued to sit with his notebook closed. The teacher then instructed him to open it up, which he did hesitantly. Furthermore, during a post-intervention observation of Ronaldo in the same class, it was observed that he was pounding his hand on the table while holding his pencil and sitting back in his chair while his tablemates were engaged in the group activity. When asked by a classmate if he was going to help out, Ronaldo expressed, “Why? You guys are already doing it. I’ll just copy off you guys,” then put his head down on the table.

The three students who did not have success with the mindfulness intervention also have some underlying emotional issues they are dealing with that may possibly have prevented them from fully putting in effort and increasing their off-task behaviors. These students have faced trauma in the past and mindfulness helps one to become aware of one’s thoughts and emotions. Having that time to become aware of their emotions may have caused them to relive some of that trauma, withdraw from the intervention and their surroundings, and act out in their general education classes.

Conclusion

This research study had three questions it sought to answer: 1) How does incorporating a mindfulness-based intervention affect the school experience of middle school students with special needs? 2) How does the intervention affect special needs students’ attention and behavior in the general education setting? 3) How do these students’ self-perceptions change in response to the intervention? In answering research question number one, overall, the mindfulness-based intervention had a positive effect on students with special needs. Students ended the MBI with a

toolbox of strategies to help them manage their stress. As Wolf stated when discussing how he uses mindfulness, “Like, when yesterday I died by a default and was gonna rage, I breathed instead. It helped.” In answering question number two, while most students showed improvement with their attention and behavior in the general education setting, students with attention deficits showed the greatest growth. This is due to mindfulness as a way of practicing paying attention. Consistent mindfulness practice, even if just five minutes daily, strengthens the executive functioning muscles, in the same way that holding a 30-second plank daily helps to strengthen the core. For research question number three, all student participants, regardless of disability, exhibited a rise in their self-perception due to the continuous practice of focusing on their feelings and self. Likewise, Ms. Aryn noted,

“I feel like the anxiety the kids would have in the room decreased ... I feel like they inherently know the strategies and can identify when they need to use them. I mean, they’ve even told me to breathe before when I’ve been agitated ... they were right. I feel like they have a little more control ... just the anxiety overall has reduced.”

During the post-intervention focus group, when asked if there was any aspect of the MBI students wanted to continue, six of the ten students expressed they would like to continue mindful breathing. Once the six weeks of MBI concluded, the students asked the researcher if they would continue to breathe in class. “Is that something you all want to continue to do?” asked the researcher. All but two students shouted, “Yes!” Hence, mindfulness minute begins each class period, and eight of the ten student participants continue to engage in the practice.

Chapter 5 Discussion

This research study aimed to examine how a mindfulness-based intervention (MBI) affects the attention, behavior, and self-perception of middle school students with special needs. The data showed that the MBI greatly improved the attention and behavior of students who qualify for special education under the category of Other Health Impairment (OHI). Although inattention and behavioral issues continue to exist, these students were able to decrease the number of off-task behaviors by 41%. While the MBI had a great effect on students under OHI, the students who qualify for special education under the categories of Specific Learning Disability (SLD) or Intellectual Disability (ID) showed little to no improvement in their attention or behavior; their inattention and behavior slightly increased over the course of the intervention. However, improvements in all student participants' self-perception was evident.

Compared to findings in the literature review, this research supported the overall effectiveness of a mindfulness-based intervention for students with special needs (Beauchemin, Hutchins, & Patterson, 2008; Carboni, Roach, & Frederick, 2013; Elias, 2004; McCloskey, 2015), in terms of improving students' attention, behavior, and self-perception. Of the ten participating students, seven students displayed some level of improvement in their attention and behavior in their general education classes, based on observations and teacher feedback. In addition, students' self-perceptions improved by the end of the intervention. This was also observed in a prior study regarding the positive affect of students with learning disabilities (Malboeuf-Hurtubise, et al., 2017). Students reported having a more positive overall mood, higher ability to solve problems without fighting, and more attention with schoolwork and listening to others.

This study also found that students' willingness to participate in the intervention depends on the relationship with the adult leading the mindfulness program (Britton, et al., 2014). As the classroom teacher, the participating students and researcher are familiar with one another and have built a relationship of trust and respect. The students were willing to participate in the intervention because, as Devin stated to the class, "Ms. Castillo does a lot to help us with our school stuff, so I think we should help her with her school stuff, too." Students had a genuine interest in learning about how "just breathing" could possibly help them and how they could help the researcher "get a good grade" on my project. Because of this enthusiasm, most students wanted to put their full effort into the program and do well.

Similar to previous research, this study found that mindfulness strategies learned during the intervention were used by students in and out of the classroom setting to decrease stress (Dariotis, et al., 2016; Martinez & Zhao, 2018). During the focus groups, several students gave examples of when and how they use mindfulness strategies. For instance, Ralph expressed how he did mindful breathing prior to taking a test in class and how it helped him feel focused and ready for the assessment. Others mentioned stretching in their seats, jotting down a word or two on how they feel, or taking a moment to doodle in an attempt to clear their minds.

Implications for the Literature

Many of the findings regarding the overall effectiveness of an MBI have been recognized throughout prior research. However, this study also rendered findings that were not in previous research and introduce insights in terms of the success of an MBI on middle school students with special needs. One of these insights is the importance of students' mindset for the program's effectiveness. According to Carol Dweck, a leading researcher in the field of motivation, students with a growth mindset include, "Individuals who believe their talents can be developed

(through hard work, good strategies, and input from others)” and those with a fixed mindset include, “...those who believe their talents are innate gifts” (Dweck, 2016). The student participants who showed any improvement in their attention and behavior had a growth mindset. These students were aware that they can get better at things by working hard. These students were also willing to try the program, despite how awkward or silly it made them feel in the beginning, and found enjoyment in practicing mindfulness. The students who had a fixed mindset engaged in more negative self-talk (“I suck at this”, “I can’t do this”) and were more worried about how they were perceived by their peers during the intervention. These students showed no improvement in their attention and behavior.

Another insight was that students’ willingness to participate in the intervention had a correlation to their homelife. Of the ten student participants, three students have emotional issues, including trauma, and receive counseling. These are the three students who also have fixed mindsets and showed no improvement post-intervention. Mindfulness is the act of paying attention to one’s breathing and thoughts. Mindfulness is a time to reflect on one’s emotions. For students with emotional issues, mindfulness may be less of a means to calm themselves, and more of a channel to act out as a result of the quietness and focus required by mindfulness, which may trigger past feelings, thoughts, and experiences.

Implications for Practice and Policy

While there is no doubt that teachers have many demands put onto them and finding time to do “one more thing” can be added stress, research shows that incorporating mindfulness into classrooms is effective for improving student attention, behavior, and self-perception, which could lead to increased academic performance. Mindfulness can be implemented into classrooms while taking up as little as one minute of instructional time. Taking a mindful minute to focus on

one's breathing can be beneficial for students to ground themselves. One teacher participant noted that at the beginning of class, Devin would not have his work out because he was thinking about what he had to do. "I give him some time because he likes to come in and kind of sit there for a minute and I realize that he's just kind of adjusting. It helps him get his work done."

Likewise, consistency with mindfulness is a key to success. It is important for mindfulness to be practiced daily in order for students to reap the benefits. Just like anything else, practice makes progress. The more students practice mindfulness, the more comfortable they will become with the silence and the more confident they will become with their ability to manage stress.

The question of resources may arise when discussing the implementation of mindfulness in schools. Mindfulness in schools is not one size fits all. There are programs that are aimed towards younger students and others that are designed for older students. However, if one does an online search, one will find there are plenty of resources to fit one's school. Many of these resources are available at little to no cost. There are websites designed to help educators practice mindfulness with their students that only require one to signup, social media accounts dedicated to mindfulness in schools, and mindfulness recordings that lead the students in practice. Additionally, there are mindfulness curriculums that schools can purchase that include teacher training.

Implementing mindfulness in schools is also a great way to build community partnerships with businesses and/or community members in the health industry to ensure all students have access to mental health supports. Students, especially those of color and those with special needs, can benefit from receiving strategies that promote positive mental health. Creating partnerships within the community provides students with an avenue to reach out for help, additional support, and a sense of connection with those around them.

Limitations of the Study and Directions for Future Research

The various limitations to this study necessitate caution when generalizing the results. First, this research focused on students with special needs in one specific special education class. Had the study consisted of students in all of the researcher's special education classes, data from students who qualify under additional categories, including Autism and Emotional Disturbance, would have aided in determining the effectiveness of the MBI. Second, the teacher participants consisted of only a few general education teachers and lacked the perspective of special education teachers. The small sample of general education teachers may have affected the data due to student participants possibly using mindfulness strategies in some classes over others depending on how stressful the students perceive their classes. Because of the smaller class sizes, student participants tend to feel more comfortable in their special education classes. This limited the feedback from special education teachers on how effective the MBI was on students' attention and behavior in their classes. Classroom observations were not conducted in the special education classes, therefore the number of off-task behaviors pre- and post-intervention is missing. Perhaps data collection and observations of a more diverse population of students and teachers would have derived varying results. Third, the MBI took place over the course of six weeks. By extending the duration of the study, a greater examination of the effectiveness of a mindfulness-based intervention may have been noted. Lastly, the researcher was the math teacher for the student participants. This created a limitation due to the dual role as teacher and researcher. During focus groups, students, at times, answered questions based on what they thought the researcher wanted to hear. The researcher had to remind students that it was Okay to tell their truths.

To gain a more complete understanding of the effectiveness of a mindfulness-based intervention on middle school students with special needs, future research should explore a larger and more diverse sample of participants to include students who qualify for special education services under various categories, female students, and special education teachers. Because future research should include students with varying disabilities, it would be beneficial to modify the intervention, based on the disability, to meet each students' needs. Furthermore, future research should explore the effectiveness of a mindfulness program for teachers to examine how mindfulness affects teacher participants' teaching, their relationships with students, and whether teachers' mindfulness practice affects their students' attention and behavior.

Mindfulness practice is proven to be beneficial for all, in particular students. Mindfulness in the classroom has the ability to improve student behavior and student self-perception, which in turn, can improve student academic achievement. It can also provide students with stress management tools they can carry with them in all settings to promote positive mental health.

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Appendix A: Survey Questions

1. I'm thankful for the opportunities I have... _ none of the time _ some of the time _ most of the time _ all of the time	2. I usually feel... _ very unhappy _ unhappy _ happy _ very happy
3. While in class, I'm usually... _ easily distracted _ kind of distracted _ focused _ very focused	4. I can calm myself in challenging situations... _ none of the time _ some of the time _ most of the time _ all of the time
5. I can motivate myself to learn in school... _ none of the time _ some of the time _ most of the time _ all of the time	6. When I'm bored in school, I can make myself more interested... _ none of the time _ some of the time _ most of the time _ all of the time
7. I can solve a problem with others without fighting... _ none of the time _ some of the time _ most of the time _ all of the time	8. I'm respectful to others at school... _ none of the time _ some of the time _ most of the time _ all of the time
9. When I'm having a hard time, I'm kind and encouraging to myself... _ none of the time _ some of the time _ most of the time _ all of the time	10. When others are having a hard time, I'm kind and encouraging to them... _ none of the time _ some of the time _ most of the time _ all of the time
11. What does mindfulness mean?	

Appendix B: Journal Prompts

The following pages are from Patricia C Broderick's *Learning to breathe student workbook: A six-week mindfulness program for adolescents*.

Theme B: My Mindful/Mindless Life

What things (or activities) in your life do you do on automatic pilot (mindlessly)? What are the things you do that fully engage you (mindfully)? Fill in the boxes with as many examples as you can name. You can also write about how you feel when you do things mindfully (with attention) or mindlessly (without attention).

My Mindful Life...

My Mindless Life...

Theme R: Big Event Circles

Story 1

Write your thoughts in the circle below.

Write how you're feeling in the circle below.

Two large, identical dotted circles are arranged side-by-side on a light gray background. Each circle is designed for a student to write their thoughts or feelings inside.

Story 2

Write your thoughts in the circle below.

Write how you're feeling in the circle below.

Two large, identical dotted circles are arranged side-by-side on a light gray background. Each circle is designed for a student to write their thoughts or feelings inside.

R

Theme T: Ways We Take Care of Ourselves

Observations and Reflections:

Thoughts

Actions

Feelings

T

Theme T: Ways We Don't Take Care of Ourselves

Observations and Reflections:

Thoughts

Actions

Feelings

T

Appendix C: Pre-Intervention Focus Group Questions

1. Tell me about a time you got a referral or buddy room reflection.
2. What does it mean to you to get a referral?
3. How does getting a referral have an effect on your learning?
4. What do you think it means to be stressed?
5. What kind of things stress you out?
6. When you're stressed or upset in the classroom, how do you handle it? What do you do?
7. What are examples of positive ways you release your stress?
8. What does mindfulness mean to you?

Appendix D: Post-Intervention Focus Group Questions

1. When you're stressed or upset in the classroom, how do you handle it? What do you do?
2. How have the mindfulness breathing strategies we have learned helped you in your classes?
3. Give me an example of a time when you used mindfulness either in another class or at home.
4. Which parts of the program did you think were helpful? Why?
5. Which parts of the program did you think were not helpful? Why not?
6. Is this program something you would want to continue? Why or why not?
7. What does mindfulness mean to you?

Appendix E: Teacher Interview Questions

1. What is your personal experience with mindfulness?
2. How do you think mindfulness interventions affect students, in particular students with special needs?
3. Can you give an example of one of the student participants using mindfulness strategies in your class?
4. How have the behaviors of the student participants improved, if at all?
 - 4a. What kind of behavior issues were the students displaying in class?
 - 4b. What are the behaviors like now?
5. How might you incorporate mindfulness with your own classes?

Appendix F: IRB Letter of Approval

**DOMINICAN
UNIVERSITY**
of CALIFORNIA

November 19, 2018

Michelle Castillo
50 Acacia Avenue
San Rafael, CA 94901

Dear Michelle,

On behalf of the Dominican University of California Institutional Review Board for the Protection of Human Participants, I am pleased to inform you that your proposal entitled *The effects of mindfulness-based intervention on Latino middle school special education students* (IRBPHP application #10721) has been approved.

In your final report or paper please indicate that your project was approved by the IRBPHP and indicate the identification number.

I wish you well in your very interesting research effort.

Sincerely,

Randall Hall, PhD
Chair, IRBPHP