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Mindfulness Breathing in Support of Emotional Self-Regulation in a Montessori Upper
Elementary Environment

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Abstract

The purpose of this research was to examine whether the implementation of mindfulness breathing exercises aided in emotional self-regulation. This study incorporated various breathing techniques five days a week for five to ten minutes each day. The six-week study involved 14 children between the ages of 9 and 12 years in a private Montessori school in the southern region of the United States. Data collection included daily observations of the breathing exercises, pre and post-behavioral self-assessments, a daily reflection tool by the researcher, and a student feedback form. Results showed an increase in regulated behavior and breathing techniques being used by deregulated students. The pre and post-behavioral self-assessment showed an increase in positive self-perception as well as a shift in self-control, responsibility, respect, behavior, and self-esteem. The daily observations showed an increase in calm and focus during the morning and afternoon work cycles after implementation at the beginning of both work cycles. 69% of participants felt mindfulness breathing helped as well as 61% enjoyed mindfulness breathing. Two students independently practiced breathing techniques to help them regulate. The data showed a positive correlation between the implementation of mindfulness breathing techniques and self-regulation in children ages 9 to 12. Suggestions for further research include consistent observation time, implementation of a variety of mindfulness activities including yoga or listening to calming music and having a calm place in the classroom to integrate mindfulness practices.

Keywords: mindfulness, meditation, breathing, self-regulation, elementary, Montessori

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Research indicates that the development of self-regulation is essential to success in the classroom (Selwyn & Goleman, 2014). Children have been having difficulty regulating their emotions while in class and have not been able to appropriately cope with their emotions (Takacs & Kassai, 2019). Whether a child is feeling overwhelmed, or is dealing with trauma in some way, their skill set and ability to self-regulate and appropriately emotionally respond is unregulated. This can look like yelling at other children, hitting themselves on their head, pulling on their hair, banging their head on a table, crying and raising their voice in the classroom, and arguing with peers and guides (Healy, 1990). Not only does this emotional response disrupt the classroom's learning, but it also disrupts their ability to connect with peers and the materials.

Self-regulation is essential in a Montessori classroom (Lillard & Vu, 2017). Through experience with Montessori materials and an environment which emphasizes the importance of collaboration and cooperation, self-regulation is gradually acquired. Students have opportunities to solve problems between their peers and communication is encouraged. While problem solving, they use I statements and listen to each other, giving each person an opportunity to voice their point of view, thoughts, and emotions. When children have difficulty solving a problem, they can ask a peer to be a neutral party and help them problem solve. Even with these opportunities for open discussion and opportunities to solve their problems, some children in the classroom have difficulties regulating their emotions.

This research was conducted in a mixed-aged Upper Elementary classroom in an AMI (Association Montessori International) Montessori school in an urban setting. Children are upper to middle class and mostly white aged 9-12.

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After observing a need for increased tools to support self-regulation, I began researching various methods that could aid in the development of these skills (Higgins & Eden, 2018). This research aims to provide tools through breathing exercises and aid in self-regulation and opportunities of calm and stillness, with the goal of aiding children in dealing with difficult emotions and in turn help children make connections among their peers. The intention is to help children learn coping strategies when their mind and emotions take over and allow them think through their emotions before reacting.

Theoretical Framework

Self-regulation is the ability to manage emotions and actions depending on what a situation requires of you (Shunk, 2012). Behaviorists look at three aspects: Self-monitoring, self-instruction, and self-reinforcement. Self-monitoring is the ability to examine and judge progress on a particular behavior. Self-instruction is when an adult or teacher instructs a child, and through self-talk, the children are able to instruct themselves through a series of steps. Self-reinforcement is when an individual reinforces themselves depending on their performance and the desired response (Gonzales-De.Hass, 2012). However, while the individual is learning self-regulation, self-reinforcement cannot be fully developed without outside reinforcement from an adult. This is where the social cognitive theory of self-regulation fills in these gaps (Nabavi, 2012). This theory looks at self-observation, self-judgment, and self-reaction. Self-reaction is how an individual looks at whether they are making acceptable progress (Shunk, 2012).

In this study, the children in the class have difficulties processing emotions. The behaviorist theory provides a lens that will allow a manageable method to see whether progress is being made regarding their emotional awareness through breathing techniques. Since this theory revolves around self-driven learning, it directly correlates with the development of self-

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regulation. With this lens, the children will monitor their progress and examine their self-regulation; they will differentiate the factors that require self-regulation. This theory is applicable because not only does it provide a lens to gauge self-regulation but also for the children to gauge their own. It will require a demonstration of self-instruction, but once introduced, the children can examine themselves.

Literature Review

Introduction to Problem

It is not uncommon for children to have difficulty self-regulating. As adults, executive functioning and self-regulation skills are more developed, making it easier to think through a problem and weigh options. Yet, in daily life, it is expected that children have the same ability to self-regulate. Societally, children are expected to behave yet, are not given the tools to cope appropriately. Adults must model appropriate emotional responses so that children can practice the same behavior. If children observe poor emotional reactions such as anger, rage, tantrums, guilt trips, and unwillingness to communicate and work through problems, then children will learn the same behavior. Modeling behaviors like respect, honesty, healthy communication, self-regulation, and self-reflection, children will feel more comfortable practicing these same behaviors.

Erwin, Robinson, and McGrath (2015) found that poor self-regulation can come from many sources. Children can have difficulty focusing and engaging in a school environment due to language challenges, communication trouble, and articulation of their thoughts, executive functions, overstimulation, a disorganized, chaotic environment. Fisher, Godwin, and Seltman (2014) found that children were more focused and engaged in a calm, organized environment

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free of clutter and few decorations. Their findings illustrate that too much stimulation in a learning environment can cause the children to feel overstimulated and highlight sensory issues. This kind of environment does not allow children to process their surroundings and the information around them entirely.

In addition to this, the development in technology promotes external sensory information. Today children are growing up in a world with an abundance of external, technological stimulation. They live in a high-speed environment where children are used to receiving information at their fingertips. Selwyn (2014) focuses on the works of Goleman (2013), who describes this technological dependence and culture as a problem for human connection. Children use handheld devices where they are more attuned to their devices than the environment and human interactions around them. Because of this, children are not learning the skills for self-regulation, communication, and problem-solving. They have difficulty focusing and feel pressure because they live in a more high-speed, fast-moving society and environment.

Self-Regulation

Self-regulation is the ability to manage emotions and actions depending on what a situation requires of a person. According to Erwin, Robinson, and McGrath (2017), self-regulation aids in developing human rights, autonomy, self-control, and self-determination.

Garner and Waajid (2012) examined children's emotional competence, which they found played a vital role in a child's self-regulation. They found that children's ability to self-regulate relied on their cognitive, attention, and emotional capacity. If a child is able to maintain positive emotionality in a stressful academic setting, they were more successful in school and on standardized tests. When children could not self-regulate and maintain a positive emotionality,

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they were more likely to have lower grade point averages and had a difficult time following instruction.

Additionally, Takacs and Kassai (2019) found that neurotypical children benefitted from mindfulness practices and could work through the task at hand effectively. They also found that nontypically developing children seemed to benefit more from these self-regulation techniques and seemed enjoyable to these children. They believed that both academically and socially, mindfulness techniques and self-regulation strategies could be implemented into their everyday lifestyle.

Mindfulness Effects and Practices

Mindfulness is a state of being. It is more understood as a set of techniques and practices that can be honed and exercised. According to Kabat-Zinn (2005), “mindfulness is defined as the awareness that emerges through paying attention on purpose, in the present moment, and nonjudgmentally to the unfolding of experience moment by moment” (p. 125). As defined by Decker (2019), mindfulness is a process of constant practice that can create positive health outcomes. Bishop (2004) defined mindfulness as a “process of bringing a certain quality of attention to moment-by-moment experience.” Bishop (2004) stated that mindfulness methods are not “relaxation or mood management techniques,” but a form of mental training to reduce reactivity and help individuals with self-regulation and executive functioning.

Mindfulness practices are vast and include many different techniques such as meditation, yoga, and deep breathing. There are many methods to achieving a state of mindfulness, and it is not limited to solely yoga, meditation, and deep breathing. Many techniques utilize deep breathing within their technique. Decker (2019) stated that mindfulness is not strictly about

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achieving a sense of well-being but also about gaining an understanding of awareness about what is internally arising. It is the process of continuous internal development and self-reflection.

Additionally, Chiesa and Malinowski (2011) stated that mindfulness aims to reach a state of self-understanding to understand reality better.

Virtbauer (2016) states that mindfulness, mediation, and yoga all utilize deep-breathing or the practice of continuously bringing the thought process back to the breath. Decker (2018) supported that by stating that many studies have found that deep breathing has a strong positive impact on an individual's "emotional, physical, and psychological well-being." Perciavalle et al. (2016) found that deep breathing techniques effectively improved daily stress management and were a positive tool regarding self-regulation and mood management when faced with daily stressors.

Greenberg and Harris (2011) found that mindfulness interventions can build mental flexibility and help self-regulation within populations of children; However, there is a need for more research and more theoretically grounded work to investigate these findings. Their research shows that meditation and yoga are beneficial outcomes in children, yet their research is also limited to specific age group. Higgins (2017) found there was a strong emotional awareness when mindfulness breathing techniques were introduced. These breathing techniques helped promote a collective, collaborative environment that helped transform the learning environment. Higgins found that mindfulness breathing techniques helped create a classroom culture of cogenerative discussions regarding their mindfulness practices. Decker's work (2019) supported these findings by stating that these forms of mindfulness require regular practices but through these regular practices, decreased heart rate, respiration rate, blood pressure, skeletal muscle tension, and metabolic rate benefit from deep relaxation and mindfulness practices. Anxiety,

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insomnia, and fatigue significantly decreased with 20 minutes a day of mindfulness exercises through these practices.

Waters (2011) discussed that student well-being is becoming a key focus for many schools and help aid academic success. They found that meditation, breathing techniques, and body scanning helped improve student well-being, including stress reduction, anxiety, depression, optimism, self-acceptance, self-care. Waters (2011) also found that children who continuously practiced mindfulness had greater emotional regulation and were better able to self-regulate and self-reflection.

The Montessori Environment

The Montessori method is closely related to self-regulation as Dr. Montessori hoped to lead the children toward normalization. Normalization comes through concentration and connecting the children to purposeful work. Dr. Montessori stated that “for this, we must provide ‘motives for activity so well adapted to the child’s interests that they provoke his deep attention. Their success in this is dependent on the use of the objects for the purposes they are designed to serve, a thing which is also conducive to the child’s ‘mental order’” (Montessori, 1995, 206.)

Lillard (2016) discussed Montessori philosophy, stated Montessori believed that to be a functioning member of society and gain self-control, the child must have freedom. Montessori created an environment in which the children had freedom and responsibility, or freedom within limits. Children have freedom to move, freedom to communicate, and freedom to choose. With that, they must move responsibly in the classroom watching for other’s work and respect their peer’s personal space; they must communicate kindly and responsibly, watching their volume and choosing respectful words; they must select their works, where they work, and who they

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work with, but they are responsible for choosing constructive, challenging works that help them develop themselves.

The guide helps them develop this ability by setting boundaries and firm expectations of behavior in the classroom. As their will develops and they can self-regulate, they can be responsible members of their community. Lillard (2016) found that children who could choose freely were positively affected and had improved creativity. Their ability to choose helped them engage more with their work and helped them feel more ownership of their work.

Conclusion

Many of these practices and studies have been highly successful and have highlighted the benefits of mindfulness and breathing techniques. However, many of these studies take place in large classrooms and traditional educational environments. Because of the Montessori environment and the role of the lead guide, mindfulness techniques can only be practiced in short interactions. The Montessori guide teaches all subject areas and works within the three-hour work cycle. They cannot execute a prolonged duration of mindfulness activities which can take up to one hour of practice. Many of these practices were held outside the classroom by specialists and not by the children's primary teacher. For that reason, there is a gap in the research that supports mindfulness practices and self-regulation in Montessori environments guided by their lead teacher. For my study, I will be conducting short deep breathing practices once a day for ten minutes.

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Methodology

The purpose of this action research project was to determine the effects that mindfulness breathing has on self-regulation in a mixed fourth through sixth grade classroom. I collected data over a span of six weeks during the spring semester of the 2021-2022 school year. The participants in this project ranged from nine to twelve years old and included 14 students. The students are middle to upper class and a majority white, and the study was held in an urban environment in a mixed-aged Montessori classroom in a private school. The study was part of daily instruction and was integrated into their daily schedule. With permission from their parents, the students in the class participated in various daily, collective, whole group breathing exercises.

The first week of data collection I gave my students a behavioral self-assessment (Appendix A) which contained questions regarding self-regulation behaviors. This was given in order to get baseline data regarding their personal self-perception. I explained the assessment to the students and directed them to circle the answer they identified with the most. They were to circle A for yes, B for sometimes, and C for no. Student self-assessment helps the children become more self-aware and shows their perception of their progress (Garner & Waajid. 2012). If there were any words or examples that the students did not know or were unsure of on the assessment, they would come to ask me for clarification, and we would discuss the question together. Many of the students thought through the idea of option B (*sometimes*) concerning their behavior and ability to self-regulate. Each child worked at their own pace and was given the freedom to take as long as needed. The children were given the same behavioral self-assessment at the end of the study to compare the difference between their ability to self-regulate if any.

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The breathing exercises were presented in five-to-ten-minute exercises at different times each day throughout the course of the study. The breathing exercises included box breathing, alternate nostril breathing, visualization techniques, *ujjayi* breath, belly breathing or diaphragmatic breathing, and pursed-lip breathing. In each session, students were asked to sit in a chair with their feet firmly planted on the ground. They were instructed on how long to hold their breath, where to visualize their breath and emotions in their body and provide an opportunity to breathe at their own pace. The researcher introduced each technique at the beginning of the study and then after they had been shown each breathing technique, they were able to choose which technique they liked the best.

Each session was different and consisted of various breathing techniques and methods. Some days they did one breathing exercise as a whole or they were instructed to choose whichever breathing exercise they preferred. Whether the session was calm or light-hearted, each breathing session would go back to noticing the emotion in their body, where they feel the emotion in their body, and letting it go as they exhaled.

When the children were asked to box breathe, they were asked to inhale for four seconds, hold their breath for four seconds, exhale for four seconds, and pause for four seconds, emptying their lungs before their next inhale for four seconds. I would count with them for the first two rounds and then ask them to count in their head at their own pace. After completing four to five rounds on their own, they were asked to breathe at their own pace with their eyes closed or gazed at the ground.

The students were also asked to complete alternate nostril breathing. They were asked to sit in a comfortable seated position with one hand in their lap and the other hand on their nose. They were asked to take a deep breath, emptying their lungs, and they were instructed to put one

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finger on their right nostril and inhale through the left nostril. They would move their finger from their right nostril and place it on their left nostril and exhale. After exhaling, they would inhale through their right nostril, closing the left nostril and then exhaling through the left nostril, covering their right nostril. They would continue alternating, inhaling, and exhaling through a singular nostril for five minutes.

Another breathing technique that was implemented was deep breathing with visualization techniques. The students were asked to sit in a comfortable seated position with their feet firmly on the ground, with their palms placed comfortably in their lap.

They were asked to breathe deep into their diaphragm, imagining they were filling their stomachs in all directions.

For one visualization technique, I asked them to imagine themselves as trees and their legs and feet as roots growing deeper into the earth as they inhaled and growing stronger as they exhaled. I said this once and then instructed them to breathe deeply at their own pace. Another visualization technique that was used was imagining their body as the shore of the beach and the waves as their breath, moving in and out, through their body. They were asked to notice their breath and where it felt most comfortable in their body.

Ujjayi breath, or the victorious breath, is a breathing technique that is utilized in yoga. The students were asked to sit in a comfortable seated position. They would then inhale through their nose and exhale through their mouth. When they would exhale, they would exhale with their mouth wide open and say "ahh" as they exhaled. They would do this for 5-10 cycles and then return to their natural breathing, with their eyes closed and seated comfortably for the remaining 5-10 minutes.

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Belly breathing or diaphragmatic breathing was done in the classroom, where the children were asked to lie down on the floor or be seated in a comfortable position. They were asked to put one hand on their diaphragm and the other on their chest. With the inhale, they were asked to breathe deep into their diaphragm and to notice their hand raising with their belly as they inhaled. They were also instructed to try to keep their chest as still as possible, like their breath was not filling up their lungs at all, solely filling up their diaphragm. They moved at their own pace, and after a couple of minutes, they were told to breathe in their own time, noticing where they felt their breath and emotions in their body.

Another technique that was utilized during the study was pursed-lip breathing. The students were instructed to relax their neck and shoulders and breathe in through their nose for four counts and then exhale through their mouth with pursed lips for four to five counts. As they exhaled through pursed lips, I told them to notice how the breath came out. The breath may come out slower than four to five counts. They did this at their own pace for five to ten minutes.

A daily observation form (Appendix C) was kept during whole group breathing exercises in order to examine whether children participated in the breathing exercises and their energy before and after the implementation. I observed for willingness to participate, behavior during the exercise, and energy before and after the exercise. This tool examined each student during the exercise. This tool was used to see whether the students' emotions shifted after the exercise and whether their behavior and willingness to participate shifted throughout the study. This tool helped examine each student and look at each daily practice and whether or not the breathing techniques helped them center themselves.

A daily reflection tool (Appendix D) was kept in order to examine the overall emotion and atmosphere of the day, how students worked together, whether there was any problem

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solving, and whether children used mindfulness breathing to help regulate their emotions and breathing. The researcher used this tool to look at the quality of the day and to look to see if there had been any progress with the student's self-regulation.

A student feedback tool (Appendix B) was given to the students at the end of the six-week study. This tool was used to examine the student's responses regarding whether they felt mindfulness helped them, how they felt before and after mindfulness breathing exercises, and whether they enjoyed the breathing exercises. The student feedback tool allowed the children to self-reflect on their emotions and attitudes before and after the breathing exercises and allowed personal qualitative feedback from the students on their personal experiences.

Data Analysis

The purpose of this research was to determine whether mindfulness breathing techniques help children self-regulate their emotional responses. The children completed a series of breathing exercises daily where I observed their emotional responses as well as their behaviors during the breathing exercises. I also observed throughout the day reflected at the end each day. The children also completed both a pre and post behavioral self-assessment form (Appendix A) as well as a student feedback tool (Appendix B) at the end of the study. With the use of these tools, I was able to reflect and collect the findings from this research in order to examine whether or not the breathing exercises aided their self-regulation.

The students completed a pre-intervention and post-intervention behavioral self-assessment which was analyzed to determine whether there was a change between the responses. They were asked questions regarding self-perception focusing on behavior, motivation, attention, responsibility, and emotions. They reflected on themselves pre-intervention and post-intervention. They had a choice between A (Yes), B (Sometimes), and C (No).

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Behavioral Self- Assessment Statements	
Statement 1	I follow directions.
Statement 2	I have good behavior.
Statement 3	I stay on task.
Statement 4	I try my best.
Statement 5	I can work without disturbing others.
Statement 6	I take care of materials and supplies.
Statement 7	I treat others with respect.
Statement 8	I get distracted easily.
Statement 9	I usually feel calm.
Statement 10	I take my time.
Statement 11	I pay attention.
Statement 12	I practice self-control.
Statement 13	I keep my hands to myself.
Statement 14	I ask for help.
Statement 15	I have trouble making choices.
Statement 16	I give up quickly.
Statement 17	Most of the time I don't pay attention to what I'm doing.
Statement 18	Doing well is important to me.
Statement 19	I am willing to work out problems.
Statement 20	I worry a lot.
Statement 21	I want to be the best I can be.
Statement 22	I think about how I am doing.
Statement 23	I set goals for myself.
Statement 24	I care what my peers think of me.
Statement 25	I take responsibility for my actions.

Table 1: Behavioral Self-Assessment Statements

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Table 2 shows six questions out of twenty-five that showed a shift in their self-perception. The other statements had a shift; however, these selections depicted a shift in self-control, responsibility, respect, behavior, and self-esteem.

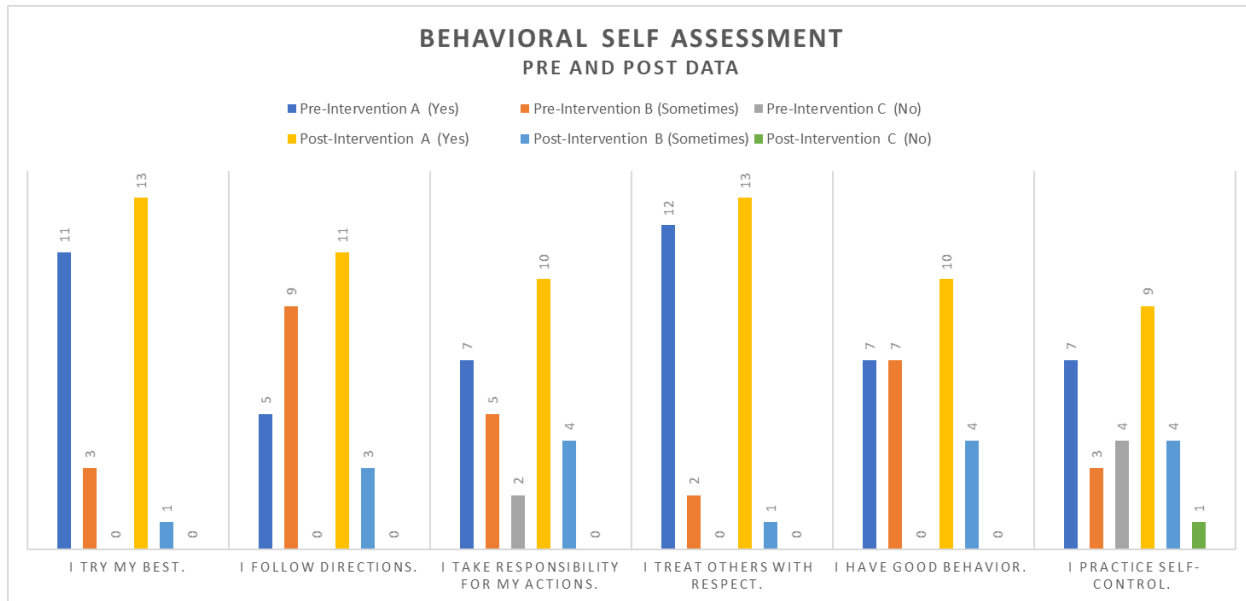


Figure 1: Behavioral Self-Assessment Pre and Post Intervention Data.

Time of Day

Eleven breathing sessions were implemented at the beginning of the morning work cycle throughout the course of the study. Through the use of the daily reflection tool, I observed that after the morning breathing session, the children were focused and calm throughout the work cycle, exhibiting concentration and collaboration among their peers. Around 10:00 am during the work cycle, the classroom began to feel unsettled, where the volume would get louder, they would stop working for snack and would move to different parts of the classroom to interact with other peers. The classroom would generally settle back into a period of concentration, after about thirty minutes. Some days the students had difficulty settling back into work until the end of the morning work cycle at 11:30 am. This corresponds with Maria Montessori's idea of false fatigue. Dr. Montessori (2010) describes false fatigue as occurring after the children have settled

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into the classroom and there is a period of unrest prior to the students settling again into their work where they are able to focus and concentrate (Figure 2).

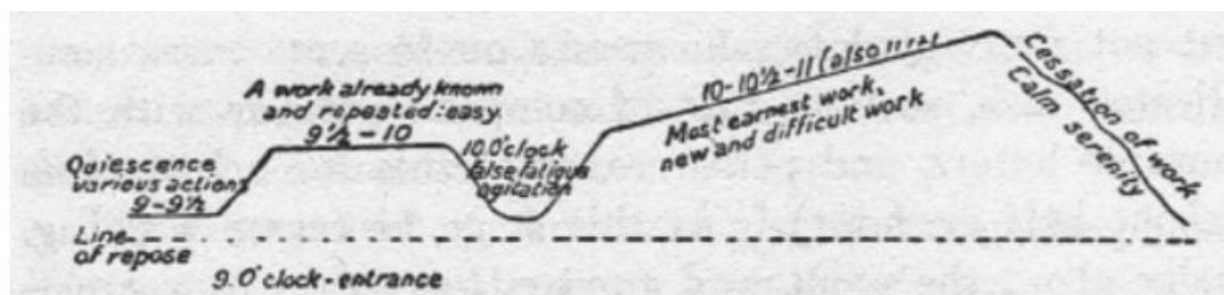


Figure 2: Dr. Montessori's Description of the Work Cycle

Throughout the study, there were a total of 6 breathing sessions that were implemented between 11:15 am and 11:25 am for a duration of 5 minutes. These sessions were given at this time, so the children would not feel limited to practicing breathing exercises solely at the beginning of a work cycle. After the 5 minutes, the children generally went to wash their hands for lunch and line up. The energy was typically high and the volume raised. This is a transitional time for the classroom and typically is an energetic time of the day.

Throughout the study, 11 sessions were presented at the beginning of the afternoon work cycle between 1:00 pm and 1:30 pm for the duration of five minutes. The students were typically slow to begin their afternoon work cycle, but the afternoon was typically calm for a duration of 30 to 60 minutes with the average time being 45 minutes. Towards the end of the day and the end of the afternoon work cycle, the children's energy rose closer to 2:45 pm during classroom job time.

It is important to note that during the afternoon work cycles on Wednesdays, breathing instructions were given prior to a class meeting. The researcher did this in order to see if it would help concentration, prevent interruption, increase focus, and settle the students after recess. It was observed, through the observation log tool, that for a majority of the students, the breathing

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activity helped, while two of the students consistently interrupted, talking out of turn, making noise, and not paying attention to peers leading and participating in the meeting.

Tally of Intervention Time	
Morning (8:30-8:45)	11
Midday (11:15-11:30)	6
Afternoon (1:00-1:30)	11

Table 2: Tally of Intervention Time

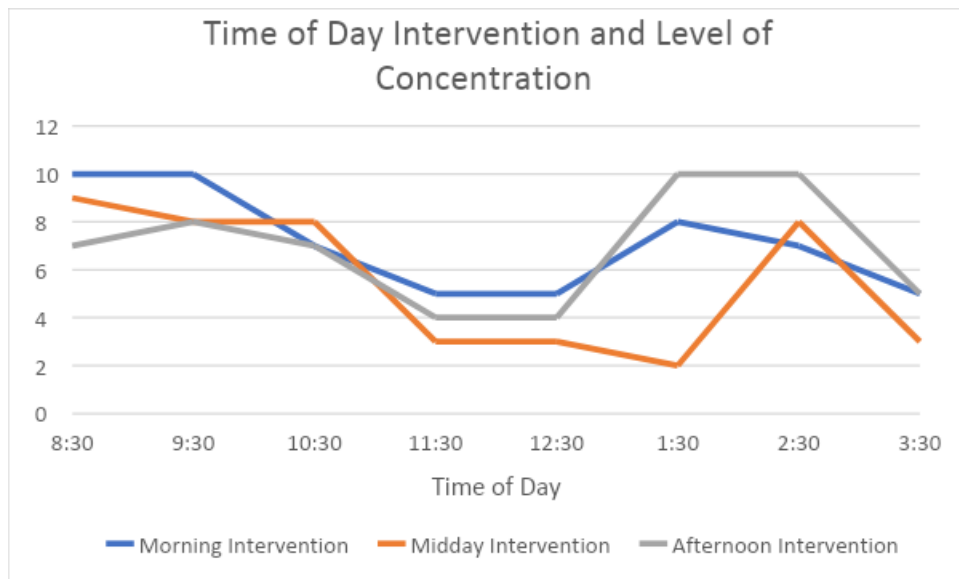


Figure 3: Time of Day Intervention and Level of Concentration

Independent Use of Breathing Techniques

Throughout the study, the children were encouraged to practice their learned breathing exercises throughout the day when needed. We discussed feelings of overwhelm, stress, anxiety, frustration, and how breathing techniques can help support them calm themselves and feel centered. We discussed how mindfulness can help them achieve a sense of well-being but also about gaining an understanding about what is happening internally (Decker, 2019). While this can be a personal and difficult thing to observe, two of the students consistently worked with

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these feelings when they began to feel unregulated or could not control their emotions. Some of these encounters were led by the researcher, while some were independently used.

I consistently observed that when student 2 began to feel frustrated and unmotivated with their work choice, they did not want to work and would look off into the distance and wander around the classroom. When they were wandering around the environment, they stopped themselves, sat at their work spot, and began meditating. They took deep breaths and said “You can do this. Take five minutes and breathe and then try again.” They proceeded to breathe with their eyes closed and their legs crossed for five minutes. When they were finished, they pulled up their chair and went back to work.

This same student used breathing techniques when they would get emotional. Initially, the researcher would help them calm themselves down when getting emotional by breathing together and holding hands, synchronizing our breaths. After about two weeks, they practiced this technique individually when getting emotional and would vocalize their need to take a minute to breathe and calm themselves.

Through the behaviorist lens, this child was able to not only work with self-instruction but with self-reinforcement. Initially, they would need external support from myself to help guide them in their own breathing exercises, but as the study progressed and through the daily, communal practice, they were able to begin the process of self-reinforcement, by working through their breathing exercises when they began to feel unregulated in the classroom.

Another student, student 7, used breathing techniques separate from the study. When unregulated and beginning to shut down emotionally, the student needed the support of an adult to help guide them through a breathing exercise. While the individual was learning self-regulation, self-reinforcement cannot be fully developed without outside reinforcement from an

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adult (Nabavi, 2012). During the study, the student had periods of consistent deregulation. We would work together to help them connect with the materials, their work, and their peers. When this student would experience periods of deregulation, they would begin to shut down by not communicating, crying, hitting themselves on the head, or pulling on their hair. The researcher would communicate with them and try to have them hold their hands and breathe together by taking long, calming breaths. When the student would take these breaths, they would calm down and try to regain their focus and communicate with me.

Initially, the student would only do this while holding my hands. Towards the end of the study, when the student became unregulated, I would tell the student to breathe, and they would breathe individually for a minute. During the study, the student did not practice this independently, but they would practice when feeling unregulated with the help of myself.

Attitudes Toward Mindfulness Breathing

Using the student feedback tool, the student's opinions and thoughts were recorded regarding their experience with mindfulness breathing throughout the study. They were asked four questions about how they felt before and after mindfulness, if they thought it helped them, and whether they enjoyed mindfulness. The students were told to answer with as many responses as they found necessary. They were not prompted with any examples but were told they could ask for help if needed.

Table 3

Table 3: Student Feedback Tool Questions

1. Before mindfulness, I am feeling
 2. After mindfulness, I am feeling
 3. Do you think mindfulness helps you?
 4. Do you enjoy doing mindfulness?
-

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Students gave a variety of responses regarding how they were feeling prior to mindfulness breathing techniques. They were feeling stressed, happy, calm, tired, energetic, and unsure. 29% of students felt stressed prior to mindfulness breathing techniques, with the next two higher responses were energetic (18%) and tired (17%). The remaining responses: unsure, happy, and calm all were 12%.

After mindfulness, 60% of students felt calm. A majority of the students felt calm after the breathing exercises whereas the other responses were 20% tired, 10% motivated, and 10% happy.

When the children were asked if they thought mindfulness helped, 69% said yes, while 31% said sometimes. No one responded with no. In addition to this, 61% of students said yes, they enjoy mindfulness, 31% of students said they enjoy it most of the time, and 8% did not enjoy mindfulness breathing.

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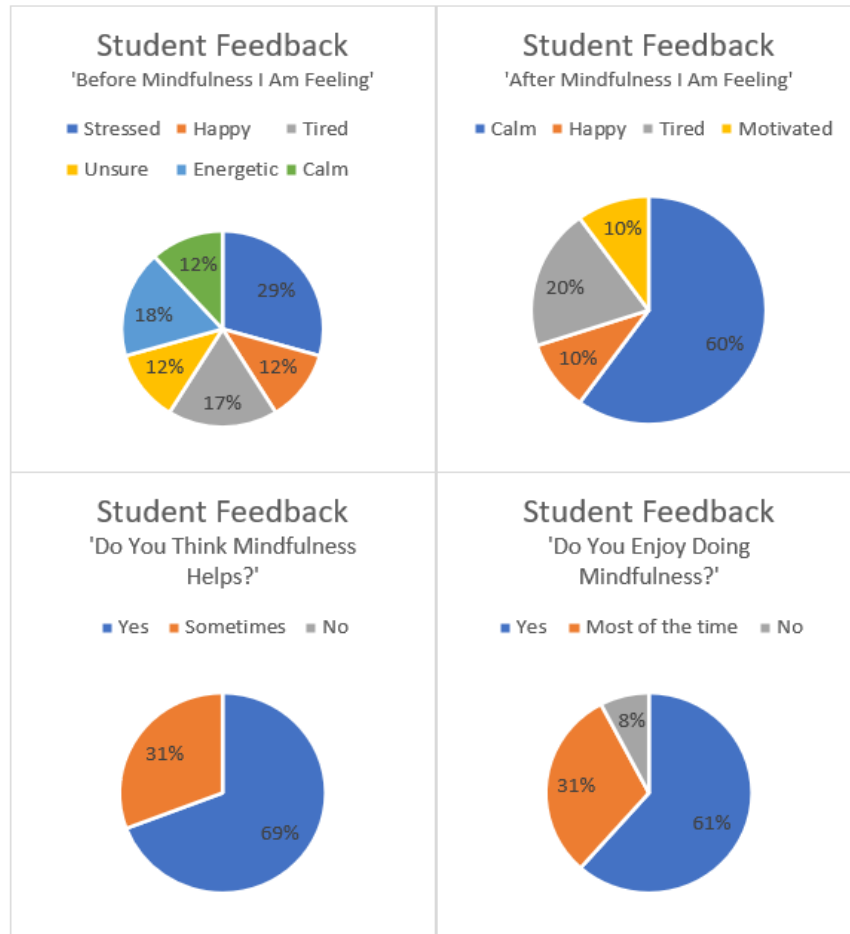


Figure 4: Student Feedback Responses

There was a correlation between the students who answered no, they do not like mindfulness and their regular participation in the daily practice. They answered yes, they think that it helps them, but they do not enjoy it. Through the observation tool used during the mindfulness breathing techniques, the researcher observed that students 11 and 12 did not consistently participate during the activities. They looked around the classroom at their peers to see what they were doing and avoided eye contact with me. Whether the instruction was a specific exercise or a free choice, they observed their peers to watch what they were doing. Their body language during the exercise appeared uncomfortable and unsure.

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Conclusion

Overall, the data suggests that mindfulness breathing had an effect on the child's ability to regulate their emotions. Depending on the time of day, the regular implementation of breathing exercises, children seemed to focus more on their work and when unregulated, were able to find a way to help themselves self-regulate. Providing the opportunity for a variety of breathing techniques allowed the children to see which exercise they particularly liked to use. The time of day seemed to work best in the morning and the afternoon prior to a work cycle and made observation easier for the researcher. Overall, the children felt it helped them feel calm and a majority of the children liked these breathing exercises.

Action Plan

This study aimed to develop 9 to 12-year-old students' self-regulation through mindfulness breathing. The findings indicated that a majority of the children felt that mindfulness was beneficial to them, and they enjoyed mindfulness breathing. Through observations conducted during the breathing exercises, data suggests the children generally were calmer and focused on their work when the exercises were implemented at the beginning of the morning and afternoon work cycle.

Throughout the study, I implemented the breathing exercises at various times in order to see whether the time of day was a factor. These times were at the beginning of the morning work cycle (8:30 am), midday (11:15 am), and the beginning of the afternoon work cycle (1:00 pm or 1:25 pm). This measurement could be improved by setting a specific time each day for observation and practice. As a researcher, it was intentional to look at varying times and whether or not the time of day had more of an effect on the children's self-regulation through breathing exercises. As a classroom guide, it was difficult to plan the times of days because it would

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interfere with the three-hour morning work cycle and the afternoon work cycle. However, choosing one time of day to implement mindfulness breathing in the classroom that is consistent and does not interfere with work time, would be beneficial. Healy (1990) stated, “habits of the mind soon become structures of the brain and they absorb their habits, either directly or indirectly-from the adult culture that surrounds them (p. 138). Having a specific time of day to implement teacher-led mindfulness activities could help integrate and create a culture of mindfulness in the environment.

The children were given a pre-and post-behavioral self-assessment which examined their self-perception regarding their behavior, motivation, attention, responsibility, and emotions. The self-assessment allowed the students to reflect on themselves and allowed me to gauge their self-perception in comparison to my observations. In the future, the self-assessment will have fewer questions as well as specific categories to better analyze the data. This is important in order to more accurately measure the student’s self-perception pre and post-intervention.

The study was limited to 14 students, making the sample size relatively small. In the future, the study could implement breathing exercises across a larger age range, such as the lower elementary, 6–9-year-old classroom, and the middle school classroom, ages 12-14 years old. This would help with the sample size and would provide more feedback on whether mindfulness breathing helps with self-regulation among different age groups. These breathing exercises could also be implemented in 18 month- to 3-year-old environments as well as 3 to 6-year-old settings. The study would need to be modified regarding the behavioral self-assessment and the student feedback questionnaire, but more observations would help to support that gap. Implementing breathing strategies moving forward could provide a structure for younger students which would be reinforced as they move up to the next classroom.

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Moving forward with this study, a set observation time would be more beneficial. As both the researcher and the guide, it was difficult to observe mindfulness breathing throughout the day. However, having a specific time of observation not during mindfulness breathing implementation would allow the study to examine self-regulation throughout the day rather than using the daily reflection tool. This would require specific observation times separate from the observation time during breathing exercises and the daily reflection tool at the end of the day.

This study examined individual practice throughout the study whether it was self-led or if it was led by the researcher/guide. To better support the children in their individual practice, an area in the classroom could be designated to mindfulness breathing or other mindfulness practices. Adding this to future studies would provide a concrete spot for children to go when they are feeling unregulated. This could benefit the children that could not focus or could only focus on what their peers were doing during the community exercises.

This study solely applied mindfulness breathing, but in future studies, it could also implement other mindfulness practices that could be integrated into other aspects of their daily classroom life. Mindfulness can apply to a multitude of subjects or activities and can be integrated into all the children's work in order to aid in self-regulation in a more subject-centered approach (Bringus, 2016). This could include listening to mindfulness meditation music or yoga practices which could benefit children that find mindfulness breathing difficult or feel anxious about turning inward and focusing on their breath.

References

- Bishop, Lau, M., Shapiro, S., Carlson, L., Anderson, N. D., Carmody, J., Segal, Z. V., Abbey, S., Speca, M., Velting, D., & Devins, G. (2004). Mindfulness: a proposed operational definition. *Clinical Psychology, 11*(3), 230–241. <https://doi.org/10.1093/clipsy.bph077>
- Bringus, Rose. (2016). The Effects of Mindfulness on Students' Attention. Retrieved from Sophia, the St. Catherine University repository website:
<https://sophia.stkate.edu/maed/187>
- Decker, J. T., Brown, J. L. C., Ashley, W., & Lipscomb, A. E. (2019). Mindfulness, meditation, and breathing exercises: Reduced anxiety for clients and self-care for social work interns. *Social Work with Groups, 42*(4), 308–322. <https://doi.org/10.1080/01609513.2019.1571763>
- Chiesa, & Malinowski, P. (2011). Mindfulness-based approaches: Are they all the same? *Journal of Clinical Psychology, 4*(4), 404–424. <https://doi.org/10.1002/jclp.20776>
- Erwin, E. J., Robinson, K. A., McGrath, G. S., & Harney, C. J. (2017). It's like breathing in blue skies and breathing out stormy clouds: mindfulness practices in early childhood. *Young Exceptional Children, 20*(2), 69–85. <https://doi.org/10.1177/1096250615593326>
- Fisher. (2014). Visual environment, attention allocation, and learning in young children be bad. *Psychological Science., 25*(7), 1362–1370.
<https://doi.org/10.1177/0956797614533801>
- Garner, P. W., & Waajid, B. (2012). Emotion knowledge and self-regulation as predictors of preschoolers' cognitive ability, classroom behavior, and social competence. *Journal of Psychoeducational Assessment, 30*(4), 330–343.
<https://doi.org/10.1177/0734282912449441>

MINDFULNESS IN SUPPORT OF EMOTIONAL SELF-REGULATION

Gonzalez-DeHass, A. R., & Willems, P. P. (2012). *Theories in educational psychology: Concise guide to meaning and practice*. R&L Education.

Greenberg, M. T., & Harris, A. R. (2012). Nurturing mindfulness in children and youth: current state of research: nurturing mindfulness in children and youth. *Child Development Perspectives*, 6(2), 161–166. <https://doi.org/10.1111/j.1750-8606.2011.00215.x>

Healy, J. (1990). *Why children don't think and what we can do about it*. New York, NY: Touchstone

Higgins, J., & Eden, R. (2018). Cogenerated understandings of mindfulness-based breathing in elementary mathematics classrooms. *The Journal of Educational Research*, 111(6), 678–689. <https://doi.org/10.1080/00220671.2017.1396438>

Kabat-Zinn, J. (2005). *Full catastrophe living: Using the wisdom of your body and mind to face stress, pain, and illness* (Fifteen anniversary ed.). New York, NY: Bantam Del.

Lillard, & Vu, A. (2017). *Montessori: The science behind the genius* (Third edition.). Oxford University Press.

Montessori, M. (1995). *The absorbent mind*. New York: Henry Holt & Company.

Montessori, M. (2010). *Spontaneous activity in education: The advanced montessori method*. Benediction Books.

Nabavi, R. (2012). Bandura's social learning theory & social cognitive learning theory. *Theories of Developmental Psychology*, 1-24.

Perciavalle, V., Blandini, M., Fecarotta, P., Buscemi, A., Di Corrado, D., Bertolo, L., Fichera, F., & Coco, M. (2016). The role of deep breathing on stress. *Neurological Sciences*, 38(3), 451–458. <https://doi.org/10.1007/s10072-016-2790-8>

MINDFULNESS IN SUPPORT OF EMOTIONAL SELF-REGULATION

Selwyn., Goleman, D. (2014). Focus: The hidden driver of excellence. *Library Journal* (1976), 139(3), 61–.

Schunk, D.H. (2012). Learning theories: An educational perspective (6th ed.). Boston, MA: Pearson

Takacs, Z. K., & Kassai, R. (2019). The efficacy of different interventions to foster children's executive function skills: A series of meta-analyses. *Psychological Bulletin*, 145(7), 653-697. doi:<http://dx.doi.org/10.1037/bul0000195>

Virtbauer. (2016). Presencing process: Embodiment and healing in the Buddhist practice of mindfulness of breathing. *Mental Health, Religion & Culture*, 19(1), 68–81.
<https://doi.org/10.1080/13674676.2015.1115474>

Waters, L., Barsky, A., Ridd, A. *et al.* Contemplative education: A systematic, evidence-based review of the effect of meditation interventions in schools. *Educ Psychol Rev* 27, 103–134 (2015). <https://doi.org/10.1007/s10648-014-9258-2>

Appendix A

Name _____ Date _____

Behavioral Self- Assessment

Directions: Circle your response.

A

B

C

Yes

Sometimes

No

1. I follow directions	A	B	C
2. I have good behavior	A	B	C
3. I stay on task	A	B	C
4. I try my best	A	B	C
5. I can work without disturbing others	A	B	C
6. I take care of materials and supplies	A	B	C
7. I treat others with respect	A	B	C
8. I get distracted easily	A	B	C
9. I usually feel calm	A	B	C
10. I take my time	A	B	C

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11. I pay attention	A	B	C
12. I practice self-control	A	B	C
13. I keep my hands to myself	A	B	C
14. I ask for help	A	B	C
15. I have trouble making choices	A	B	C
16. I give up quickly	A	B	C
17. Most of the time I don't pay attention to what I'm doing	A	B	C
18. Doing well is important to me	A	B	C
19. I am willing to work out problems	A	B	C
20. I worry a lot	A	B	C
21. I want to be the best I can be	A	B	C
22. I think about how I am doing	A	B	C
23. I set goals for myself	A	B	C

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24. I care what my peers think of me	A	B	C
25. I take responsibility for my actions	A	B	C

Name _____ Date _____

Student Feedback Tool

1. Before mindfulness, I am feeling

2. After mindfulness, I am feeling

3. Do you think mindfulness helps you?

4. Do you enjoy doing mindfulness?

Observation Log

Date _____

Time _____

Duration of Time Observed _____

During observation time, observe for whether children are problem solving, using breathing techniques, work choices, concentration, volume, conversation, mood of the class.

Any notes that are not related to these topics will be noted separate from observation chart.

General notes regarding classroom observations:

Space for additional notes separate from study:

Appendix D

Daily Reflection

Morning Work Cycle:

Recess:

Afternoon Work Cycle:

Job Time:

Notes:

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