Mindfulness-Based Practice in an Elementary Classroom

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Mindfulness-Based Practice in an Elementary Classroom

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An Action Research Report by Lauren M. Coiner
Mindfulness-Based Practice in an Elementary Classroom

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in fulfillment of final requirements for the MAED degree

St. Catherine University
St. Paul, Minnesota

Advisor ___________________________ Date __________
Abstract

The purpose of this research was to teach children how to control and deepen their focus through mindfulness practice. The study integrated a daily practice of Mindfulness Based Stress Reduction (MBSR) movements, breathing, and focus training. The six-week study involved fourteen children between the ages of 5 and 9 years from a private school in the Bay Area of California. Data collection included a pre-and post-assessment for each child, daily observations, and parent observations. Results of the pre-and post-assessments revealed mixed opinions on the connection between deepened focus and mindfulness practice. Observation data showed an overall increase in the children’s ability to use deep concentration on a task. Parent observations indicated that learners did not consistently show comparable effects in their home environments. The data shows a positive correlation between the MBSR practice and focus in children from ages 5 to 9. Suggestions for further research include a larger sample-size across a wider range of diversity and an extended study period.

Keywords: mindfulness, meditation, stress reduction, attention, focus, Elementary
Introduction

The children in our classrooms are distracted. Some of their distraction is age appropriate and helps them to better understand their environment, however the current level of distraction makes it difficult for a child to discover new interests. This distraction may stem from technology-use, modern advertising methods, or fast-paced lifestyles, among others. I have not focused on the cause, but instead, the effect this distraction has on children’s learning. It is increasingly difficult for children to sustain focus to work in a deep and meaningful way. In the Montessori classroom, children’s plan of work is contingent on their ability to focus on jobs of interest. The children’s level of distractibility makes it difficult for them to identify their interests.

This study is being conducted in a small private school setting with a class-size of fourteen first and second graders. This school is in a suburb of San Francisco, CA. The students have diverse needs ranging from slight dyslexia to sensory-processing disorders, and ADHD. There are also several children with high anxiety and one child with childhood depression. These special needs make the small class size an essential piece to potential successes. The sample group is very ethnically diverse and it is also moderately culturally diverse. Several of the children have spent extended time in other countries. The ethnicities of the group include White, Black, Asian, American Indian, and Pacific Islander.

The problem I am trying to solve is the lack of time and attention for children’s personal connection with their internal state. This involves self-regulation and potential for positive change as an individual. As children reduce their stress level, their executive functioning potential increases. Executive functioning in the child’s brain is responsible for a child’s learning and long-term memory. When a flight or fight stimulus is created, a stressor, it can
prevent the child’s ability to process and remember information. This study examines the benefits of introducing Mindfulness-Based Stress Reduction (MBSR) to Elementary students in an attempt to counter-balance their stress to reduce distraction and deepen and sustain focus on a task.

Literature Review

Kabat-Zinn is the founder of the Mindfulness-Based Stress Reduction (MBSR) practice. He identifies mindfulness as, “the awareness that emerges through paying attention on purpose, in the moment, and non-judgmentally to the unfolding experience moment by moment” (Kabat-Zinn, 1997, p. 145). During MBSR participants go through a series of guided prompts to perform a body scan and purposeful and relaxing movements, along with breathing and sensory awareness exercises. The Mindfulness Based Stress Reduction program has not yet been formally adapted for children. To date, academic research on MBSR in children and adolescents is in its beginning stages and has only once been studied in children younger than age thirteen (Burke, 2010). Burke states, “adapting MBSR programs for younger participants requires attention to age-related developmental needs (attention span, cognitive capacities, language, physicality, relevant content)” (2010, p. 142). Saltzman worked to adapt MBSR for children under the age of ten. She focused on a program for fourth-sixth grade students and their parents by simplifying the main principles of MBSR and adapting them for children by applying developmentally appropriate expectations (2014). Weare mentions the program Mindfulness in Schools Project as an example of the positive effects these practices can have on youth. Many of the mindfulness interventions in the UK are for adults, with sessions lasting for two to three hours each week over the full-course of eight weeks. The programs for children are more varied; they are often personalized, and are
much shorter than the adult programs. These practices can help a child to turn towards uncomfortable emotions that may otherwise be suppressed. The skills used in mindfulness can reshape parts of the brain that correlate with compassion, rationality, and kindness (Weare, 2014).

Chang & Hooper established the need for “empirical information regarding the demands of sustained attention in classrooms” (1998). Chang and Hooper stated there were no quantitative measures on the attention demands of classroom events (1998). In 2004, Bishop observed that research on mindfulness exists mainly for adults and there is very little study on the effects of mindfulness in children. Very few tools have been validated for use with children and adolescents and, according to Baer; the developmental appropriateness of existing measures was questionable (2011). The Mindfulness Attention Awareness Scale was adapted for children (MAAS-C) by Lawlor et al. (2013) and was reported as a valid instrument for children to assess the differences and frequency of mindful states over time (Abbot et al. 2015). However, it was only developed to enhance the mindful attention in children from ages 9-13 years old (Lee et al. 2010). The Mindfulness-Based Cognitive Therapy for Children (MBCT-C) was adapted from the Mindfulness-Based Cognitive Therapy (MBCT) for adults by shortening the practice sessions among other modifications. The duration of each session was reduced from the original maximum of forty minutes of seated breathing to the children’s maximum of ten minutes of seated breathing. This change was necessary because, compared to adults, children often have a less developed memory and decreased attention capacities (Posner & Peterson, 1990; Siegler 1991). An additional modification to MBCT program for MBCT-C, was to incorporate more movement, more frequently. The practice is dominantly focused upon sensory activities, opposed to just
verbally led sensorial perceptions and imagery (Lee et al., 2010). These activities engaged all of the senses: smell, sight, sound, touch, taste, and kinesthetic. These adaptations were made according to Piaget’s (1962) assessment of children’s limited ability for abstraction and this makes a concrete and dispersed perspective of their experience more appropriate (Piaget as cited in Lee et al., 2010).

Educators have found that academic performance is largely dependent upon the child’s ability to regulate social and emotional situations (Bencivenga & Elias, 2003). Emotional Intelligence includes a set of eight necessary skills, including emotional recognition and regulation and self-control (Fatum, 2008). Children are given adequate time to learn these skills of emotional recognition and regulation in mindfulness practice. “Learning social and emotional skills is similar to learning other academic skills in that the effect of initial learning is enhanced over time to address the increasingly complex situations children face regarding academics, social relationships, citizenship, and health” (Elias & Greenberg, et al., 2003, p. 468).

In 1994 The Collaborative for Academics, Social, and Emotional Learning (CASEL), outlined five competencies for elementary students’ Social Emotional Learning (SEL). These competencies include self-awareness, self-management, social awareness, relationship skills, and responsible decision-making. The goals of these competencies are to “improve student attitudes and beliefs about self, others, and school” (CASEL, 2006). The U.S. Department of Education states in [34 C.F.R. sec. 300.304©(4).], “conditions that assign a child with the potential for an Independent Education Plan, under the Individuals with Disabilities Education Act, include the consideration of ‘social and emotional status, general intelligence, academic performance, communicative status, and motor abilities’” (2015). The values of
these social and emotional skills, along with enhancement of self-control, are important in a student’s ability to succeed in academics.

Raleigh discusses the many stressors that children deal with on a regular basis today. She states, “The list of stressors that we face everyday continues to expand as each generation spends more time interacting with machines and expectation of multitasking increases in all aspects of our lives” (2009, p.17). She explains that children often do not have the coping skills to process these stressors. Raleigh says that the time to teach necessary coping skills is when the children are still young (2009). Zimmerman says, “mindfulness in education has been studied with results showing similar positive effects on student performance and decreased levels of stress” (2012, p.10). Zimmerman also supports the integration of mindfulness into a sustainable routine within the classroom. In regular practice mindfulness becomes an “experience that can be called on whenever the need arises” (Zimmerman, 2012, p.10).

The more positive experiences children have within a social context, the more positive their self-perception (Kochenderfer, Sechler, & Visconti, 2013). Mindfulness practice can reduce bad behavior and improve self-esteem in students. Weare asserted that:

Mindfulness has also been shown to be capable of contributing directly to the development of cognitive and performance skills in the young. It would appear that when children and young people learn to be more ‘present’, they can pay attention better and improve the quality of their performance in the classroom […] They can become more focused, more able to approach situations from a novel perspective, more able to draw more effectively on previously-learned material, have less anxiety and greater ability to pay attention (2014, p.15).
Research supports that emotion is a “central organizing process within the brain. An individual’s abilities to organize emotions [...] directly shape the ability of the mind to integrate experience and to adapt to future stressors” (Siegel, 2012, p. 9). According to Iverson and Newberg there is increased activity in the parts of the brain that regulate emotion and attention and those regions of the brain have increased activity during meditation (Iverson & Newberg, 2003). Cognitive control allows people to override inappropriate thoughts and behaviors and it is located in the same region of the brain as learning and memory. Neuroplasticity has been shown to strongly link to improved learning and problem solving in animal research, but it is not yet clear whether it would affect children similarly (Casey, Noble, & Tottenham, 2005).

Cognitive processes attributed to the prefrontal cortex include the ability to allocate attention, to hold something [...] in memory, and to withhold an inappropriate response. Such processes, collectively known as cognitive control, are important developmentally, as they underlie cognitive and social skills essential to academic success, such as the ability to ignore distracting events inside and outside the classroom (Casey, Noble, & Tottenham, 2005 p. 72-73).

According to Cherkasova et al., (2013) people who meditate perform significantly better on attention and executive task functions. Additionally, “there is now evidence from longitudinal studies that improvement in attention performance and increases in grey matter occur over the course of meditative training” (Cherkasova et al., 2013 p. 275). In Cherkasova’s study the same was found in all meditators. They had thicker cortices and based on these “structural, functional, and behavioral results there is substantial evidence indicating that meditative training has a positive impact on attention” (Cherkasova et al.,...
According to Abbot, mindfulness practice enhances cognitive control, reduces stress, and promotes well-being (2015, p. 52).

According to Patterson et al. (2010) solving a problem involves problem orientation and using methods to solve a problem. Problem orientation is the “cognitive processes and emotional impulses that pre-dispose the individual to perceive problems in a certain way” (p. 113). The ability to take increased perspective on the problem can lead to an increase in visible solutions. Similarly, the exposure to outside stress takes children on an emotional journey, one of which they have less or no choice to follow without a specific skill set to channel and manage the emotions it produces. Lee et al. recognizes the “reciprocal interactions between anxiety, impaired attention, and academic difficulties seem to maintain or exacerbate the child’s initial problems” (2010, p. 219). Mindfulness-based stress reduction can provide attention to avenues of relief from stressors and aid the student in recovering their full academic potential.

Previous research has shown that mindfulness practice can be adapted for children and that children are willing to engage in these exercises (Lyons & Zelazo, 2011). “More research is needed to demonstrate the efficacy of mindfulness interventions in larger-scale studies with behavioral outcome measures and adequate experimental control” (Lyons & Zelazo, 2011, p. 63).

The literature strongly supports the use of meditation practice as a way to enhance focus and learning in the classroom. Mindfulness-Based Stress Reduction shows a positive correlation with increasing sustained focus in both adults and adolescents. Based on the success of this intervention with older practitioners, I hypothesize there will be a positive correlation with MBSR and increasing sustained focus of Elementary-age children. This
study will benefit the needed expansion of research on MBSR practice in children under ten years of age. It will add to the body of knowledge on the effects of mindfulness practice on students’ ability to focus on their jobs in an Elementary classroom.

Methodology

Each child was given a pre-assessment prior to the six weeks of scaled data collection and a post-assessment at the end of the six weeks. The pre and post assessments consisted of the same events, with the exception of a series of questions answered by each child’s guardian post-assessment. The pre and post assessment both consisted of each child being asked a series of questions about his/her level of focus and effort during work period, both generally and for the specific day the questions were asked. During this time each child was in a private area away from the other children in the classroom to encourage his/her feeling of confidentiality and emotional safety during the discussion. The children were also asked about the noise in the classroom and whether or not they felt it affected their ability to perform their best work. (Please see Appendix F. for the list of questions.) Following this discussion with each child, he/she was asked to create a water color painting on a 4X7 piece of watercolor paper expressing his/her feelings about the topics of discussion.

Every morning during the six-week period of data collection the children were led through a series of exercises. The movements were generally held for eight seconds. I led the children through breathing exercises and throughout the process I periodically reminded them to bring attention to how various parts of their bodies felt. This process is similar to the body scan, but it is different because your body’s position is shifting as opposed to remaining in a more consistent and easily assessed state. The majority of
focus was on following the movements, not pushing beyond the individual's personal limits, and breathing deep, full breaths.

Breathing was done throughout the course of the movements and it maintained a highlighted focus throughout the entirety of our daily practice. This deep breathing pattern was sustained between ten and twenty minutes. The main difference between the breathing with the movements and the breathing while they lay still was the amount of focus on their feelings. While the movements kept the children engaged in the practice, it also strongly guided and demanded attention on a task, leaving less attention for other thoughts and experience.

We began with the sequence of predominantly standing movements used in Mindfulness-Based Stress Reduction (MBSR) and ended in a resting position for two to five minutes. During the resting period, the lights were dimmed and I led the children through group breathing and aimed for each breath in and out to take seven seconds. I encouraged the children to close their eyes during this time, be aware of their feelings in the current moment, set a goal for their work period, and lastly to continuing to follow their breath. Once the children fell into a deep state of calmness and remained there for at least one minute, I would tap them on their knee to signal that they may be dismissed from group and begin work period.

According to the MBSR standards of practice 2014, “Rather than ‘clone’ or ‘franchise’ one cookie-cutter approach, mindfulness ultimately requires the effective use of the present moment as the core indicator of the appropriateness of particular choices” (Kabat-Zinn, p.161). There are key principles that are present in all MBSR practice that include: “making the experience a challenge rather than a chore, [...] a medically
heterogeneous environment, [...] an emphasis on individual effort, [...] a time commitment,” and fully experiencing each moment by “stepping out of clock time” (Kabat-Zinn, p.162). The adaptations of the MBSR methods are still being developed for children.

Each day during the students’ daily work period I observed their behavior and actions. There are four categories that each child is rated in during five formal observations each day. Each of the scales are rated from 1-10, with each number representing 10% effort. If a child were exerting a level of effort associated with the number 1, the child would have exerted about 10% of what I consider his/her maximum effort. Prior to data collection, I judged each child’s maximum effort through my observations of each child for one month. I maintained a consistent baseline for each child’s effort throughout the data collection. The four activities where the children’s efforts were assessed included: 1.) Following directions and the sequence to complete a job, 2.) Engaging the hands and eyes according to the necessary steps to complete the job, 3.) Level of movement not in relation to the completion of job, and 4.) Social disturbances, distractions while working to complete job. There were a set of scales for each child and his/her ranking was assessed five times during work period, five days a week for six weeks.

The first scale the children were rated with relates the formal sequence of events that move a child through a job in the Montessori curriculum. There are a series of jobs for each child to complete each day during his/her work period. These jobs have a relatively specific sequence that must be accomplished before the job is considered
complete. In the first scale the children were assessed for the effort exerted to move through the sequence and complete the work.

The second scale the children were rated with involved the engagement of the children’s eyes and hands according to the necessary steps to complete the job. The level of effort the children put forth is rated according to their purposeful movement of the pieces in the job and following the sequence of the work with their eyes. This observation helps to identify the level of thoughtfulness involved in moving the pieces of the job to a new position. The first scale is similar, however it only assesses the effort exerted to follow the sequence leading to the completion of the work. The second scale further identifies the depth of thought involved in the movement through the sequence of the job.

The third scale the children were rated with involved the level of movement not in relation to the completion of their job. This assessment was necessary to better develop an understanding of the child’s potential distractions, from movement motivated by social engagement, or from movement that stems from a level of fidgeting or restlessness.

The fourth scale the children were rated with involved the level of social disturbances and distractions the children were experiencing. This could be either disturbance that occurred from the noise of socializing occurring in his/her near vicinity or it could also be from the child’s direct engagement in socializing. The ranking of each disturbance was in correlation to the percentage that it appeared to compromise the child’s engagement in his/her work.
Results

The data collected during work period showed that children’s focus went through dramatic shifts. The children did not appear to spend much time between the state of deep engagement and complete distraction. There were noticeably variable degrees of intensity and duration that were possible for each child while engaging with their work and the state that the child was in when first observed during a data collection session was often the general state of focus the child displayed over the range of sampling time for that day. (See individual’s averaged daily ratings in Appendices A-C.) The children who have the most difficult time staying focused on a job showed the most dramatic increase in their average focus after six weeks. The average focus of the group increased by 19% after six weeks. The students were least focused during week two, with an average of 53% effort and most focused in week six with an average of 72% effort being used during work period. The lowest group average, in week two, is potentially due to the student whose data was not available for the sample period. The second-lowest group average was during week one, at 54% effort. Excluding the incomplete data during the second week, there is an average 18% increase in the students’ focus.
The children who were the most dramatically affected by the adapted MBSR practice were two of the children who have the most difficult time keeping their bodies still. Participant 12 decreased his/her amount of movement by 36% over the six weeks and participant 2 decreased his/her amount of movement by 24%. The amount of movement that was not in accordance with the children completing their job was something I initially thought would more closely correspond with distraction. This was true for several children; however, I did not find that an increase in movement directly correlated with each child’s focus or engagement with his/her work. The amount of extraneous movement within the group decreased from a group average of 26% to 12% of extraneous movement over six weeks.
Figure 2  Participant 12

Figure 3  Participant 2

The range of social involvement for the children is predictable with some of the children and is not as predictable with other children. They are at a peak age for being very social and it can be challenging for them to confront their social urges with purely work-related conversation. Three of the children who had the greatest gains in their focus during work period also had the most dynamic range in their social activity. One day a child would be completely off task and socializing and the next day he/she would be quietly working and focused throughout the job sequence. This ebb and flow in the children’s routines did appear to create natural conversational development and the well-rounded development of relationships with others. Overall the group averages reflected similar transitions, as seen in Figure 4. The range of each participant’s social activity is not reflected in the averages seen in Figure 4. The more specific differences between the least and most social activity of each child can be seen in Figure 5.
Figure 4: Group averages of Extraneous Social Activity

Figure 5. Difference between least and most social activity of each student
The parents of the students answered questions following the six-week intervention about any effects they noticed in the home environment during the six weeks. There was one listed negative effect, and the positive effects varied from no changes observed to six positive changes observed. Some of the noted positive changes included “more observant”, “much calmer at bedtime, falls asleep easily and wakes up in a great mood”, “more empathetic”, “redirects her emotions much better”, “more quickly focuses on the task at hand”, and “more self entertained without digital distraction”. The noted negative change in one child’s behavior at home over the six weeks was “exhibited frustration over math homework” which was a new behavior for this child.

<table>
<thead>
<tr>
<th>Participant</th>
<th>Number of positive changes</th>
<th>Number of negative changes</th>
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</thead>
<tbody>
<tr>
<td>1</td>
<td>3</td>
<td>0</td>
</tr>
<tr>
<td>2</td>
<td>2</td>
<td>1</td>
</tr>
<tr>
<td>3</td>
<td>5</td>
<td>0</td>
</tr>
<tr>
<td>4</td>
<td>2</td>
<td>0</td>
</tr>
<tr>
<td>5</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>6</td>
<td>4</td>
<td>0</td>
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<tr>
<td>7</td>
<td>2</td>
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<td>8</td>
<td>2</td>
<td>0</td>
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<tr>
<td>9</td>
<td>3</td>
<td>0</td>
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<td>10</td>
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<tr>
<td>11</td>
<td>3</td>
<td>0</td>
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<tr>
<td>12</td>
<td>6</td>
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<td>0</td>
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<tr>
<td>14</td>
<td>0</td>
<td>0</td>
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</table>

*Table 4. Parent Observations*
Three children within the study did not end with higher averages of concentration and focus after the six-week period. Two of these children maintained consistently high levels of focus throughout the entire course of the MBSR intervention. One of these two children had an average range of focus from 78-89% and the other child's averages ranged from 81-94% focus. At the close of the six-week sessions, both children maintained high levels of focus and from my qualitative analysis and appear to be positively affected by the practice. The third child was removed from the second week of the study due to an emergency surgery. This child was in a state of recovery over the following 3-4 weeks after returning to our class. These circumstances affected the child's ability to focus during that time. All of the other children involved in the MBSR intervention ended the session with higher averages of focus and attentiveness during work period. MBSR positively correlates with enhanced focus in this study of 5 to 8 year old children.

I found that long periods of restfulness without attention to some form of movement, such as breath, was very challenging for children in this age range. With regular practice the children's level of focus during the movements increased greatly. In the beginning, the children's ability to focus on mindfulness for a sustained period of time was very difficult. Many of the children have not attempted to formally pause and harness their attention. It is both foreign and uncomfortable for many of them. As time went on, they became more open to what we were trying to accomplish and to finding an inner calm. Modern society is often fast-paced and distracted, especially living in an urban area. The MBSR practices led the children to find a quiet and focused place in their minds, even if their window to the experience was fleeting or brief. It appeared
that many of the children would slip into a state of deep awareness and peace for a limited time, perhaps ten seconds, and then become self-aware of that new feeling and come out of it. There were several children who noticeably went through these cycles, always briefly opening their eyes to look at the other children when reaching that state of self-awareness or discomfort.

When some of the children were repeatedly having a hard time calming their physical state or becoming aware of their feelings I would preface the next day’s practice with some guiding principles. I would restate that the goal of the practice was to fully experience the moment and how it requires patience and can feel uncomfortable. I would encourage them to work through these moments of discomfort and impatience to experience the benefits.

In the children’s self-assessments of how it feels when they are focused and working hard, all but two children said it feels good. One of these two children said it makes them feel “tired and hot” and the other said, “It feels bad; it’s really hard.” When their self-assessments were compared to their averages of focused and effortful work, nearly all of the children accurately rated themselves in the pre-assessment. Only two children’s averages did not match their initial self-assessments. The children rated themselves on a 1-10 scale, representing a scale of 10% effort to 100% effort. The accuracy of the children’s self-assessments was rated as 50% effort or more qualifying as effortful and less than 50% effort qualifying as partial or inconsistent effort.

Each child created a piece of artwork to represent his/her feelings during work period. All of the children’s interpretations displayed either a balance of challenging and positive emotions or just purely positive emotional associations. This helps to
mediate the responses given by the two children who claimed they felt badly when focusing during work period.

All of the children felt that they work their hardest and focus intently each day in their post-assessments. This was a forty-three percent increase from the pre-assessment, when six of the students rated themselves as working their hardest and focusing intently only some of the time.

Compared to the pre-assessment, all of the children who were distracted by the noise of the classroom before the intervention were also distracted by the noise in the post-assessment with two exceptions. Both of these children claimed they were distracted by the noise of the classroom in the pre-assessment and noted improved focus in spite of the noise in their post-assessments. One of the children said, “Sometimes I can’t concentrate, but it’s getting easier.” The other child claimed that he was no longer distracted by the noise in the classroom. Based on their self-assessments, this marks a fourteen percent increase in the number of children able to focus in spite of noise in the classroom.

The art from the students’ post-assessment displayed mostly positive emotions. In the children’s interpretations of their work, the negative sentiments were each listed once and included boredom, difficult, guilt, sad, uncomfortable, and tired. The positive sentiments included very happy, comfortable, focused, productive, great, relaxed, energized, and imaginative. A positive sentiment came from each child, even though a few of the children used negative words to balance the experience. (Appendix E) One child’s interpreted her art by saying, “All of my colors are calm breath coming from my
breathing time. Happiness is growing from my breath and my mind.” (See painting below)

![Painting](image)

<table>
<thead>
<tr>
<th>Participant</th>
<th>Post-Assessment Self-Reflection from Students</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>“It makes me feel very happy and calm. It helps me focus on my work.”</td>
</tr>
<tr>
<td>2</td>
<td>“Movement helps me focus a little bit when I am working during work period.”</td>
</tr>
<tr>
<td>3</td>
<td>“It makes me calm and quieter.”</td>
</tr>
<tr>
<td>4</td>
<td>“It makes me relaxed and help me focus.”</td>
</tr>
<tr>
<td>5</td>
<td>“It makes me feel tired.”</td>
</tr>
<tr>
<td>6</td>
<td>“It makes me relax and focus.”</td>
</tr>
<tr>
<td>7</td>
<td>“It makes me feel good and work harder.”</td>
</tr>
<tr>
<td>8</td>
<td>“The breathing relaxes me and helps me get ready to work.”</td>
</tr>
<tr>
<td>9</td>
<td>“The more I move around the more energy I have. Sometimes it can be hard to focus on work when you have a lot of energy. When I make myself tired by running then I’m able to focus.”</td>
</tr>
<tr>
<td>10</td>
<td>“When I do breathing and movement I feel relaxed and I can do my work quietly. After recess I don’t feel relaxed anymore.”</td>
</tr>
<tr>
<td>11</td>
<td>“The breathing makes me feel focused and relaxed.”</td>
</tr>
</tbody>
</table>
“It feels good and helps me concentrate during work period.”

“I get lost in not focusing until something reminds me to focus. It doesn’t feel good or bad, it’s not really a feeling with it.”

“It makes me calm down.”

Table 5: Post-assessment self reflection from students

Many of the children thought the intervention helped them to focus and better apply themselves during work period. Several of the children noted that the effects, diminish with time and that the practice needs to be done routinely throughout the course of the day. After their practice with mindfulness and the benefits that some of them have experienced, I anticipate, if allowed, they would continue their personal practice throughout the day as needed if allowed.

Discussion

This study is one of the first MBSR practice to be conducted with children between the ages of 5-8 years of age. The findings indicate that the children’s ability to focus more deeply increased during the intervention period. The children were better able to pay attention, were more patient and calm. The benefits of this practice may further increase given a longer intervention period.

This research shows potential gains that can be obtained in a learning environment from regular morning breathing and movement practice. While this study mainly followed the level of focus and application of each child, the quality of work would be a valuable consideration in further studies. This study did not distinguish between the
child’s involvement in social activity and the child being in close proximity to social activity. This distinction could provide a more detailed analysis in further studies.

The movements used in this practice were the movements used in the adult MBSR program. I am not formally trained in MBSR and did not have a formal procedure to follow when teaching a child audience. There were several modifications made to the MBSR program for adults to better meet the needs of the students between the ages of 5-9 years of age. These modifications included accounting for a reduced attention span, limited ability for abstraction, and a limited vocabulary to guide them deeply through the mindfulness experience.

As found in other studies, most of the students experienced an increased ability to focus during work period after the six-week intervention. The proposed action will be to continue practicing the modified MBSR program in our classroom and to encourage other classrooms to practice them as well in hopes of seeing similar results. This practice gives students the tools to manage stress and be more present with their emotions. These improvements help children to reduce distraction and both deepen and sustain focus on a task.

The sample population in this study was extremely limited. With only fourteen children in the study, it would be beneficial to repeat the intervention with a larger sample size. Due to the small sample size, there was no control group. While there was a limited sample size, the benefit to this smaller study is the amount of feedback from each child and his/her parents about the intervention. The assessment of benefits was not only from the teacher’s viewpoint in data collection, but also from both the children and their parents. It is not clear whether or not the effects found in this study can be
generalized. However, there may be increased effects from mindfulness practice in environments that are smaller and comparably closely connected.

I was not blind to the intervention and could have had bias in my data collection due to expecting a particular set of results. I tried to remain very unbiased in my evaluation and took time to consciously relax and review my assigned set of qualifications for each category and value before each data collection session. I would journal each day to reflect on potential biases or external influences that could have any affect on my data collection. Through this process I would attempt to consciously maintain an even perspective of the children.

This study shows that there are significant benefits of mindfulness practice when used with children younger than age 9. This study contributes to the body of knowledge on MBSR in children less than ten years of age and shows some of the potential effects of mindfulness practice on students’ ability to focus. These findings show the importance of considering mindfulness practice in academic settings. There are several popular forms of mindfulness intervention in schools at this time, many of which are used with children above the age of 9. While there are many similarities between the types of movements done in MBSR and other mindfulness practices, this study exclusively used those from the MBSR program. From the improvements the children has during the intervention, it can be concluded that there is potential in using MBSR with children between the ages of 5-8 years old. During this range of ages children have more neuroplasticity and the extent of potential benefits throughout the course of their development may be greater than is currently realized.
References


Appendix

A. Averages of Focus Per Week

Participant 1 (Weeks)
One: 3.95
Two: 3.32
Three: 3.96
Four: 4.6
Five: 4.65
Six: 6.6

Participant 2 (Weeks)
One: 2.95
Two: 2.8
Three: 2.68
Four: 2.96
Five: 3.2
Six: 6.02

Participant 3 (Weeks)
One: 5.8
Two: 6.52
Three: 6
Four: 7.2
Five: 7.35
Six: 7.68
Participant 4
(Weeks)
One: 2.85
Two: 4.36
Three: 2.72
Four: 2.4
Five: 3.75
Six: 5.56

Participant 5
(Weeks)
One: 6.85
Two: 4.5
Three: 5.8
Four: 5.2
Five: 6.87
Six: 7.16

Participant 6
(Weeks)
One: 7.85
Two: 8.92
Three: 8.52
Four: 7.96
Five: 8.15
Six: 8.32
Participant 7
(Weeks)
One: 2.05
Two: 3
Three: 2.48
Four: 3.08
Five: 4.4
Six: 5.24

Participant 8
(Weeks)
One: 5.15
Two: 6.12
Three: 7.48
Four: 6.36
Five: 5.6
Six: 7.96

Participant 9
(Weeks)
One: 6.5
Two: 6.8
Three: 6.52
Four: 6.28
Five: 6.25
Six: 8.4
Participant 10
(Weeks)
One: 8.15
Two: 8.92
Three: 9.38
Four: 8.95
Five: 8.1
Six: 9.04

Participant 11
(Weeks)
One: 4.95
Two: 4.92
Three: 5.64
Four: 4.4
Five: 6
Six: 6.6

Participant 12
One: 6.35
Three: 6.06
Four: 3.96
Five: 4.6
Six: 7.64
Participant 13

One: 4.25
Two: 3.6
Three: 3.6
Four: 4.4
Five: 4.15
Six: 6.48

Participant 14

One: 7.25
Two: 4.7
Three: 7.44
Four: 7.64
Five: 6.45
Six: 7.8
B. Extraneous Movement (Movement not in relation to job sequence.)

Participant 1
(Weeks)
One: 3.8
Two: 2.08
Three: 1.84
Four: 1.4
Five: 1.45
Six: 1.48

Participant 2
(Weeks)
One: 4.4
Two: 2.6
Three: 2
Four: 2.08
Five: 2.25
Six: 1.96

Participant 3
(Weeks)
One: 2.05
Two: 1.52
Three: 1.2
Four: 1.32
Five: 1.15
Six: 1.12
Participant 4
(Weeks)
One: 1.5
Two: 1.84
Three: 1.44
Four: 1.6
Five: 1.15
Six: 1.44

Participant 5
(Weeks)
One: 3.2
Two: 1.75
Three: 1.1
Four: 1
Five: 1
Six: 1

Participant 6
(Weeks)
One: 1.5
Two: 1.04
Three: 1.08
Four: 1
Five: 1
Six: 1
Participant 7
(Weeks)
One: 1.3
Two: 1.75
Three: 1.64
Four: 1.32
Five: 1.05
Six: 1

Participant 8
(Weeks)
One: 2.7
Two: 1.8
Three: 1.12
Four: 1
Five: 1.25
Six: 1

Participant 9
(Weeks)
One: 1.8
Two: 1.52
Three: 1.04
Four: 1.44
Five: 1.2
Six: 1.4
Participant 10
(Weeks)
One: 2.45
Two: 1.92
Three: 1
Four: 1.2
Five: 1.55
Six: 1

Participant 11
(Weeks)
One: 3
Two: 2.04
Three: 1.36
Four: 1.16
Five: 1.25
Six: 1.8

Participant 12
(Weeks)
One: 4.9
Three: 1.26
Four: 1.32
Five: 2
Six: 1.28
Participant 13
(Weeks)
One: 2.45
Two: 2.36
Three: 1.64
Four: 1.28
Five: 1.35
Six: 1.32

Participant 14
(Weeks)
One: 2.2
Two: 1.4
Three: 1.12
Four: 1.04
Five: 1
Six: 1
C. Social Distraction

Participant 1
(Weeks)
One: 3.85
Two: 3.8
Three: 2.16
Four: 2.24
Five: 2.1
Six: 1.8

Participant 2
(Weeks)
One: 3.15
Two: 3.7
Three: 2
Four: 1.56
Five: 2.25
Six: 1.76

Participant 3
(Weeks)
One: 2.75
Two: 2.2
Three: 1.5
Four: 1.52
Five: 2.2
Six: 2.32
Participant 4
(Weeks)
One: 2.15
Two: 1.64
Three: 1.64
Four: 1.85
Five: 2.1
Six: 1.88

Participant 5
(Weeks)
One: 2.25
Two: 2.45
Three: 1.65
Four: 1.68
Five: 2
Six: 2.2

Participant 6
(Weeks)
One: 1.9
Two: 1.6
Three: 1.32
Four: 1.56
Five: 2.15
Six: 2.08
Participant 7
(Weeks)
One: 2.85
Two: 2.15
Three: 1.48
Four: 1.92
Five: 1.65
Six: 2.32

Participant 8
(Weeks)
One: 2.85
Two: 2.64
Three: 1.76
Four: 1.92
Five: 2.5
Six: 2.4

Participant 9
(Weeks)
One: 1.9
Two: 2.64
Three: 1.68
Four: 2.68
Five: 2.7
Six: 2.4
Participant 10
(Weeks)
One: 2.05
Two: 2.12
Three: 1.4
Four: 1.4
Five: 2.3
Six: 1.96

Participant 11
(Weeks)
One: 2.75
Two: 3.12
Three: 1.48
Four: 2.16
Five: 1.95
Six: 2.6

Participant 12
(Weeks)
One: 4.15
Three: 1.8
Four: 2.16
Five: 2
Six: 2.28
Participant 13
(Weeks)
One: 2.85
Two: 3.12
Three: 2.2
Four: 2.52
Five: 1.95
Six: 2.12

Participant 14
(Weeks)
One: 3.6
Two: 1.6
Three: 1.56
Four: 1.8
Five: 2.25
Six: 2
D. Pre- and Post-Assessment Artwork

Pre-Assessment

Post-Assessment

Participant 1

Participant 2

Participant 3
MINDFULNESS-BASED PRACTICE IN AN ELEMENTARY CLASSROOM

Pre-Assessment

Post-Assessment

Participant 4

Participant 5

Participant 6
Pre-Assessment

Participant 7

Participant 8

Participant 9

Post-Assessment
Pre-Assessment

Participant 10

Post-Assessment

Participant 11

Participant 12
Pre-Assessment            Post-Assessment

Participant 13

Participant 14
E. Pre- and Post- Assessment Art Analysis and Comparisons

Participant 1

She did not assign meaning to her color choices in pre- or post-assessments. In her pre-assessment she used the colors green on the bottom and top thirds of her paper in thick blocks with thin borders of blue. In the center of the paper she sparsely scattered green and blue dots and separated red dots. In her post-assessment she used blue and green as her base colors, the first she used, and then added purple, red, orange, and yellow. The additional colors began in thicker strands and then separated into more skinnier, less ordered lines. The skinner outgrowths from the main line look similar to the branches growing from a tree’s trunk. In the top right corner of her paper she painted flowers growing up from her dominant stream of colored lines. She described her work as, “All of my colors are calm breath coming from my breathing time. Happiness is growing from my breath in my head.”

Participant 2

He used a gradient of lightest to darkest colors to represent his level of distraction in the pre-assessment painting. He began with yellow on the entire paper and then layered the colors green, blue, purple, and black in concentrated areas of the paper to show her varying levels of distractibility. The completed painting had green as the dominant color on one half of the paper and black on the other. Blue and purple were used in the center in splotches, with some windows to the yellow base layer. In her post-assessment she identified her color choices as orange and black represented “kind of happy”, brown and yellow represented “really happy”, green represented “uncomfortable”, and purple and blue represented happy. The colors black, yellow, and green were used in vertical stripes to make the base layer. The color black was in
the center and was disproportionately large compared to the yellow and green. Blue was used in squiggles and lines, radiating out from the blue, sun-like circle in the center. She used brown and purple in a similar way, by adding it evenly throughout the painting.

Participant 3

He did not assign meaning to his colors in the pre-assessment. He painted stars and clustered dots of the same color into the shape of a circle. The colors used included, green, yellow, red, purple, and orange. In his post-assessment he used various symbols arranged in horizontal lines. All of the symbols in each line were the same. There were five lines, and thus five symbols, used. There was an assigned emotional correspondence to his color choices in the post-assessment. Blue and red represented happiness, purple and green represented “great”, and brown represented “really, really happy”. The order of the colors from the top of his paper to the bottom were red, green, purple, blue, and brown. The largest sections of color were used for the both red and brown lines.

Participant 4

He used similar colors in his pre- and post-assessments. In his pre-assessment the colors were spiraling around one another without any obvious pattern. Blue and green were the dominant colors used. Orange and yellow were used in any available whitespace in the center of his paper and some spots around the periphery. In his post-assessment he used the color yellow in the center in the shape of a circle and then covered it with green in one larger circle, engulfing the smaller yellow one. He left of rest of the paper blank, white, with the exception of a tinge of grey along the upper right edge of the circle. He said blue and green represented happiness, black/grey, represented boredom, and yellow represented relaxation.
Participant 5

He did not assign meaning to his color choices in his pre-assessment but instead he painted a rainbow, flowers, a sun on the grass, and a sky. In his post-assessment he used the green grass to represent happiness, the dots of blue in the sky as “awake/energized”, the wave of brown as tiredness, and the top half of his paper was purple which represented relaxation. He used fewer colors in his post-assessment and applied himself more while painting.

Participant 6

She used only straight horizontal lines in her pre-assessment and each line was in a consistent sequence of colors. Purple represented sadness, blue represented happiness, and green represented “in between”. She used six purple lines, five blue lines, and six green lines. In her post-assessment she used predominantly horizontal lines, but also used three equally spaced vertical lines. Similarly to her pre-assessment, she used purple to represent sadness and blue to represent happiness, but she used the color orange to represent the “in between”. There were six horizontal blue lines in addition to the three vertical ones, five orange lines, and four purple lines.

Participant 7

She used the same colors in both his pre-assessment and post-assessment, but she added the color red to her post-assessment. The red represents “very happy”. In both assessments green and orange represented happy. Blue and purple represented “a little happy”. However, in her pre-assessment there was a lot of white space. She separated nearly all of the colors, with the exception of green and orange. In her post-assessment she filled the entire paper with color. She saturated it so heavily in parts that it made the paper soggy! While blue, green, and
orange were in the center of his pre-assessment painting, they were around the perimeter of the post-assessment painting. Red, “very happy”, filled the center of his post-assessment painting.

Participant 8

She used the same colors in both the pre- and post-assessments. The purple represented “laying down and weight”, the blue represented “breath”, green represented “working hard”, and red represented “When I’m really not able to focus.” In the pre-assessment she used the colors green, red and purple in similar ratio in squiggly lines. She used one large blue squiggly line in the top portion of her painting. In her post-assessment she used similar squiggly lines in red and green along the bottom half of her paper. In the top half she made an enclosed, irregular shape in blue. She also added two hollow red circles to the top half and small purple dots at the very bottom edge of the paper.

Participant 9

The pre-assessment showed a combination of colors in varying ratios that represented different subject areas she was concentrating on in addition to lessons. Green represented journaling, blue represented language and math, brown is for lessons, yellow is for bead chain (a particular math focus she was very excited about), and neither purple or red were identified with meaning. In the post-assessment she used the same color choices to represent each pre-established subject area, however she added two new colors, purple and black. Black is her breath and purple is movement and stretching. “It feels like two colors.” There was a dramatic increase in the ratio of blue, green and yellow used in her post-assessment.
Participant 10

She used the colors orange, yellow, blue and green in the pre-assessment. She only identified the meaning of the colors blue and green. She said blue was sadness and green was sadness. Green was the land in her picture and occupied the bottom third of the paper. Blue lines rose from the center of the green ground and rose into the sky, where blue lines radiated from a purple sun. The sky was orange and yellow. In her post-assessment she identified the color green as “smooth, melting into the floor, heavy”, blue as “relaxed”, brown as “active and energized”, red as happy, purple as “planning and goals” and black as “imagination”. The bottom third of her painting was blue water with a large wave in the center. The blue splashed vertically from this wave into the top of the paper and formed a square shape with green spots. Green spirals were in the sky and were bordered with black and brown against a white backdrop. Red spots speckled the sky and formed two large half circles at the very top of the paper. Purple squiggles were used in the holes of white space.

Participant 11

He did not assign any emotions to his color choices in his pre-assessment. He filled nearly the entire page with color and used purple, blue, yellow, orange, red, and green. The colors were overlapping and mostly in chunks, although blue was used in lines to fill white space along the edges. In his post-assessment he assigned green and blue to represent movement, orange and yellow to represent productivity, black to represent difficult times, and red to represent love. There was a lot of white space in his post-assessment painting. There is one large red circle in the bottom left corner with red lines encircling it. Green fills the white
space between the red lines encircling the red circle. There is a blue starfish-like shape in the bottom right-hand corner with a smaller yellow one below it and an orange one above. There are also two smaller black starfish-like shapes on the top and bottom side of the large blue one.

Participant 12

She used orange, green, and black in her pre-assessment painting. Orange represents sadness, green represents sadness, black and gray represents “disgust and being overwhelmed”. She used gray and black to fill the background of the paper. There were two squares of color on the paper, with one on each side. The square of the left side of the paper was orange and slightly smaller. The square on the right side was green and slightly larger. In his post-assessment she said red represented love and brown represented “feeling guilty for being a distraction”. She covered the entire paper with red two times. Lastly she used brown to add a cross in the center of the paper and boxed it in with a rectangular shape.

Participant 13

Her pre-assessment was similar to her post-assessment in that she chose similar colors to represent her experience. She had purple and pink as the colors to represent not focusing and then in the post-assessment red symbolized his boredom and distraction. Brown was used to represent “really not focusing” in the pre-assessment, and ‘really bored” in the post-assessment. Green and yellow represent being focused. In the post-assessment a new color was added, the color purple, to represent a “meditative, neutral, and comfortable” state.
Participant 14

She used the colors black, purple, green, and blue in her pre-assessment. She did not assign any interpretation of her color choices. She used the colors overlapping over one-another in the center of the paper, leaving considerable white space between the squiggling lines. In the post-assessment she used the colors blue and green to represent happiness, black and red to represent unhappiness, and yellow to represent feeling ready to focus and do work. In her post-assessment she used color on the entire paper. The colors were spiraling and used almost equally in proportion to one-another. Blue was splattered all over the paper as was purple, by mixing blue and red.
F. Parent Observation Questions

1. In what ways has your child’s attention, both to your directions and in general, shifted noticeably since the introduction of our mindfulness-based practice in the classroom?

2. What changes, if any, have you observed in your child’s focus on homework assignments over the course of the mindfulness practice?

3. What ideas and feelings about this new practice has your child shared with you?

4. Over this time, were there any other observations or changes you would like to share?
G. Pre-assessment and post-project assessment with each child

Topics of discussion:

1. Do you feel you worked hard on your jobs today? Explain.

2. Do you work hard and focus on your jobs most days? Explain.

3. Are there certain jobs that you can focus on more easily than others? If so, why do you think you are able to focus better on ______?

4. Do you hear the noise of the classroom when you are doing your work? Explain.

5. On a scale from 1-10, 1 being not at all distracted and 10 being very distracted, how do you think you were today?

6. How does it make you feel when you work your hardest and focused on a job?

7. How does it make you feel when you are not working your hardest and focused on a job?

Following this (pre and post) assessment the child will be asked to create a piece of artwork over a fifteen minute period with watercolors. This artwork will serve as a more abstract perspective of the child’s emotions surrounding the topics of discussion.