Effects of Mindfulness Strategies on Student Self-regulation Skills in Primary and Elementary Students

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Effects of Mindfulness Strategies on Student Self-regulation Skills in Primary and Elementary Students

An Action Research Report

By Kandace Alphonso, Saboohi Durrani, and Monika Sood
Effects of Mindfulness Strategies on Student Self-regulation Skills in Primary and Elementary Students

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In fulfillment of final requirements for the MAED degree

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Abstract

The purpose of this study was to determine the effects of mindfulness-based interventions, such as the MindUP curriculum and Exercises of Practical Life, on primary and elementary aged students’ self-regulation skills. This study consisted of a sample size of 38 students from three different Montessori environments. The data was collected over a period of four weeks using a pre and post parent assessment, observational field notes and tally sheets, and a behavioral student self-assessment tool. Results show a connection between the mindfulness interventions implemented and the children’s ability to self-regulate their behaviors and emotions. The data shows positive effects on student self-regulatory skills and it can be integrated into the classroom to facilitate student academic achievement. Our recommendation for future research is to allow for more time to conduct the study.

Keywords: mindfulness, self-regulation, Montessori, Exercises of Practical Life, MindUP
One of the many challenges students face in our fast-paced, instant gratification oriented-society is managing emotions and behaviors. In order to manage emotions and behaviors, the development of self-regulation is needed. A lack of self-regulation skills is common in both elementary and high school students. Researcher Barry Zimmerman (2002), studying secondary students, found these students exhibited a lack of “goal setting, time management, learning strategies, self-evaluation, self-attributions, seeking help or information, and important self-motivational beliefs, such as self-efficacy and intrinsic task interest” (p. 64); these challenges trace, in part, to students’ lack of self-regulation. Self-regulation has many definitions or interpretations that seek to simplify its meaning including but not limited to self-control, self-monitoring/self-management, social behavior, self-determination/loss of control, and learning/learning strategies (Burman, Green, & Shanker, 2015). While the students lacking self-regulation skills that Zimmerman (2002) studied were high school students, learning and strengthening these skills begins much earlier in a student’s development.

As teacher-researchers working with primary (3-6) and elementary (9-12) school-aged children in Montessori education, we have found students struggling with self-regulation in our settings. Among our students are children who struggle to control their emotions and behaviors in challenging situations and to concentrate or focus on a specific task. Maria Montessori described this type of child as not yet normalized. According to Susan Stephenson (2018), author of *Montessori and Mindfulness*, Montessori borrowed the term “normalization” from anthropology, in which it “meant that children were constructive and kind in their behavior” (p.166). Accompanied by our own observations and Maria Montessori’s words about normalization we believe that it is critical for young children in school settings to learn these self-regulation skills to become normalized. In our primary environments and sometimes in the elementary classroom, we have noticed that the children are interrupted several times throughout
the work cycle by other children and adults. This hinders the child’s ability to develop concentration. In addition, the adults provide unnecessary help or leave needs unattended, both resulting in children’s lack of practicing and developing self-regulatory skills.

Some research focuses on the development of self-regulation and its impact on children’s outcomes. Booth, Hennessy, and Doyle (2018) stated that “from early in childhood, multiple aspects of self-regulation are associated with enhanced academic and socioemotional outcomes, including higher levels of school readiness, fewer problem behaviors, and lower levels of anxiety and depression” (p. 77). While there is research demonstrating the importance of self-regulation across the lifespan, there are gaps in understanding how primary and elementary-aged children can be best supported in acquiring and improving self-regulation skills. By demonstrating that mindfulness interventions can support the acquisition and development of self-regulation skills, this research provides a tool by which teachers and other adults can support elementary-aged children. In so doing, this research can help support improved outcomes across the lifespan.

Given the importance of self-regulation to students’ well-being and success, it is important to identify interventions that can support students in developing their self-regulation. This research will explore whether implementing mindfulness in primary and elementary school classrooms can support students’ developing self-regulation skills. Mindfulness can be defined as “being deeply involved with, or concentrating on, what we are doing or thinking about in the present moment, without being distracted by what is going on around us or our thoughts about anything but what we are experiencing right now” (Stephenson, 2018, p. 1). Mindfulness could help address issues related to self-regulation by drawing a participant’s awareness of his/her/their emotional state(s). Research suggests that mindfulness-based interventions have a positive effect on preschoolers’ executive functioning skills, emotional control, and the ability to plan and organize goals (Thierry, Bryant, Nobles, & Norris, 2016). Given the challenge that students’
underdeveloped self-regulation skills pose in school settings, there is a need for effective interventions, such as, potentially, mindfulness training, to support students in developing those skills.

This research took place in three different classroom settings within three different countries over a 4-6-week period in one public and two private Montessori classroom environments. Fifty children ages 3 -12 participated in the study that examined the effectiveness of a particular set of interventions, mindfulness training and activities, in supporting student self-regulation.

**Review of Literature**

Self-regulation has been a topic of much study, as the following literature review will show. This section will discuss the framework that supports the research, then lead into a brief introduction of executive functioning and self-regulation – definitions and significance to child development. Next, a discussion of mindfulness, its connection to self-regulation, and research that supports this practice will follow. This section will conclude with an overview of current research that has been conducted to study mindfulness-based interventions such as Exercises of Practical Life in Montessori learning environments and the MindUP curriculum that promote the development of self-regulatory skills in early childhood.

**Conceptual/Theoretical Frameworks**

The main theoretical framework that guided the research is social constructivism theory. According to the father of social constructivism, Vygotsky (1978): “Every function in the child’s cultural development appears twice: first, on the social level and, later on, on the individual level; first, between people (inter-psychological) and then inside the child (intra-psychological).”
He further elaborated that self-regulation “applies equally to voluntary attention, to logical memory, and to the formation of concepts. All the higher functions originate as actual relationships between individuals” (p. 57).

Action research is similar to constructivist theory as they both are centered around improving educational practices without a predetermined hypothesis or result. According to Dale Schunk (2012) in his text *Learning Theories: An Educational Perspective*, educational theories allow a researcher to formulate hypotheses and test them, whereas constructivism theory does not annunciate the proposed methodology. Instead, Constructivism propounds that “learners create their own learning” (p.230). Constructivists challenge traditional educational beliefs which assume that there is a “fixed” knowledge base which can be passed from one person to another --namely educator to the learner (Hirtle, 1996, p. 92). According to Dale Schunk (2012), “A core premise is that cognitive processes are situated (located) within physical and social contexts” (p. 274).

The research studied relates to the social constructivism theory because it is using teacher facilitated mindfulness practices to allow the students to engage in independent exploration and self-discovery. The role as educators, therefore, shifts from teacher to facilitator wherein we interact and support the learner and then gradually decrease our involvement for the child to engage in independent learning. Reinforcing the approach, Gray (1997) stated that when students are actively engaged in a democratic environment social interaction becomes a vital part of learning (as cited in Amineh and Asl, 2015). This concept of Gray’s supports the two strategies we plan to implement in our learning environments. Hence, according to Schunk (2012), it can be concluded that Constructivism must be evaluated, not based on whether the theory is true or false, but “[on the] process whereby students construct knowledge and how social, developmental, and instructional factors may influence that process” (p. 234).
The literature review and research design underscores that the independent variables in our study will consist of the curricula that we are implementing: MindUP and the Exercises of Practical Life. The dependent variables to be measured in our study, according to the Constructivist approach, are as follows: 1) knowledge students have already acquired from their experiential learning; 2) researchers will integrate the old (prior) knowledge with new knowledge to make learning robust and sustainable; 3) independent exploration and discovery; and 4) to measure is the child’s ability to self-regulate behaviors and interactions based on developing mindful practices (Kalpana, 2014).

**Executive Functioning and Self-regulation**

To understand the significance of self-regulation in early childhood and how it is effectively developed, we must first understand the executive functions (EF) that enable us to plan, focus attention, and remember. According to researchers, executive functioning (EF) is an umbrella term which refers to the attention-regulation skills that overlap with attributes of fluid intelligence, which involves thinking logically and solving problems in new situations (Bridgett, Oddi, Laake, Murdock, Bachmann, & Desteno, 2013). Bridgett et al. (2013) stated that EF skills help with social-emotional learning, or self-regulation (SR), through the mitigation of negative responses, sustaining attention, and using working memory effectively (p. 49). Bunge and Wallis (2008) stated that self-regulation is a term used to describe emotional control and is often associated with inhibitory control skills, which is one of the vital domains of EF (as cited in Zelazo and Lynos, 2012, p. 154). Bridgett et al. (2013) stated, “the executive function of inhibition may be specifically important for regulating expressions of negative affect. Those with better inhibition are better able to suppress displays of negative emotions, but may still experience negative affect” (p.49).
Developing EF skills promote self-regulation skills, which facilitates students’ learning outcomes. Researchers Obradović, Sulik, Finch, & Tirado-Strayer (2018) stated that EF skills can be “linked to various educational outcomes, including specific academic skills, school engagement, and self-regulated classroom behaviors” (p. 4). To reinforce the knowledge learned, in order to properly develop EF skills that support self-regulated behaviors, the development of self-regulation is required. Developing self-regulation requires supporting an individual’s desire to modify their thoughts, actions, and emotions, which is related to significant developmental outcomes (Schonert-Reichl, Oberle, Lawlor, Abbott, Thomson, Oberlander, & Roeser, 2015). Burman, Green, and Shanker (2015 p. 1516) elaborated that “learning self-regulation involves learning how to monitor and manage one’s internal states and predispositions, so that behavior can be appropriately controlled not only in the classroom but also in any other situation where one is expected to become better educated or informed.” He further explained that “not only is the Will implicated, but so too is the developmental pathway that can increase its power and effectiveness in controlling behavior” (p.1516).

The period for developing self-regulation skills is during an individual's formative years. Collins (1984) found the prefrontal cortex (the behavior moderating region of the brain) and its function, increases during childhood, which is a time when self-regulation is shaped easily (as cited in Schonert et al., 2015). If the development of self-regulation during childhood is supported, children may acquire a number of competencies that help them subdue disruptive behaviors, thus leading to positive relationships and an improved desire and ability to learn (Giedd, 2008). The significance of learning self-regulated behaviors in early years is supported by the research.
Mindfulness and Self-regulation

In order to support and promote self-regulation during childhood, the child needs to learn the art of mindfulness. According to Jon Kabat-Zinn (1994), mindfulness can be defined as “paying attention in a particular way: on purpose, in the present moment, and nonjudgmentally” (p. 4). Kabat Zinn (2003) claims that “mindfulness [is] conceived of as a set of practices to cultivate this state of mind, [and] typically includes meditation exercises and the bringing of mindful awareness to daily activities like eating. These practices are designed to cultivate focused attention and EF, coupled with a non-judgemental, curious attitude toward moment to moment experience” (as cited in Schonert et.al., 2015, p. 53). Similarly, Erwin, Robinson, Mcgrath, and Harney (2017) described mindfulness as “deliberate breathing, movement, and meditation that elevate one’s sense of harmony and awareness of the present moment” (p. 72). Therefore, research suggests that mindful practices involve focusing one’s attention in order to bring awareness to current situations.

Research suggests that mindfulness can be linked to enhanced academic achievement and self-awareness in preschool-aged children. Thierry et. al., (2016) conducted a two-year study regarding the effects of mindfulness practices on pre-kindergarten children; the findings suggest that the children in the mindfulness intervention group had increased social competence. In support of this study, Flook, Goldberg, Pinger, and Davidson (2015) found that the teacher reports noted improved grades by the end of the school year. Awareness of social competence, including self-awareness, is one dimension of self-regulation that helps the child to manage or develop their EF skills and social outcomes. Mindfulness training has also been proven to improve preschool children’s performance on attention and inhibitory control. Additionally, these practices may promote discretion in students’ everyday lives, which may prevent negative
emotional responses to situations which are unexpected or disruptive to learning (Shapiro, Lyons, Miller, Butler, Vieten, & Zelazo, 2015).

The evidence has proven that practicing mindfulness training demonstrates improved executive functioning skills, reinforcing practices of “self-regulation that are top-down, effortful, and consciously controlled” (Shapiro et al., 2015, p. 21). According to Erwin et al. (2017), if educators were to implement mindfulness into their classrooms, it holds the potential to improve self-regulation skills in children. In order to examine the development of self-regulation skills in children in the unique context of our own classrooms, two different mindfulness-based interventions were implemented.

**Tools Used for Intervention**

Using mindfulness to develop self-regulation in children can be supported by the learning environments that children are in. Burman, Green, and Shanker (2015) argued that by focusing on creating learning environments (including classrooms) which support self-monitoring/self-management along with “co-regulatory Social Behavior”, or support from teachers or providers, the result can be classrooms and teaching “…that help lead the children to produce similar or better outcomes more easily and with less fuss” (p. 1519). By supporting self-management and co-regulatory social behavior, teachers can help children in learning skills and identifying strategies by which the children can effectively regulate themselves. In particular, the Montessori learning environment equips the child with materials that promote self-regulation skills. These are referred to as Exercises of Practical Life (EPL). EPL is a set of activities based on daily life activities, chores, and responsibilities that are done purposefully. These exercises help the children gain independence in daily life and adapt to the norms of their society (Joosten, 2013). Montessori’s prepared environment and didactic teaching materials may allow students to experience meaningful struggles that ultimately lead to higher levels of self-esteem and self-
control (Bagby & Sulak, 2018). Dr. Maria Montessori (1956), the creator of the Montessori method and the EPL materials, stated, “[t]here is a strict relationship between manual labour and deep concentration of the spirit” [(p. 71) as cited in Lillard 2011, p. 81].

Practical Life activities are fundamental to Montessori education. The child needs “activity concentrated on some task that requires movement of the hands guided by the intellect” (Montessori, 1966, p. 138). Simplicity is given value in mindfulness practices and throughout Montessori education (Kabat-Zinn, 1994). Montessori (1917/1965) emphasized that the repetition of simple yet profound exercises lead to students reaching higher levels of engagement and understanding. EPL can help children gain patience, concentration, attention, focus, and inhibitory control of their mind and body. Although EPL encourages a style of what may be called meditation, concentrated attention is not confined to the often-associated idle body stillness that meditation requires, but rather it is to be applied throughout the child’s whole life, to every act and movement (Lillard, 2011, Diamond & Lee, 2011).

Some of these activities include preliminary exercises (i.e. carrying a tray, opening and closing a door, etc.). The silence game involves children sitting silently in a chair or on the floor using the auditory sense to listen for the guide’s voice. When they hear the guide call their name, they rise and quietly walk over to the guide and wait until all the names have been called. Dr. Montessori realized that the silence game created a sense of carefulness in the child’s actions and also influenced kindness within the children she studied (Stephenson, 2018). Walking on the line is an activity to allows the children to practice control of movement. There are a variety of items for the children to practice walking on the line with. For example, children may choose to carry a bean bag on their head while walking on the line.

There are many similarities in mindfulness and Montessori education; what differs, however, is that Montessori is a holistic approach to life. Montessori education encompasses
Mindful education as a steady everyday classroom practice. Both approaches, emphasize on deep concentration as a source of personal development, leading to self-regulation, balance, and joy, which in turn leads to healthy relationships with other people and with the environment (Lillard, 2011).

Mindful practices in Montessori learning environments have positive effects on the development of self-regulation. Over the past decade or so, contemplative practices have expanded, including mindfulness, available for educators to implement in their early childhood/preschool environments and in K-12 settings (Shapiro et al., 2015). One of these practices is the MindUP curriculum developed by the Hawn Foundation in 2002. According to Shapiro et al. (2015), MindUP is a curriculum based on four pillars: neuroscience, mindful awareness, positive psychology, and socio-emotional learning. MindUP curriculum consists of 15 lessons, approximately 20-30 minutes for each, which are tailored to children from pre-kindergarten to grade eight (Shapiro et al., 2015). MindUP practices focus on breathing and mindful awareness techniques like mindful seeing, mindful listening and/or mindful eating (Thierry et al., 2016) that proved to have helped students in multiple ways.

Mindful activities, such as the MindUP curriculum, can help children manage learning challenges. According to the Hawn Foundation, students come into the classroom with a multitude of issues that hinder their ability to learn and participate (Shapiro et al., 2015). One of the applicable MindUP strategies is the “Brain break” that helps to facilitate the child calming his/her/their mind through mindful breathing, thereby the child’s emotional thinking and allowing him/her/them to refocus. After learning about the brain, the child understands how to use the strategies to calm his/her/their brain (Kornak, 2017, p. 58).

Research has shown that the MindUP curriculum supports children’s ability to control their emotions and acknowledge their awareness towards others. Schonert-Reichl et al. (2015)
conducted a study using behavioral measures of attention that found that children who participated in MindUP achieved significantly better results on executive functioning tasks that required working memory, cognitive flexibility, and response inhibition compared to a control group. This study showed that “there has been considerable theorizing and some data indicating that EFs, and in particular inhibitory control, are especially relevant to the development of emotional regulation during childhood” (Schonert-Reichl, 2015, p. 17). These findings were further confirmed by Maloney, Lawlor, Schonert-Reichl, & Whitehead (2016), who found that practicing mindfulness activities through the MindUP curriculum promotes feelings of self-control over one’s thoughts, actions, and emotions (as cited in Thierry et al., 2016). In the study by Schonert-Reichl et al., (2015) the study sample consisted of a randomized group that participated in the Mind-Up intervention program, consisting of 12 lessons taught once weekly for 40 -50 minutes. The lessons were followed by 3 minutes of mindful activity thrice daily. According to the study, the findings were positive, demonstrating that the intervention produced positive behavioral and cognitive results in students. Shapiro et al., (2015) and Thierry et al. (2016) found that the MindUp curriculum helps to develop children’s awareness of empathetic feelings towards self and others, which may lead to improved interpersonal skills. The MindUP curriculum supports the awareness of mindfulness in children which can promote self-regulation skills.

Incorporating mindful activities and teaching strategies that promote self-regulating behavior appear to reinforce positive behavioral and cognitive results. Mindfulness strategies in EPL and MindUP that were incorporated in past research resulted in positive gains in students developing empathy towards others, concentration in their workflow, and positive responses towards unexpected and potentially disruptive situations. The research of mindfulness training
utilizing EPL and MindUp reveal that mindfulness is an aid to life as well as an aid to student school readiness.

Upon reviewing research findings, practicing mindfulness-based interventions help students in developing self-regulatory skills to be consciously aware and be present in the moment. However, the literature did not mention these interventions studied in three different countries. It also lacks support for mindfulness-based interventions within Montessori classroom settings, such as EPLs and also with the use of the MindUP curriculum. Our research incorporated mindful activities, such as MindUP and Montessori Exercises of Practical Life within the primary (2 1/2 to 6 years of age) and elementary (9 to 12 years of age) Montessori environments to better understand and support children’s self-regulation skills development.

**Methodology**

The approach for this study was a qualitative experimental design using MindUP and EPL to measure student learning and behavioral changes. Students’ self-regulation skills were measured by a combination of the following methods: (1) a pre and post parent assessment, (2) observational field notes, (3) tally sheets, and (4) a behavioral student self-assessment (BSSA). The research study was conducted over a duration of 4 - 6 weeks in three Montessori classrooms: one public elementary (ages 9-12) and two private primary (ages 3 -6) Montessori classrooms. The subjects in this study were primary and elementary aged children at three different schools in three different countries. The primary environments were both part of small private Montessori schools. Environment 1 was located in a small suburban area in the southern region of the United States and environment 2 was in a large metropolitan area in Pakistan. Environment 3 was a public elementary classroom located in a metropolitan area in the southwestern region of Canada.
The sample size of 50 participants was chosen out of a population of about 350 students ranging between the ages of 3 - 12 years old based on the parents who signed the passive consent form (see Appendix A). The passive consent form was sent to parents at the beginning of the research project from the three different Montessori environments. This form explained the process of the study, the strategies that would be introduced to the participants over the course of 4-6 weeks, and the data tools used under the guidance of the faculty member from St. Catherine University. The passive consent form gave the parents an option to include their child in the data collected or exclude them from the study. The researcher visiting environment 2, asked the school administration and the lead teacher to send the consent forms to only the most regular students with the most cooperative parents to ensure that data collection tools were used well, resulting in a sample size of 50 participants including 26 fourth and fifth graders: 11 females and 15 males, and 24 primary students: 8 females and 16 males.

The parent pre- and post-assessment forms (see Appendices B and C) in environment 3 were sent home in an envelope with the children, whereas, environments 1 and 2 the forms were directly sent home by the school administrators. The form was coded (with participants first and last name initials and numerals) to maintain the confidentiality of the participants. The open-ended assessment form was completed by the parents before the intervention and at its conclusion. This measurement instrument collected qualitative and quantitative data using open-ended questions and checklists to understand students' self-regulation (SR) skills prior to and following the research study. The assessment form included both multiple-choice and open-ended questions that offered respondents several options of answers to choose from and the opportunity to elaborate on certain responses.

The researchers presented the MindUP or the EPL strategies to the participants every day over the period of 4-6 weeks. The procedure for implementing the interventions varied slightly
for each environment depending on the location, but the procedures and data tools used were consistent across all three classrooms with small variations in procedure due to culture and age of children.

Environment 1 utilized the MindUP curriculum. The researcher observed and noted children’s behaviors on the observational field notes and tally sheet from 8:15 to about 11 a.m. each day. Weeks two, three, and four, the researcher arrived in the classroom at 10 am when the teacher presented the MindUP lesson to the large group of children during circle time. Once the lesson ended the researcher approached the participants to fill out the Behavioral Student Self-Assessment (BSSA). The rest of the time was spent observing the participants behavior until 11 am.

Environment 2 used the Montessori curriculum of Exercises of Practical Life (EPL) in a Montessori school that showed interest in improving their Montessori program through this Action Research Project. As EPL is usually presented and practiced throughout the day, the researcher visited the school at a variety of hours through the weeks of the project. Students were usually working collectively on lessons and anytime the lead teacher worked with smaller groups, the rest of the students demonstrated disruptive behavior and interactions. The researcher used these windows of time to introduce children to EPL while the lead teacher continued her lessons.

Similar to environment 1, environment 3 used the MindUP curriculum to introduce mindfulness-based interventions to the participants. The researcher presented a MindUP strategy to the participants every morning from 8:45 to 9:15 am. The researcher scheduled the intervention in the morning as she was aware that she would be assisted by the resource teacher (learning support teacher) for a fifty-minute block afterward. This fifty-minute block allowed
the researcher to have time to observe the participants’ behavior during open work blocks after
the interventions were implemented.

Utilizing observational field notes (see Appendix D) allowed researchers to collect data
congering the children’s current behavior both while working independently and while
interacting with others before or after the presentation of mindfulness-based strategies. Tally
sheets (see Appendix E) were created listing traits exhibited by students during independent
student work time. They were used based on the child’s executive functioning skills to collect
observational qualitative data that demonstrated the traits during independent student work
cycles. Initially, these were to track EF skills but were combined with the observational field
notes to track self-regulated behaviors to evaluate the child’s development before and after the
initial presentation.

The method followed consisted of the teacher delivering a lesson from the MindUP
curriculum or Exercises of Practical Life. The method used to implement these Mindfulness
strategies varied in each environment. In environment 3, for example, one of the MindUP
strategies the teacher (researcher) used was to ask the students to sit straight with their body in a
comfortable position while resting their hands on their knees. The students were given a choice
to either close their eyes or look down. The teacher used a bell or chime and gave the
instruction, “When I ring the bell listen to the tone as it fades away while you focus on your
inhale and exhale; counting your breath.” Over time other strategies of building awareness
towards the environment included using listening skills; promoting understanding and empathy
towards others, using visual senses etc. A new MindUP curriculum chapter aimed at one of
these strategies was introduced once a week. The new strategy was introduced on Monday and
was practiced throughout the week for thirty minutes each day. In sum, five strategies/chapters
(How Brain Works, Mindful Awareness, Mindful Listening, Mindful Seeing and Perspective
Taking) out of the fifteen chapters of the MindUP curriculum were used over the four-week period.

In environment 1, the teacher called her class to circle after they had a snack and began explaining the lesson to them. She presented one lesson at a time and covered these 3 chapters from the MindUP curriculum, “How the Brain Works, Mindful Listening, and Perspective Taking.” Once she ended the lesson, she invited the children to return to work. The researcher was able to observe this process.

In environment 2, the researcher presented the EPL to students who demonstrated a need of engaging, focusing, and calming. The exercises included picking up and pushing in a chair, putting clothespins off and on, beading, pouring water from pitcher into cups and back, transferring water from one container to another with a sponge, dusting furniture, etc. Initially she observed the students as they were during their work period. When she started presenting the EPL to the students, she made reflective observation notes after leaving the classroom.

The participants were asked to fill out a BSSA (see Appendix F) regarding their feelings before and after each presentation. The participants in environment 3 were presented with the BSSA and asked to complete it at the end of the day. The BSSA asked the participants to reflect on their work habits and behaviors during the day especially in context with their feelings before and after the presentation of the MindUP strategy.

In environments 1 and 2, the BSSA was presented to the children by the researcher asking the questions verbally since the children were not yet reading independently. The children answered the questions to the best of their ability and circled the emojis based on how they felt before and after the presentation.

The children were asked to provide answers to the BSSA before and after each 30-minute presentation. A series of mindfulness activities were presented to the participants for a minimum
of 30 minutes each day. Children were challenged to focus on the task which included a presentation of the MindUP curriculum or a practical life exercise. Observations of the children’s behavior throughout the study were coded to identify behavioral changes. The researchers reviewed the BSSA and the parents’ pre- and post-assessments and coded the results based on the child and parent responses.

**Method Used to Analyze Data**

The mindfulness strategies were carried over a period of six weeks in three different environments. During this 4-6-week period, each teacher-researcher collected inquiry and observational data about the participants' ability to self-regulate. The data was collected using four tools designed to collect both qualitative and quantitative responses. The tools used were: the parent pre- and post-assessment, daily behavioral self-assessment, and daily observation tally sheet and field notes.

The parents completed pre- and post-assessment; these questionnaires collected qualitative and quantitative data from the parents of the students participating in this research. The pre-test data was analyzed to provide baseline measurements of the students’ self-regulation skills in several categories, including social-emotional skills and executive functioning skills (see Appendices B and C). Post-test data was analyzed in the same way to understand if there were any changes in children’s self-regulation skills at home after the intervention. The quantitative data in the questionnaires (taken from Likert measures) was analyzed to find the mean of each measure both pre- and post-test; a t-test assessed whether the pre-test and post-test measures were statistically different. The parents’ written (qualitative) responses were coded for consistent concepts or phrases/keywords that displayed any positive or negative changes in the student's self-regulation. Any positive change detected was categorized as “able to regulate.”
The daily tally sheets posed questions that helped the researcher to rate the students’ self-regulatory behaviors on a spectrum of yes, no or maybe after the implementation of the mindfulness activity. Students on task were rated “yes” and would consequently be categorized as “able to self-regulate.” Simultaneously, the researcher recorded observations in field notes about the students who were on task and off task. These observational notes were coded qualitatively based upon themes that resonate with either “able to regulate” or “not able to regulate.” Finally, field notes, taken contemporaneously with or shortly after the implementation of mindfulness activities, provide a rich source of qualitative data. The students’ own self-reflection data was analyzed for responses such as yes/no and smile/sad emojis to indicate whether or not they enjoyed the activity and if they felt it helped them regulate their behavior and remain focused on the task. Smile emoji along with yes responses were coded as “able to self-regulate” (1), whereas sad emoji/no were coded as “unable to self-regulate” (0).

The qualitative data - from the pre- and post-test questionnaires, the tally sheets, and the field notes were analyzed using Braun and Clarke’s (2006) thematic analysis. Their approach consisted of six phases. The first phase required getting to know the data and taking notes based on ideas. The second phase involved coding the data collected. Phases three, four, and five were geared towards finding themes based on the codes, reviewing them, and giving them a name to better define them. Phase six analyzed and correlated the data to the research question to produce a report.

**Report Findings/Analysis of Data**

The purpose of this study was to identify the effects of mindfulness-based approaches on primary and elementary aged children’s self-regulation skills. Students’ lack of self-regulation skills in school settings posed a need for interventions, such as MindUP and Exercises of Practical Life to support students in developing those skills. This research design was qualitative
and utilized assessments and observations to gather information about students’ previous and present self-regulation skills. Following are the findings.

A total of three classes were provided with an assessment on the first day of research beginning in the spring of 2019. A total of 38 parents responded to the pre and post assessment, and 38 students (24 male and 14 female) participated in the study for mindfulness intervention.

The table below (Table 1) provides the demographics of the sample collected from three different environments.

Table 1: Sample Demographics

<table>
<thead>
<tr>
<th>Grade Level</th>
<th>Males</th>
<th>Females</th>
</tr>
</thead>
<tbody>
<tr>
<td>USA Primary (Environment 1)</td>
<td>6</td>
<td>1</td>
</tr>
<tr>
<td>Pakistan Primary (Environment 2)</td>
<td>3</td>
<td>2</td>
</tr>
<tr>
<td>Canada Upper Elementary (Environment 3)</td>
<td>15</td>
<td>11</td>
</tr>
</tbody>
</table>

In our research we had two questions. The first question was to determine the level of self-regulatory skills of the students before, during, and after implementing the mindfulness practices. In order to address this question, the researchers provided the students’ parents with a pre-assessment including a series of open-ended questions providing a baseline to which post-assessment results could be compared. Other tools that were used by the researchers to assess student self-regulatory skills during daily work time/work period were the observational field notes and tally sheets, and the BSSA. The observations were focused on students’ demonstration or lack of inhibitory control, body management, and control of behavior and emotions during challenging situations, and the child’s ability to focus and complete their work. The final tool used to assess self-regulatory skills was the BSSA which asked the students if they disturbed their classmates and if they focused and completed their work.
The second question was to find how mindfulness affects self-regulation. We used data from the same four tools to address the second question. Identifying and comparing the parents’ responses to the pre- and post-test assessments helped the researchers determine the effects of mindfulness practices on students’ self-regulation skills. The parents recorded their answers on the form and the salient ideas were highlighted, coded, and counted. The researchers observed the students in areas of focus, attention, concentration, completing the cycle of activities, awareness of self, others, and surrounding, managing body, behavior, and emotions, and demonstrating inhibitory control. Students showed their self-evaluation through BSSA by reflecting on if they enjoyed the mindful activities, how the activities helped them, and how they felt afterwards.

**Data from the Parent Pre and Post-test Assessment**

The pre-/post-test assessments asked if there were situations in which the students become particularly excitable, upset, or frightened, and examples of those situations. Figure 1 shows the children’s reaction to being in unfamiliar situations.

![Reactions to Unfamiliar Situations](image)

*Figure 1. Pre and Post Parent Assessment Response to “Reactions to Unfamiliar Situations”*
The findings show that after the intervention, several students exhibited the ability to be calm. The children were also less frightened and/or refrained from dramatic/shut down/upset reactions. 19 out of 38 of the participants had no reaction to unfamiliar situations in the post-assessment.

The pre-post-test assessments asked parents how their child responded to stressful situations, such as crying, shutting down, moodiness, or using breathing techniques. As can be seen in Figure 2, below, the reaction to stressful situations were different pre- and post-assessment.

![Figure 2. Pre and Post Parent Assessment Response to “Reaction to Stressful Situations”](image)

After the implementation of mindful strategies, students showed a decrease in crying but an increase in their reaction of shutting down or not displaying reactions and acting moody in response to stressful situations. It was noted that 22 children out of 38 reacted with fright, upset, and dramatic shutdown pre-assessment, 24 children reacted with calm or no reaction at all post assessment.
Figure 3 shows the mindful strategies parents used and found to be effective in helping their children to manage their emotions during stressful situations. Prior to the intervention, the parents tried three mindful strategies to calm children during stressful situations: talking/consoling/calm down techniques, breathing exercises, and diverting the child’s attention. After the intervention, some parents continued to use talking/consoling/calming down while others began utilizing two new strategies: discussing the problem and finding solutions. Parents also stopped using the strategies of breathing exercises and diverting attention. It was noted that after the intervention there was an increase in the number of children who utilized discussing the problem and finding solutions as effective mindful strategies, compared to zero children before the intervention.

![Graph showing mindful strategies used and found effective](image)

*Figure 3. Pre and Post Parent Assessment Response “Mindful Strategies Used and Found Effective”*

Before the intervention, most parents responded on the pre-assessment that their children resorted to crying, yelling or blaming others in order to express their emotions. Figure 4 shows 18 parents answered “none” when asked if their child had the ability to regulate their emotions.
After the intervention, the parents noticed an increase in their child’s ability to regulate their emotions. Post intervention, 28 responded that their child could regulate their emotions by using strategies like deep breathing and/or accepting and talking about the situation, whereas 14 parents responded that their child exhibited strategies such as, colouring and knitting, and zero parents answered “none.”

![Ability to Utilize Strategies to Self-Regulate Before and After](image)

**Figure 4. Pre and Post Parent Assessment Response “Ability to Utilize Strategies to Self-regulate Before and After”**

**Data from the Observational Field Notes and Tally Sheets**

In addition to the pre- and post-test assessments, this study used the observations of the teacher-researchers as participant-observers, in order to identify which areas, the primary and elementary children exhibited a lack of self-regulation. During the intervention, the researchers filled out observational field notes and tally sheets to record the participants' ability to self-regulate. Each researcher recorded their observations and answered the statements on the tally sheet for each individual child. These statements included, “staying focused on the task, concentrating, self-aware, aware of others’ needs and feelings, managing body and emotions in
challenging situations, and demonstrating inhibitory control.” The tally sheet consisted of “yes”, “no” and “usually” or “maybe” responses to the statements. Figure 5 shows the observational field notes and tally sheet results from the first week of the intervention. During week 1, 55.4% of the participants were able to self-regulate. In addition, 37% were unable to self-regulate and 7.6% were sometimes able to or “maybe” able to self-regulate.

Figure 5. Observational Field Notes and Tally Sheets record “Students’ Ability to Self-Regulate after the Intervention” of Week 1

Figure 6 shows the observational field notes and tally sheet results from week 2 of the intervention. During week two, researchers noticed no significant increase in the amount of children who were able to regulate or manage themselves. There was a 5% increase in the students that could sometimes or “maybe” self-regulate.
Figure 6. Observational Field Notes and Tally Sheets record “Students’ Ability to Self-regulate after the Intervention” of Week 2

Figure 7 shows, the observational field notes and tally sheet results from week three of the intervention. In week three, the researchers observed 5% increase in the amount of children who were able to regulate or manage themselves, while there was a decrease in the participants that could not self-regulate and an increase in the ones that could sometimes or “maybe” self-regulate.
Figure 8 shows the observational field notes and tally sheet results from the final week of the intervention. Week four of the intervention presented the most progress in the children’s overall ability to self-regulate after the intervention. Almost two-thirds of the population demonstrated an ability to self-regulate. There was a 10% increase from week one to week four. The data showed 24% of the participants were still unable to self-regulate by the end of the intervention. In addition, 10.3% of the children were sometimes or “maybe” able to self-regulate after the intervention.
Data from the Student Behavioral Assessment

Finally, this study employed Behavioral Student Self-Assessment (BSSA) tool in order to identify the salient feelings and emotions of primary and elementary children associated with mindfulness training and activities. On the BSSA, the researchers inquired about mindfulness and self-regulation. The participants could circle “happy or sad” emoji responses or “yes or no” statements. Question one stated, “I feel ____ before mindful activity.” Question two stated, “I focused on my work.” Question three stated, “I completed my work.” Question four stated, “I did not disturb my classmates.” Question five stated, “I enjoyed doing the mindful activity today.” Question six stated, “I think mindfulness activities help me to: focus, be happy, calm.” Question seven stated, “I feel ____ after mindfulness.” The students recorded their answers on the paper and the answers were highlighted, coded, and counted.

Students were asked to reflect on how they felt before, during, and after the mindful activities and on their ability to self-regulate their behavior during the work period. The BSSA
covered seven questions. In the analysis below the researchers highlighted the most significant areas that showed an increase in the children’s ability to focus, self-regulate and improve their overall well-being in each week’s analysis that highlights the most significant data.

Figure 9 shows the children’s responses to the BSSA during week 1 of the intervention. In the first week of the intervention, 17 students found that they were unable to focus on their work. 21 students said they enjoyed the mindful activities, thought it helped them, and felt good afterwards.

![Behavioral Student Self-Assessment Week 1](image)

**Figure 9. Behavioral Student Self-Assessment on Self-regulation of Week 1**

Figure 10 shows the children’s responses to the BSSA during week two of the intervention. The researchers noticed an increase in the children’s ability to self-regulate on the BSSA for week 2. Compared to 14 in week 1, 26 participants were found to be able to focus on their work.
Figure 10. Behavioral Student Self-Assessment on Self-regulation of Week 2

Figure 11 shows the children’s responses to the BSSA during week three of the intervention. In week three, students showed an increase in their ability to self-regulate. After the first week of the intervention, 21 children responded feeling good after mindful activity. This number increased to 30 children after week three. During week three, 28 children responded that they were able to focus on their work.

Figure 11. Behavioral Student Self-Assessment on Self-regulation of Week 3
Figure 12 shows the children’s responses to the BSSA during the last week of the intervention. During the last week of research, there was an increase in the number of participants that believed all the statements to be true. Out of the 38 participants, 34 believed that mindfulness activities were enjoyable and they helped them to focus, be happy and remain calm. The results suggest that the majority of the participants believed they were able to self-regulate by the end of the intervention.

![Behavioral Student Self Assessment Week 4](image)

**Figure 12. Behavioral Student Self-Assessment on Self-regulation of Week 4**

**Data Conclusion**

In environment 1, the children were not exhibiting self-regulatory skills and were unable to concentrate on their tasks prior to the intervention. There was a need for a strategy that would aid in the children’s ability to manage their emotions and focus on their work. The MindUP curriculum resulted in a positive change in behavior within this group of children over the course of the study. The implementation of the three lessons within the MindUP curriculum resulted in majority of the participants’ ability to regulate their behaviors and demonstrate better
concentration and attention skills during the work cycle. The data revealed that there were fewer interruptions among the participants, which allowed the children who were working the opportunity to build their concentration. The data highlighted that children who were engaged in conflict were better able to regulate their emotions and behavior by using the techniques learned throughout the study.

In environment 2, the lack of self-regulation in work and behavior was also evident through teacher observation and pre and post assessment from the parents. As mindfulness techniques, the researcher placed greater emphasis on the daily use of the Exercises of Practical Life (EPL) as part of the Montessori curriculum and as the exercises to use when a child exhibits lack of inhibitory control, focus, concentration, and challenge in behavior. In addition to the daily use of EPL, any time students demonstrated disruptive behavior, lack of attention and concentration, and inability to complete tasks, they were invited to work on the EPL which often resulted in children feeling calmer, happier, and paying attention. After mindful EPL they could return to other activities with better self-regulation.

In environment 3, the researcher noted that the students were having difficulty paying attention, organizing, planning and prioritizing their tasks, and regulating their emotions. Based on the observations the researcher implemented MindUP curriculum. During the four weeks of implementation, the data indicated progression in the participants’ ability to self-regulate their emotions and behavior and focus on the task at hand. The data highlighted fewer instances of conflict among the students during recess and lunch as they were able to communicate their concerns to each other and resolve them. Another positive impact found (from the participants’ responses in the post assessments) students were able to use the breathing exercises to calm themselves and revert their attention back to their tasks.
To summarize, the data indicated positive impact on student self-regulatory skills during work blocks and interactions with peers. Despite some limitations, the study showed that mindfulness positively impacted self-regulation for the children.

**Limitations**

After analyzing the data produced by this study, the following limitations were recognized. The researchers concluded from their observations that in order to assess the effects of mindfulness on self-regulation more time could have been spent on implementing the interventions and recording their influences. The researchers' subjective perceptions and biases may have influenced their observations of the participants. This limitation could have been alleviated somewhat by allowing the researchers to build a repertoire with the children, resulting in more objective observations during the intervention.

There were some challenges using the behavioral student self-assessment (BSSA). By the end of the project, the Elementary students in environment 3 hurried through the self-assessment and did not necessarily provide a thorough reflection. The Primary students in environments 1 and 2 needed the questions to be read to them, most students said “yes” to almost all the questions.

Some prominent limitations in analyzing data were the non-authentic Montessori environments, including the Primary environments 1 and 2 that were not practicing Montessori methods or lacking the whole range of Montessori materials. Also, the lack of adequate teacher preparedness, professionalism, and modeling of mindfulness by the adults in the primary environments in the study were considered to be non-authentic Montessori environments. These environments were not consistent with the Montessori philosophy and method that fosters mindfulness development.
The research conducted in this paper separates itself from other researchers’ work because others used traditional classroom settings to study self-regulation, whereas we are conducting our research in three separate Montessori environments in three different countries. Our children have the opportunity to learn strategies to self-regulate in a non-traditional class setting. Just like a Montessori environment supports independence, our goal is to help the child become better equipped to self-regulate.

**Action Plan**

Although there were limitations in the study, the data results proved that implementation of mindfulness strategies had a significantly positive effect on student self-regulation in environment 3 and a slightly positive effect in environments 1 and 2. Given the findings of previous research concerning the importance of self-regulation across the lifespan, these positive findings point to the need for both further research and practical responses.

In terms of further research, this study had a number of variables. Firstly, this was an exploratory study, seeking to examine whether mindfulness interventions could promote self-regulation in primary and elementary aged Montessori students. Future studies could implement a longer duration and/or different variables that complement the MindUP and EPL strategies. It would be beneficial for others to consider the cultural, linguistic, and material differences for future studies. Furthermore, all three of the participating schools are programs of choice, as opposed to school districts/ catchment programs; the study did not capture sufficient demographic and family data to determine if and how the student population in the Montessori programs is statistically different from a broader pool of students in each location. Furthermore, the participant-observer role of the researchers differed, as the researchers had different roles (researcher vs. teacher/researcher) in the classrooms; future studies could account for data
collection and analysis differences and how they might have been reflected in the results. Changing design choices could mean broader generalizability.

If possible, a control group (perhaps classrooms that did not already use mindfulness interventions) would improve the pre-test/post-test assessments and help to determine whether the effects were due to the interventions, or something like the passage of time. Richer data collection would help to determine how representative the sample population is, which would help us determine how generalizable the results are beyond the context of, for example, wealthy students with well-educated parents. It would also allow us to explore the impact of such factors as culture and location to explore, for example, if and how the interventions are more successful in environment 3 than environment 1. Ideally, future research would have both control and experimental groups in both Montessori and typical classrooms, allowing us to examine the interaction between the mindfulness intervention and the unique aspects of a Montessori environment. Finally, in the future, we would collect and analyze more data about the positionality of the researchers so that we could capture the impact and significance of the different roles and levels of embeddedness of the teacher-researchers of their roles.

Despite these variables, the results of this study point to mindfulness interventions as an inexpensive, effective means of supporting and promoting the development of self-regulation skills in primary and elementary aged children. Given that, we intend to implement three practical strategies based on these results. First, after the effective implementation of the mindfulness intervention, we propose that it would be beneficial for the teacher to continue using the mindful strategies to support the development of the self-regulation skills as they are an essential key to a normalized learning environment. Second, we must prepare an authentic Montessori environment and model mindful behavior as it plays an important role in implementing this specific plan of action due to the adult presence and influence on the children.
Third, in order to successfully model mindfulness, the adults must continue to train themselves in mindful strategies and monitor their own self-regulation. By doing these three things, we believe a virtuous circle can be implemented where teachers both support and model mindfulness in an environment that is directly supportive of both mindfulness and self-regulation more broadly.

The researchers in all three environments propose to continue the mindfulness strategies in various ways. The researcher in the elementary classroom, environment 3, continues to use the MindUP strategies such as mindful breathing, and mindful music listening every day for fifteen minutes. This researcher notes a difference in the students’ ability to self-regulate after the fifteen minutes routine. The researcher will continue with the mindful strategies and MindUP lessons in the classroom hoping that the students will continue to practice them in school and other environments. Mindfulness will be a part of the daily routine as its importance is also embedded in the Montessori philosophy. Moreover, it will continue to support the transformation in the students and the Montessori guide.

The researcher environment 2 advocates the need to place emphasis the use of Montessori Exercises of Practical on regular and remedial basis. Global unprecedented increase in use of technology and decrease in self-regulation skills demands the need of going back to basic life skills and hands-on EPL. Children and adults using EPL on regular basis demonstrate mindfulness, increase in executive functioning, and self-regulation. The researcher proposes to use EPL daily as a proactive plan to prevent lack of mindfulness and self-regulation, and to use EPL as remedial exercises for those who demonstrate need to increase concentration, focus, patience, awareness and care of self, others, and the environment.

After noticing an increase in self-regulatory skills within environment 1 in the United States, the researcher will continue this work. The researcher will practice these strategies in an authentic prepared environment for a longer duration of time. It is beneficial to the children that
mindfulness become a part of the atmosphere within the classroom, practicing the MindUP strategies daily.

Although our study is a small, exploratory study, the results point to a relationship between mindfulness intervention and self-regulation in the Montessori classroom. Because self-regulation is essential to success both in the classroom and the broader world, any intervention that supports students in developing and improving their self-regulation is an important tool in the teacher’s tool box. Furthermore, mindfulness interventions can be both time and cost-effective, while also supporting the teachers in developing their own self-regulation and increasing their effectiveness. In short, this study points to a potentially powerful intervention to support student success.
References


Ballantine


Secondary References


Appendix A
Sample Passive Consent Form

Effects of Mindfulness Strategies on Student Self-regulation Skills
Parental Permission Form

January 7th, 2019

Dear Division __ Parents,

In addition to being your child’s classroom teacher, I am a St. Catherine University student pursuing a Masters of Education. As a capstone to my program, I need to complete an Action Research project. I am going to study the effects of mindfulness on students social and emotional development which includes controlling one’s behaviors and emotions. This is known as self-regulation. Self-regulation skills are important for academic achievement as well as social and emotional development.

In the coming weeks, I will be observing and assessing your child’s self-regulation skills by implementing mindfulness strategies as a regular part of my research. All students will participate as members of the class. In order to understand the outcomes, I plan to analyze the data obtained from pre and post parent assessment, tally sheet, observational field notes, and behavioral assessment. The results of this action research project during and following the mindful activities to determine how these strategies directly affect self-regulation. All strategies implemented and assessments given are part of normal educational practice.

The purpose of this letter is to notify you of this research and to allow you the opportunity to exclude your child’s results/data from my study.

If you decide you want your child’s data to be in my study, you don’t need to do anything at this point.

If you decide you do NOT want your child’s data included in my study, please note that on this form below and return it by January 14th, 2019. Note that your child will still participate in the action research but his/her data will not be included in my analysis.

In order to help you make an informed decision, please note the following:

- I am working with a faculty member at St. Kate’s and a project coach to complete this particular project.
- The potential benefits of this study include academic achievement and social and emotional development as well as contributing to the larger body of educational research. There are no foreseeable risks included in this study.
- I will be writing about the results that I get from this research. However, none of the writing that I do will include the name of this school, the names of any students, or any references that would make it possible to identify outcomes connected to a particular student. Other people will not know if your child is in my study.
- The final report of my study will be electronically available online at the St. Catherine University library. The goal of sharing my research study is to help other teachers who are also trying to improve their teaching practices.

- There is no penalty for not having your child’s data involved in the study, I will simply delete his or her responses from my data set. Your decision of whether or not to allow use your child’s data will have no impact on your relationship with the school or any of the teachers involved in the research.

If you have any questions, please feel free to contact me, Monika Sood, at masood334@stkate.edu or msood@sd38.bc.ca You may ask questions now, or if you have any questions later, you can ask me, or my project coach Syneva Barrett, at snbarrett@stkate.edu, who will be happy to answer them. If you have questions or concerns regarding the study and would like to talk to someone other than the researcher(s), you may also contact Dr. John Schmitt, Chair of the St. Catherine University Institutional Review Board, at (651) 690-7739.

You may keep a copy of this form for your records.

Name:_______ Date: January 7th, 2018

OPT-OUT: Parents, in order to exclude your child’s data from the study, please sign and return by January 14th, 2018.

I do NOT want my child’s data to be included in this study.

_________________________________________ Date ____________________________
Signature of Parent
Appendix B
Sample of “Pre-Project Parent Assessment”

Please note: Not all items will necessarily apply to all students. If the question(s) are not applicable to you and/or your child, please mark “N/A or not applicable.”

1. What activities do you and your child do together? Please check all that apply.

- Playing sports
- Walks
- Reading
- Computer Games
- Watching TV
- Preparing Meals
- Having Meals together
- Playground time
- Setting the table
- Laundry
- Others

2. What group experiences has your child had outside of school. What were the child’s reactions? Please check all that apply.

<table>
<thead>
<tr>
<th>Activity</th>
<th>Enjoyed it a lot</th>
<th>Enjoyed it a little</th>
<th>Neutral</th>
<th>Did not enjoy it</th>
</tr>
</thead>
<tbody>
<tr>
<td>Before/after school care</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Swimming</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Music lessons</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Organized sports</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Private Tutoring</td>
<td></td>
<td></td>
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<td></td>
</tr>
<tr>
<td>Ballet/skating</td>
<td></td>
<td></td>
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<td></td>
</tr>
<tr>
<td>Other</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
3. Are there situations in which your child becomes particularly excitable, upset, or frightened? If so, what are they?

4. When your child is upset or anxious, how do they react?

5. What strategies have you used and found to be effective in such situations?

6. Is your child able to regulate their emotions? If so, how?

7. Consider each of these attributes in relation to your child. Please circle a number on the scale of 1 - 5 (1 = never, 2 = rarely, 3 = sometimes, 4 = often, 5 = always) that accurately represents your child.
   - Personally takes ownership at home: 1 2 3 4 5
   - Socially is interactive and a team player: 1 2 3 4 5
   - Academically is responsible towards his/her work: 1 2 3 4 5
   - Physically is active and willing to participate: 1 2 3 4 5
   - Any other attributes: __________________________ 1 2 3 4 5

8. Is your child able to complete the responsibilities assigned? Or does he/she need a reminder? Please check all that apply.

<table>
<thead>
<tr>
<th></th>
<th>completes the assigned responsibility without any reminders</th>
<th>needs one reminder to complete the responsibility</th>
<th>completes after several reminders</th>
<th>completes if a reward is given</th>
<th>completes if a consequence is given</th>
<th>doesn't complete</th>
<th>doesn't assign</th>
<th>not assigned</th>
</tr>
</thead>
<tbody>
<tr>
<td>Packs lunch and snack</td>
<td></td>
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<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>N/A</td>
</tr>
<tr>
<td>Activity</td>
<td></td>
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<tr>
<td>Gets dressed</td>
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<td></td>
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<tr>
<td>Makes his/her bed</td>
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<tr>
<td>Packs bag</td>
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<tr>
<td>Completes homework/daily reading</td>
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<tr>
<td>Helps in the household chores</td>
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<tr>
<td>Setting the table</td>
<td></td>
<td></td>
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<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Other</td>
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<td></td>
</tr>
</tbody>
</table>
Appendix C
Sample of “Post-Project Parent Assessment”

**Please note:** Not all items will necessarily apply to all students. If the question(s) are not applicable to you and/or your child, please mark “N/A or not applicable.”

1. What activities do you and your child do together? Please check all that apply.

<table>
<thead>
<tr>
<th>Activity</th>
<th>Enjoyed it a lot</th>
<th>Enjoyed it a little</th>
<th>Neutral</th>
<th>Did not enjoy it</th>
</tr>
</thead>
<tbody>
<tr>
<td>Playing sports</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Walks</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Reading</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Computer Games</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Watching TV</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Preparing Meals</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Having Meals together</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Playground time</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Setting the table</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Laundry</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Others</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

2. In the last six weeks, which experiences has your child had outside of school? What were their reactions? Please check all that apply.
3. As a result of practicing mindful activities, in the last six weeks, have you noticed your child managing their feeling particularly differently such as excitable, upset, or frightened?

4. When your child is upset or anxious, how do they react?

5. What strategies have you used and found to be effective in such situations?

6. In the last six weeks, have you noticed your child using mindful skills to manage their emotions? Describe the situation and the strategies used.

7. In the last six weeks, have you noticed anytime that your child could not control their emotions? Describe the situation and the child's reaction.

6. Consider each of these attributes in relation to your child. Please circle a number on the scale of 1 - 5 (1 = never, 2 = rarely, 3 = sometimes, 4 = often, 5 = always) that accurately represents your child.
   Personally takes ownership at home: _____________________________ 1 2 3 4 5
   Socially is interactive and a team player: _______________________ 1 2 3 4 5
   Academically is responsible towards his/her work: _______________ 1 2 3 4 5
   Physically is active and willing to participate: _________________ 1 2 3 4 5
   Any other attributes: ___________________________________________ 1 2 3 4 5

7. Is your child able to complete the responsibilities assigned? Or does he/she need a reminder? Please check all that apply.

<table>
<thead>
<tr>
<th></th>
<th>completes the assigned responsibility without any reminders</th>
<th>needs one reminder to complete the responsibility</th>
<th>completes after several reminders</th>
<th>completes if a reward is given</th>
<th>completes if a consequence is given</th>
<th>doesn't complete</th>
<th>doesn't assigned</th>
</tr>
</thead>
<tbody>
<tr>
<td>completes the assigned</td>
<td></td>
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<tr>
<td>responsibility without</td>
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<tr>
<td>any reminders</td>
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</tr>
<tr>
<td>Task</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
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<td></td>
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<td>------------------------------------------</td>
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<td>---</td>
<td>---</td>
<td>---</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Packs lunch and snack</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Gets dressed</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Makes his/her bed</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Packs bag</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Completes homework/daily reading</td>
<td></td>
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</tr>
<tr>
<td>Helps in the household chores</td>
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<tr>
<td>other</td>
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</tr>
</tbody>
</table>

**Disclaimer:** If the questions are not applicable to you please mark “N/A or not applicable”.
Appendix D
Sample of “Observational Field Notes and Observational Tally Sheet:”

<table>
<thead>
<tr>
<th>Student Pseudonym: __________________</th>
<th>Age: _____________</th>
<th>Date: ______________</th>
</tr>
</thead>
</table>

<table>
<thead>
<tr>
<th></th>
<th>M</th>
<th>T</th>
<th>W</th>
<th>Th</th>
<th>F</th>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td>Staying focused on task:</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Paying attention on task:</td>
<td></td>
<td></td>
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<td></td>
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<tr>
<td>Concentrating:</td>
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<td></td>
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<tr>
<td>Completing cycle of activity:</td>
<td></td>
<td></td>
<td></td>
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<td></td>
<td></td>
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<tr>
<td>Self-aware:</td>
<td></td>
<td></td>
<td></td>
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<td></td>
<td></td>
</tr>
<tr>
<td>Aware of others' needs and feelings:</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Aware of surroundings:</td>
<td></td>
<td></td>
<td></td>
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<td></td>
<td></td>
</tr>
<tr>
<td>Managing behavior (interactions) with others in a challenging situation:</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Managing body in a challenging situation:</td>
<td></td>
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<td></td>
<td></td>
</tr>
<tr>
<td>Managing emotions in a challenging situation:</td>
<td></td>
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<td></td>
</tr>
<tr>
<td>Demonstrating Inhibitory Control:</td>
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</tr>
</tbody>
</table>

Notes:

Key: Y (yes); N (no); U (usually)
Appendix E
Sample of “Behavioral Student Self-Assessment”

<table>
<thead>
<tr>
<th>Behavioral Student Self-Assessment</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Name:</strong></td>
</tr>
<tr>
<td>I feel _____ before mindful activity</td>
</tr>
<tr>
<td>I focused on my work</td>
</tr>
<tr>
<td>I completed my work</td>
</tr>
<tr>
<td>I did not disturb my classmates</td>
</tr>
<tr>
<td>I enjoyed doing mindful activity today</td>
</tr>
<tr>
<td>I think mindfulness activities help me to: 🎖️ focus, 🎖️ be happy, 🎖️ calm, other</td>
</tr>
<tr>
<td>I feel _____ after mindfulness</td>
</tr>
</tbody>
</table>

**Thank you for your participation**
Monika, Saboohl, & Kandace
St. Catherine’s University