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The Effects of Mindful Yoga Instruction on Participants' Academic Stamina and Self-Regulation in a Kindergarten Classroom

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The Effects of Mindful Yoga Instruction on Participants' Academic Stamina and Self-Regulation
in a Kindergarten Classroom

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A Capstone Project submitted in partial fulfillment of the
requirements for the Master of Science Degree in Education at
Winona State University

Summer, 2021

Winona State University
College of Education
Rochester Education Department

CERTIFICATE OF APPROVAL

CAPSTONE PROJECT

The Effects of Mindful Yoga Instruction on Participants' Academic Stamina and Self-Regulation
in a Kindergarten Classroom

This is to certify that the Capstone Project of

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Has been approved by the faculty advisor and REDG 618 – Action Research: Capstone Project

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Abstract

This study consisted of 15 participants in a kindergarten classroom. Participants were involved in an intervention where they participated in mindful yoga instruction. Mindful yoga instruction refers to the concentration on the present moment in time (Germer, 2004) and consisting of yoga poses that involve stretching in combination with the inhalation and exhalation of the breath (Field, 2011). The yoga instruction was given to participants for ten minutes a day, every day, for a four-week long duration. This intervention was given by the classroom teacher (researcher) and was conducted before participants' whole-group math lesson. The data collected reflects the impact that mindful yoga instruction had on participants' academic stamina (or focus) during whole-group math instruction, emotional self-regulation, and overall emotional well-being. The data tools were designed to reflect the amount of growth in participants' academic stamina, the reflection participants had on their own self-regulation, focus, and emotional well-being, and teacher anecdotal notes on participants' self-regulation during the given lesson.

Key Words: Academic stamina, emotional wellness, hybrid, mindfulness, self-regulation, yoga

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The Effects of Mindful Yoga Instruction on Participants' Academic Stamina and Self-Regulation in a Kindergarten Classroom

The topical focus of this research was how mindful yoga instruction impacts the participants' academic stamina or focus, their self-regulation skills, and overall emotional wellbeing. This study took place in a kindergarten classroom in an urban school district in the Midwest of the United States of America. Participants were facing the experience of attending kindergarten during the year of 2020-2021 in the midst of the COVID-19 pandemic. Amongst the pandemic, changes in learning models were taking place. In the fall of 2020, when participants started the kindergarten school year, the district had decided on a *hybrid* learning model in which participants would come to school to participate in face-to-face learning for two days and three days they would be at home distance-learning. The classes were divided into group one and group two. Group one attended school on Monday and Tuesday for face-to-face learning and group two attended school on Thursday and Friday, the other three days that participants were not present for face-to-face learning, they were at home distance-learning. In November of 2020, the district decided to transition to distance-learning for all public school participants. Participants returned to the hybrid model in February of 2021. In March of 2021, the district transitioned to full face-to-face learning, in which participants would resume to learning in the classroom with their entire class for a five-day school week.

Rationale

An observation that was made by the researcher (classroom teacher) prior to the start of this study was that participants were struggling to focus for prolonged periods of time during academic instruction. This inspired the topic for this research. Distance-learning provides participants with the ability to learn on their own time in an uncontrolled learning environment.

Participants may be inattentive during times when they are online and are able to take breaks when it is convenient or desirable for them (Hwang and Yang, 2009). Due to this, participants had not been accustomed to a full-length (five-day) school week in participating in whole-group and time-specific scheduled classroom instruction. The goal of this study was to increase productivity during whole-group math instruction by implementing an intervention that would positively impact student focus and regulation skills during academic learning times. In this mixed-methods study, the researcher implemented mindful-yoga instruction during the school day to investigate the impacts and influence that it had on kindergarten aged participants. The areas of student learning and wellness that are being reviewed and assessed in this process are academic stamina, emotional wellness, and self-regulation.

Defined Terms

Mindfulness can be defined as “a skill that allows us to be less reactive to what is happening in the moment.” and “to wake up, to recognize what is happening in the present moment.” (Germer, 2004, p. 24). In this data analysis, being mindful refers to the presence of focusing on what is happening around us and how we feel in the present moment. This practice of mindfulness will be in relation to the practice of *yoga*. There are many definitions of *yoga*, many of them stemming from the origin of the practice in Hinduism. *Yoga* can be described in a modern context as a practice that consists of a combination of stretching in connection to the breath (Field, 2011). During this study, the instruction of mindful yoga will reference a combination of strategies learned for participants to focus on the present moment in time as well as utilizing yoga poses that are connected to deep breathing. The goal of this intervention of

mindful yoga practice is to improve participants' ability to focus (academic stamina), improve emotional wellness, and self-regulate.

Throughout the transitions that participants have had to make, the researcher noticed a change in participants' *academic stamina*. The Merriam-Webster dictionary defines stamina as "the bodily or mental capacity to sustain a prolonged stressful effort or activity" (2021). In this described research *academic stamina* will refer to the participants' ability to participate in academic activities and instruction for a prolonged period of time. In this specific trial, the academic period of time that was looked at took place during the participants' mathematics whole-group instruction. This instructional time took place in the afternoon of the school day.

Emotional wellness includes the understanding of problem-solving skills, one's own emotions, relationships, having a sense of self-worth, and behaviors in response to emotions (Page, 2003). Throughout this study, participants reflected on their own emotional wellness in response to the mindful yoga instruction. Emotional wellness and emotional intelligence include identifying and understanding the emotions of one's self and other people (Dusenberry and Weissberg, 2017). For the duration of this study, the data that was collected consisted of inquiring participants of their understanding of the emotions that they, individually, are experiencing in response to the yoga intervention took place.

Dusenberry and Weissberg explain in *Social and Emotional Learning in Elementary: Preparation for Success*, that executive functions can help participants develop *self-regulation*. Participants being able to focus on a task, ignore distractions, and change their attention from one activity to another are all examples of executive functions. Activities and interventions that focus on breathing can improve participants' self-regulation (2017). *Self-regulation* can be

defined as “the ability to monitor and manage your energy states, emotions, thoughts, and behaviors in ways that are acceptable and produce positive results such as well-being, loving relationships, and learning.” (Your Therapy Source, 2020, para. 1).

Studies have shown that yoga and mindfulness practices not only impact physical health but also mental health and emotional wellness. Yoga can reduce stress and anxiety, improve awareness of one’s surroundings, as well as affect self-regulation skills (Nanthakumar, 2017). *Mindfulness* can be described as “maintaining a moment-by-moment awareness of our thoughts, feelings, bodily sensations, and our environment, through a gentle, nurturing lens” (Greater Good Magazine, 2021). Being mindful, is to focus on the present moment that is being experienced.

Purpose of the Study

The purpose of this study was to analyze and reflect on how mindful yoga instruction impacts participants’ emotional well-being and self-regulation skills as well as their focus and attention during academic periods during the school day. This study specifically looked at the impact that mindful yoga instruction had on kindergarten aged participants. This research was divided into these three research questions;

1. How does mindful yoga instruction affect participants’ self-regulation in a kindergarten classroom?
2. How does mindful yoga instruction affect participants’ academic stamina in a kindergarten classroom?
3. How does mindful yoga instruction affect participants’ emotional well-being in a kindergarten classroom?

In summary, mindful yoga instruction is a combination of focusing on the present and decreasing reactivity responses (Germer, 2004), stretching, and breathing exercises (Field, 2011). The goal of this study was to reflect on how this direct instruction of yoga had impacted the kindergarten age participants in regards to their academic stamina, self-regulation, and emotional wellbeing. Participants in this research were transitioning from distance-learning formats to full-time face-to-face instruction due to the COVID-19 pandemic. The rationale for this study was to observe helpful ways to help the participants in their transition back to full-time school days amongst their peers.

Review of Literature

Introduction

Research findings suggested that in the United States, over 940 schools are currently including a yoga practice in their instruction (Butzer, Ebert, Telles, & Khalsa, 2015). A majority of these programs deliver yoga instruction to participants in kindergarten all the way through 12th grade. *Yoga* is defined as a practice that “typically combines stretching exercises and different poses with deep breathing and meditation.” (Field, 2011). Yoga came to America in the 1800s from West India, and because of the ties of yoga practice to spiritual Hinduism beliefs, assumptions about the practice had been made (Douglass, 2007). Yoga began as a meditative practice, today in western society, yoga has become a practice that incorporates connecting the breath to one’s physical movement. In recent years, mindfulness and yoga have found a grounding in the field of education. The benefits that have been found include assisting participants in self-regulation with their emotions, sensory-awareness, decreasing student stress

and anxiety, and reduction of social-emotional and behavior problems (Serwacki and Cooke-Cottone, 2012).

In the book, *Mindfulness and Yoga in Schools*, the importance of giving participants lifelong skills to regulate their emotions and have control over their bodies and attention is discussed (Cook-Cottone, 2017). The author introduces these concerns as follows, “Still we ask our participants over and over to pay attention, do their work, and try. We teach the math, reading, science, art, social studies, and music. Yet we [do not] always teach them how to cope with the stress they are feeling as they walk into school, handle the frustration they experience when they do try, or pay attention in the first place.” (Cook-Cottone, 2017, p. xii). Education, when combining social-emotional learning in addition to academics, fosters participants to become responsible, respectful, and kind adults. Learning is social and collaborative, for participants to excel and become successful in the future, they need to begin to understand social-emotional skills to utilize in the present and future (Schonert-Reichl, 2007)

Theoretical Framework

The Montessori Method is the theoretical framework that best guides my research study. The American Montessori Society describes the findings of Dr. Maria Montessori as follows, “The Montessori Method fosters rigorous, self-motivated growth for children and adolescents in all areas of their development—cognitive, emotional, social, and physical” (American Montessori Society, 2021-a, para. 3). Montessori’s work focused on the child as a whole and emphasized that the work of education should do the same. Life tasks need to be met in today’s society by students being able to control and regulate their emotions, impulses, and desire for immediate results (Moffitt, 2011). In Montessori’s eyes students should be able to drive their

own learning and productivity. Students should be able to have a strong sense of who they are and build strong connections with others (American Montessori Society, 2021-b). Montessori was an advocate for peace and having a positive framework around the word ‘peace’. She encouraged positive and peaceful change in the world around her. Positive self-improvement, developing values, and allowing children to live up to their full potential were important to Dr. Maria Montessori and these reflected in her teaching and actions. Many Montessori schools today continue to strive for and achieve peaceful education (Baligadoo, 2014).

In Montessori schools, students are directed towards and participate in education that focuses on building life-skills. Sensory awareness allows students to be conscious of their self and their environment to focus in on tasks that are in front of them and on the present moment. Many Montessori pre-schools teach students these self-awareness skills through implementing mindfulness interventions (Montessori Academy, 2019).

Dr. Maria Montessori believed in the power of observation. Observing the children in which one teaches and cares for, provides the knowledge of where children are at. Observation is a tool to utilize in discovering what children’s needs are and to reflect on how to support and meet those needs (Mooney, 2013). In addition to observation being affective in understanding where children are at and what they need, observation can also give further information about the progress that is being made in response to any interventions or changes in instruction that are being made.

Research Findings

While the research that has been conducted on yoga-based instruction in the classroom has been limited, there has been research that shows the impact that mindful yoga practice has

made inside the classroom on student wellness. One study by Jarraya, Wagner, Jarraya, and Engel (2019), implemented a 12-week intervention yoga-instruction with kindergarten aged participants. This intervention found that yoga had a positive impact on participants' hyperactivity and inattention behavior. The data that was collected had been conducted by utilizing the ADHD (attention deficit hyperactivity disorder) Rating Scale-IV. Participants, following the 12-week yoga intervention, were observed to have been able to pay attention for longer increments of time during academic instruction and work than they were able to prior to participating in the yoga instruction.

Another study, focused on participants between the ages of four and six (Rashedi, Wajanakunakorn, & Hu, 2019). This study took a participant-directed approach by collecting qualitative data through the process of interviewing each participant on the impact that the yoga-practice had on them. The results found that participants were able to verbally express the ways that they had benefited from the yoga practice. A common theme across the participants' answers were that participants had gained self-regulation skills. Another theme was that the participants had emotions that were positive about their experience they had during the yoga practice.

One quantitative analysis took place with 71 third and fourth grade participants. This study utilized a program called Yoga for Kids. This was an eight-week long study where participants participated in yoga intervention ten minutes a day for five days a week. The benefits that were found during this analysis were greatly positive and encouraging. These benefits included a decrease in student anxiety and an increase in academic performance. The yoga practiced improved participants' self-awareness and ability to regulate their own emotions

(Shreve, Scott, McNeill, & Washburn, 2020). The health of the mind is just as important and valuable as physical health. The benefit of having a positive mental health attitude encompasses focus on daily tasks, comfort in social scenarios, control of self-behavior and reactivity, and the understanding of emotions (Chopra, 2019). Movement not only improves physical health but also provides benefit to a healthy mind as well.

A school in the state of Vermont took an approach to look at the school's classroom management and the behaviors that were occurring. School teachers and faculty recognized that children had begun coming to school in the morning with challenging behaviors. Classroom management is important in creating a safe and supportive environment in the classroom and so the school was searching for a solution as to how to further support students and decrease behaviors. This school began to implement yoga practice and mindfulness into their daily routines inside their kindergarten classrooms. Yoga provided participants with the opportunity to slow down, relax, and breathe. This contributed to a peaceful atmosphere in the kindergarten classrooms. The yoga instruction was given during the classroom's morning meetings but was also mentioned by a teacher that these could be imbedded into curriculum as well to make connections with the content that is being taught. The movement that the yoga provided supported the participants in giving them breaks during the day, a time to refocus and calm their bodies (Thomas, 2008).

Yoga and mindfulness are skills and strategies that participants can not only utilize now, in the present, but as they get older as well. Often times we hear about adults practicing yoga as a way to benefit their physical or mental health. At a Title One school, a third grade teacher found herself doing just this, practicing yoga in her personal life to deal with stress, worries, anxiety,

and as a form of self-care and to recharge. She began to realize the personal benefits that she was experiencing could possibly also impact her participants if they did yoga as well. The impacts of implementing yoga instruction in the classroom included improved focus and attention, fewer aggressive interactions between participants, improved self-esteem, and higher productivity during instructional periods of time. Benefits of yoga were reflected in both the teacher as well as the participants (Williamson, 2012).

In a study in America, the benefits of yoga across a wide age range also showed positive results. Participants from the ages of 6-17 participated in a study that focused on yoga instruction and the impact that it has on emotions. This study worked with a large number of children and adolescents from a variety of diverse backgrounds. The results showed that participants had increased and promoted emotional awareness as well as happiness in the children and adolescents in this study. The impact of the benefits of yoga instruction expands across participants' ages, cultures, genders, socioeconomic status, and identity (Pandya, 2018).

Zones of Regulation

The Zones of Regulation (Table 1) refers to a social-emotional curriculum that teaches students how to identify, understand, and regulate their emotions. The Zones of Regulation are taught to students through the use of associating emotions with “color zones” (Day, 2020). Participants of this study were taught color zones at the beginning of the year through the use of the picture book *The Color Monster* (Llenas, 2012). This story teaches emotions through a monster character that is shown in a variety of colors throughout the story. The first zone is the color green. This zone is associated with the feelings of calm and relaxation. Yellow is another color zone that is described in the story. This colored monster represents happiness. The third

color zone is blue, which shows sadness, feelings of uneasiness, and loneliness. The color red represents being upset, angered, frustrated, and agitated. Another color monster that participants will also refer to is the one that appears as grey or black, this one is fearful, scared, nervous, and anxious. These colored zones are displayed in the classroom for participants to refer to in order to assist them with describing the feelings and emotions that they are feeling in that moment. This further helps them understand what emotion they are feeling as they associate it with the “color monsters”. This is a tool that will be referred to during the study as participants describe their emotions in response to the yoga instruction that is being implemented.

Table 1

Zones of Regulation Utilizing The Color Monster by Anna Llenas (2012)

Color Zone	Emotions Associated
Green	Calm, Peaceful, Relaxed
Yellow	Happy, Joyful, Excited
Blue	Sad, Disappointed, Upset
Red	Angry, Frustrated, Mad
Grey	Anxious, Worried, Scared
Pink	Loved, Grateful, Comfort

Social-Emotional Learning Curriculum (SEL)

At the location of this study, the social-emotional curriculum that is implemented is *Second Step*. Second Step is a curriculum that is provided for students in kindergarten through fifth grade. This curriculum provides lessons, multimedia visuals for students, and activities.

Second Step provides students with instruction on building social-emotional and learning skills (Second Step, 2021). In the first part of the school year, Second Step provided participants of this study with skills to listen and focus during instructional times. The four indicators for quality listening skills are explained to participants as “Eyes Watching”, “Ears Listening”, “Voice Quiet”, and “Body Calm”. These indicators will provide cues for participant focus and attention during this study and will be referred to throughout this research in reference for how participants are focusing.

Another element and concept that is taught to participants through Second Step instruction is the skill and strategies to calm down and regulate emotions. This “calm down” strategy includes three steps. The first is to “stop”, participants learn to pause before they react to the feelings that they are experiencing. Next, participants name their emotions, this is tied in with the Zones of Regulation that I teach my participants. Participants will use the zones to name their emotion that they are currently feeling. The final step is to take a “belly breath”, this is where participants take in a deep breath through their nose, hold for a few seconds, and then breathe out through their mouth (Second Step, 2021). Yoga instruction, as defined previously, incorporates movement with the breath (Field, 2011). Pausing for even a few minutes throughout the day to name the feeling that one is experiencing, and breathing through it, provides the opportunity to feel that emotion and then being able to let it go and continue on with the day. Mindful yoga instruction allows participants to have a break throughout the day to experience any emotions that they are feeling and then to continue with their day (Chopra, 2019).

The research shows that there have been impacts by implementing mindfulness and yoga instruction in academic settings. The focus on mindfulness was shown through Montessori’s

theoretical framework and her beliefs (Montessori Academy, 2019). These beliefs are now implemented in Montessori schools across the nation. In this research study, participants have the background knowledge in understanding emotions and how to communicate those through the Zones of Regulation and Second Step Curriculum (Second Step, 2021). These will be referenced throughout the study to reflect on how mindful yoga instruction impacts this group of participants in the classroom.

Methods

Participants and Background

This research study took place at an urban school in the Midwestern part of the United States. The intervention was put into place in a kindergarten classroom where participants ranged from five to six years old. There were 15 participants in this study. The racial demographics of this classroom consists of three participants who are Asian Pacific-Americans, one student who is Hispanic, one African-American student, and 10 participants who are white. The class has eight boys and seven girls. There was one participant who had Emotional Behavioral Disorder, due to this there may be times when this student was outside of the classroom to receive special education services. If this student was pulled during the time of the intervention, his data was not included in that day.

This intervention occurred during the 2020-2021 school year during the COVID-19 pandemic. Participants had undergone a year of several learning model changes. Prior to the beginning of the mindful yoga instruction, participants had been in fulltime in-person learning for three full weeks. Due to the COVID-19 pandemic, participants all wore masks, had their own individual yoga mat, and had space in between themselves and their peers. For the purpose

and respect of confidentiality, participants will remain anonymous. Participants will be referred to by a given number when student interactions or responses are being described or reported.

Research Questions

The purpose of the study was to implement mindful yoga instruction in a kindergarten classroom to improve participants' academic stamina and give them additional tools to understand how they can self-regulate their emotions and improve their overall emotional well-being. The purpose of this study can be answered through the following research questions;

1. How does mindful yoga instruction affect participants' self-regulation in a kindergarten classroom?
2. How does mindful yoga instruction affect participants' academic stamina during whole-group math instruction in a kindergarten classroom?
3. How does mindful yoga instruction affect participants' emotional wellness in a kindergarten classroom?

Researcher Role Statement

The role of the researcher was the lead classroom teacher of the kindergarten participants that were involved in this study. The researcher had found interest in the concepts of mindfulness and social emotional learning in her professional teaching career. The researcher was curious about the impacts that mindful yoga instruction has on participants in the time-period of the COVID-19 global pandemic. The researcher noticed and observed challenges that participants were facing through the multiple transitions in learning models such as their lack of focus and ability to regulate their own bodies and emotions during instructional times. The intent of this study was to implement a new strategy based off of observational assessments that

reflected participants' current needs. The researcher had built strong relationships with each of the participants that were present in her classroom for this research. Kindergarten participants each have individual needs that are needed to be met during instructional time and due to the nature of the classroom climate, the researcher was doing multiple responsibilities at once. These responsibilities included managing behaviors, giving academic modifications and accommodations to participants, providing participants with individual support, and documenting behaviors and actions of specific participants in addition to the data collection that was being conducted for the research. The researcher was a first year teacher conducting the research throughout a time of stress and uncertainty during the COVID-19 pandemic. This experience included individual participants being quarantined and transitioning to distance learning while this research was being conducted.

The teacher (researcher) understands that their personal connection towards the participants and passion about this topic may be impactful on the research. The researcher understands and is aware of their biases of the participants, setting, and content of the data and study. The goal of the researcher is to implement strategies and interventions that are in the best interest of her participants. Any subjectivity or biases that may impact the research will be reflected on throughout the report of this study.

Instructional Timeline & Procedures

This intervention took place in a kindergarten classroom in the afternoon prior to whole-group math instruction. The reasoning for implementing yoga instruction in the afternoon was made through informal classroom observations. The researcher noticed that this was a time during the school day where participants' focus began to decrease. Prior to beginning the yoga intervention, participants were introduced to the concept of yoga through children's books that

were read aloud. These stories included *Dinosaur Yoga* by Mariam Gates (2019), *Calm Ninja* by Mary Nhin (2020), and *I am Peace* by Susan Verde (2017).

Participants were provided with yoga instruction for 10 minutes each day. The yoga lessons consisted of a calming breathing or mindfulness activity along with a few poses. The curriculum that was utilized was *Classroom Yoga* written by Giselle Shardlow (2020). Since this curriculum text is a sixteen-week scope and sequence, it was used as a resource for visuals, poses, and mindfulness activities to be adapted and modified for this four-week intervention.

Limitations towards this study included a small number of participants. The data that is collected will be from a total of fifteen participants. One student who receives special education services may be absent at some point during the lesson or may be receiving individual support from a paraprofessional. In this case, the student's data will either not be included (if absent) or it will be noted that the data was not an independent result. Another limitation of this study is a result of current events due to the COVID-19 pandemic. Participants were required to wear masks and therefore, yoga poses did not consist of enduring or demanding poses of physical activity. The yoga instruction's purpose was to be mindful and calming rather than one of exertion. Throughout the yoga intervention participants may have decided not to participate during the yoga block or opted out of specific poses. And finally, during this four-week period there were participants that were absent for extended periods of time due to taking part in distance learning at home. Throughout the time frames that these participants were absent from school, their data was not able to be collected.

Data Collection and Tools

The data that was being triangulated (Table 2) delivered results of how mindful yoga instruction impacted participants' academic stamina, self-regulation skills, and emotional wellbeing. The data collection tools that were utilized were surveys, interview questions, exit tickets, and observation anecdotal notes and tallies. This was a mixed-methods study in which both qualitative and quantitative data results were measured. The variety of data collection tools reflect evidence to the research questions of this study. All of the data collection tools were student focused and centered, specific tools gave insight into participants being self-reflective of their emotions and behaviors, while others were observed by the researcher.

Participants were given a pre and post survey with questions about self-regulation (Appendix A). The goal for this data tool was to give the survey to participants before the intervention and after to compare different skills and techniques to self-regulate that participants had gained throughout the course of the mindful yoga instruction. These surveys asked participants specific questions on how participants self-regulate in certain situations or when they have a specific emotion. The surveys were multiple choice with visuals of different strategies and skills that participants could choose from. A focus group of six participants was randomly selected to be interviewed at the end of the intervention process. These interview questions (Appendix B) were created with the purpose for participants to reflect on questions about how they self-regulate and how they found the yoga instruction to help them with focusing and self-regulation skills. The final data tool for analyzing participants' self-regulation was recorded through tallies. Participants' disruptive behaviors were recorded throughout the math instruction to study how participants applied self-regulation skills in real time during instruction. This observational data was collected through a documentation form (Appendix C) each day.

Disruptive behaviors that are recorded can be described as behaviors or actions that may distract other participants from learning. Disruptions that are recorded are marked with a tally along with anecdotal notes of the action or behavior that was observed by the research. Examples of disruptions include arguing with the teacher or other participants, verbal outbursts during inappropriate times, and making sounds with materials at the student’s workspace.

Table 2

Triangulation Matrix

Research Questions	Data Tool A	Data Tool B	Data Tool C
Q1- How does mindful yoga instruction affect participants’ self-regulation in a kindergarten classroom?	Student pre/post survey with self-regulation questions	Interview with focus group of participants	Tallies of classroom disruptions during the lesson
Q2- How does mindful yoga instruction affect participants’ academic stamina during whole-group math instruction?	Exit ticket, student reflection on focus	Interview with focus group of participants	Observations of participants, document how many are focused during time increments
Q3- How does mindful yoga instruction affect participants’ emotional wellness?	Student exit ticket (how do you feel? After yoga, complete once a week)	Interview with focus group of participants	Student survey (at the end of the Yoga Unit)

Timeline of Research

Prior to the intervention of mindful yoga instruction different data tools were utilized to collect baseline data. The researcher collected anecdotal notes on observations that were made on participants’ disruptive behaviors. Tallies were also documented of how many participants were focused during the whole-group math instruction after five-minute time increments. In addition to these data tools, participants were also asked to complete a self-reflection (Appendix

D) on their ability to focus during the lesson, following the *Second Step* (2021) listening skills. These data collection tools will also be used during the intervention as a way to compare and contrast the research that was gathered. Participants were asked to complete a pre-survey, answering questions on strategies that they use when self-regulating and retaining focus. This survey asked participants about situations when they were feeling a specific emotion and what they would do in response to that emotion.

Throughout the mindful yoga intervention, daily anecdotal notes were documented of observations that were made by the researcher of disruptive behaviors that were made by the participants during the whole-group math instruction. For each disruption, a tally was marked to keep track of the total number of disruptions during that lesson. The researcher also put down a tally for each student that was not focused during the lesson. The number of participants that were inattentive was marked every 5 minutes throughout the lesson.

Participants filled out a self-reflection on their ability to focus during the day's given math lesson two days a week. This was in the form of an exit ticket in which participants complete after their math work before transitioning to the next activity. Once a week, participants filled out an exit ticket (Appendix E) after their mindful yoga instruction to communicate how they felt after completing the yoga. They filled this form out before the class transitioned into the math instruction for the day.

At the end of the four-week intervention, participants were given a post survey that was similar to the pre-survey that they took at the beginning of the intervention period. Participants answered questions that pertained to self-regulation and emotional wellness, they chose a strategy that best reflected how they would regulate their emotions in certain situations. A focus

group of participants was randomly selected to answer interview questions that focused around what benefits and skills they had retained from the yoga practice. These questions also asked participants to elaborate on how yoga improved their emotional-wellbeing, self-regulation skills, and ability to focus during learning time. The intent of this interview was to further understand the participants' perspective of the intervention and have participants be able to elaborate on their answers in their own words.

Results

Introduction

Data was collected to determine if mindful yoga instruction impacted participants' academic stamina and social-emotional wellness in a kindergarten classroom. Several data collection tools were used to assess participants' academic stamina, emotional wellness, and self-regulation skills. The tools used to collect data on these areas were: a self-reflection exit ticket, a pre and post student survey, interviews with selected focus students, a self-reflection exit ticket on emotions, daily anecdotal observational notes, and documentation of tallies for student focus and disruptions. The results section answers the three sub-questions posed by this study: how does mindful yoga instruction affect participants' self-regulation, academic stamina, and emotional wellness in a kindergarten classroom? For the results, academic stamina was defined the participants' ability to participate in academic activities and instruction for a prolonged period of time.; self-regulation was defined "the ability to monitor and manage your energy states, emotions, thoughts, and behaviors in ways that are acceptable and produce positive results such as well-being, loving relationships, and learning." (Your Therapy Source, 2020, para. 1); emotional wellness was defined by the understanding of problem-solving skills, one's own

emotions, relationships, having a sense of self-worth, and behaviors in response to emotions (Page, 2003).

How does mindful yoga instruction affect participants' self-regulation in a kindergarten classroom?

Participants' ability to self-regulate their emotions was reflected in three different data tools; participants took a pre and post survey on what skills they use when they are feeling specific emotions, a small focus group of participants was randomly selected to answer questions in a verbal interview, and the researcher documented tallies for the number of disruptions during mathematics lessons along with writing anecdotal notes and observations of participants. The time-frame in which participants were observed in their ability to self-regulate emotions was during math instructional time. Participants were asked to reflect on their self-regulation skills during instructional time after the intervention was finished through the post-survey and interview questions.

Pre and Post Survey

Participants answered the pre-survey (Appendix A) questions by being asked one-on-one by a paraprofessional in the classroom. The questions and answers were read to each participant individually and they would be able to verbally respond with their answer or point to it. This survey was given prior to the start of the mindful yoga intervention. Participants were then also given a post-survey at the end of the four-week long intervention by. The post-survey was given individually to participants by the classroom teacher (researcher). The pre and post-survey included questions that focused on academic stamina, emotional wellness, and self-regulation.

For this section of the study, the data that applies towards participants’ self-regulation skills will be the data that is observed.

Participants were asked the question “When I am in the “red zone”, what do I do?” This is referring to the Zones of Regulation, color zones that participants associate with specific emotions (Day, 2020). In our classroom the “red zone” references the feelings of anger or madness. The answer options and number of participant responses for each is given below (Table 3). In the post-survey the numbers of participants increased for two of the responses; using a breathing or calm down strategy, and focusing on how my body and heart feels. These two strategies were specific skills that were focused on throughout the mindful yoga intervention. Participants who took a break as their main strategy to regulate their emotions shifted to the other two areas previously stated, gaining an additional strategy that was taught throughout the yoga instruction.

Table 3

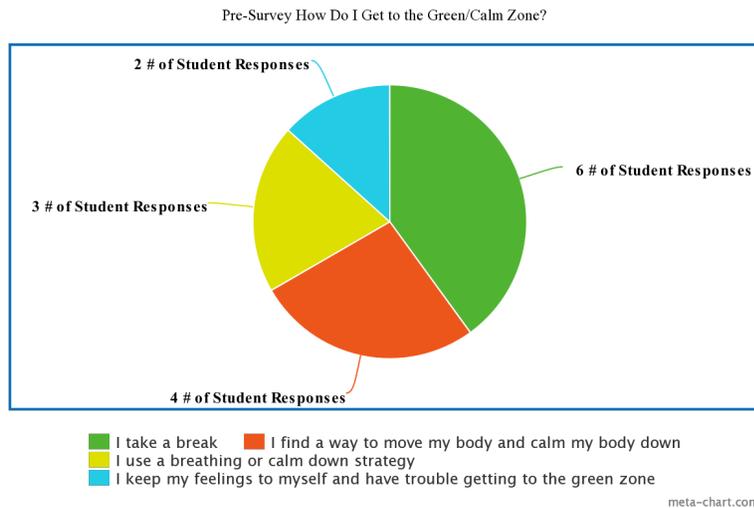
“When I am in the “red zone”, what do I do?”

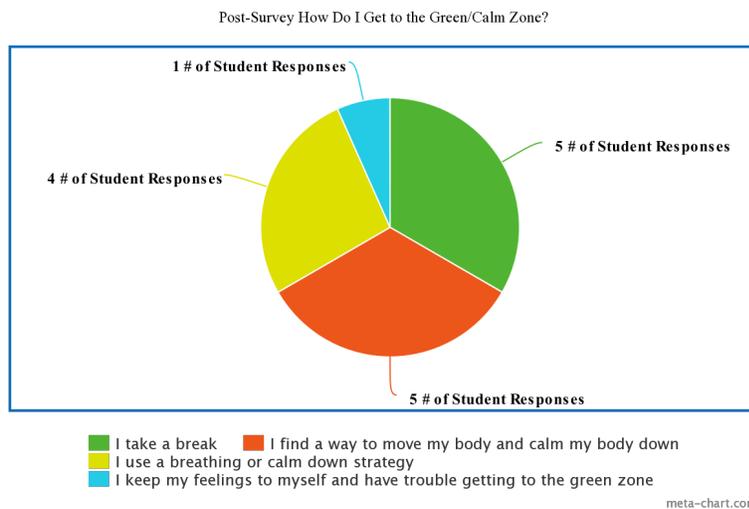
Survey	I take a break	I use a breathing or calm down strategy	I focus on how my body and heart feels	I have angry thoughts and don’t know how to control them
Pre-Survey	10	4	1	0
Post-Survey	7	6	2	0

Another question that was asked to participants in the pre and post-survey was “How do I get to the green/calm zone?”. In Figure 1 below, pre-survey and post-survey responses that were given are displayed. After the intervention, in the post-survey, the number of participant responses in utilizing a calm down or breathing strategy and finding a way to move the body and calm the body down had increased. The number of participants who responded with “I keep my feelings to myself and have trouble getting to the green zone” decreased between the pre and post-survey.

Figure 1

Pre-Survey and Post-Survey: How Do I Get to the Green/Calm Zone?





Interview

The question that focused on self-regulation within the interview was, “Does yoga help you feel in control of your body? How?” The interview was conducted individually with five separate, randomly selected participants at the end of the duration of the intervention. Participant A responded to this question by explaining, “Yes, since I’m doing yoga my body is relaxed and I don’t focus on things that make me feel frustrated.” Another participant elaborated on why he felt like yoga helped him feel in control of his body by stating “it’s basically a time when I can stretch my body. It’s during the time of day I feel like I need to stretch.” Each participant responded to the question with “yes”, some participants expanded on their answer while others found it difficult to put their answer into words.

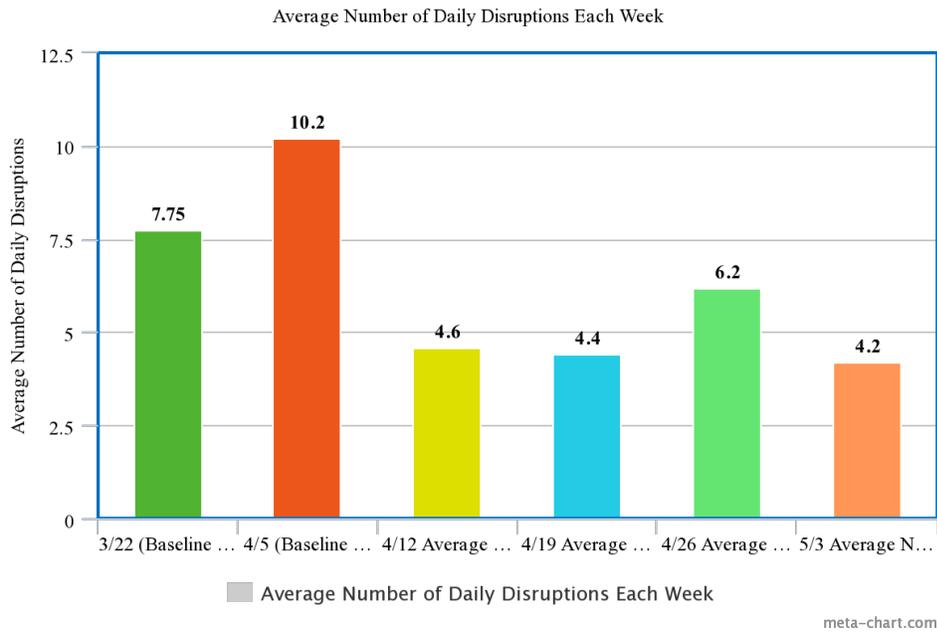
Tally Documentation and Anecdotal Notes

Participant control and self-regulation of emotions and their actions was observed throughout the math instruction after the yoga intervention each day (Appendix C). The average amount of daily disruptions each week was calculated and is displayed below (Figure 2).

Disruptions included participants; talking out of turn, interrupting others, making distracting sounds on their water bottles or desks, and needing to take a break at the designated “take a break” station in the classroom. Figure 2, in the graph, the first two bars in the graph show the baseline data that was collected prior to the intervention beginning. The graph reflects that there was a decrease in the average number of daily disruptions at the beginning of the intervention. The average number of disruptions remained consistent throughout the conduction of the intervention.

Figure 2

Average Number of Daily Disruptions Each Week Bar Graph



How Does Mindful Yoga Instruction Affect Participants' Academic Stamina During Whole Group Math Instruction?

Directly following the mindful yoga instruction, participants' academic stamina was assessed during whole-group math instruction through three different data collection tools. These tools consisted of a self-reflection exit ticket that was completed directly after participants' math lesson, interview question(s) for a randomly selected focus group of participants, and the documentation of tallies to interpret the amount of participants that were not showing focus through the Second Step focus skills (Second Step, 2021) during five minute increments.

Student Self-Reflection Focus Exit Ticket

Participants completed the exit ticket two days out of five days of the week (Appendix D). Participants reflected on their ability to use the focus following focus skills during that day's math lesson; eyes watching, voice quiet, ears listening, and body calm (Second Step, 2021). The data for each exit tickets is shown below (Table 4).

Table 4

Week's Date	Number of Students Focused				Students Present
	Eyes Watching	Voice Quiet	Ears Listening	Body Calm	
3/22	13	14	14	14	15

(Baseline)

3/25	11	11	12	13	13
(Baseline)					
4/8	13	13	15	14	15
(Baseline)					
4/14	10	13	12	11	13
4/16	13	10	13	13	13
4.20	9	10	11	11	13
4/22	11	10	12	11	13
4/27	15	12	14	13	15
4/30	14	11	14	11	15
5/4	13	13	14	12	15
5/6	13	14	14	14	15

Interview

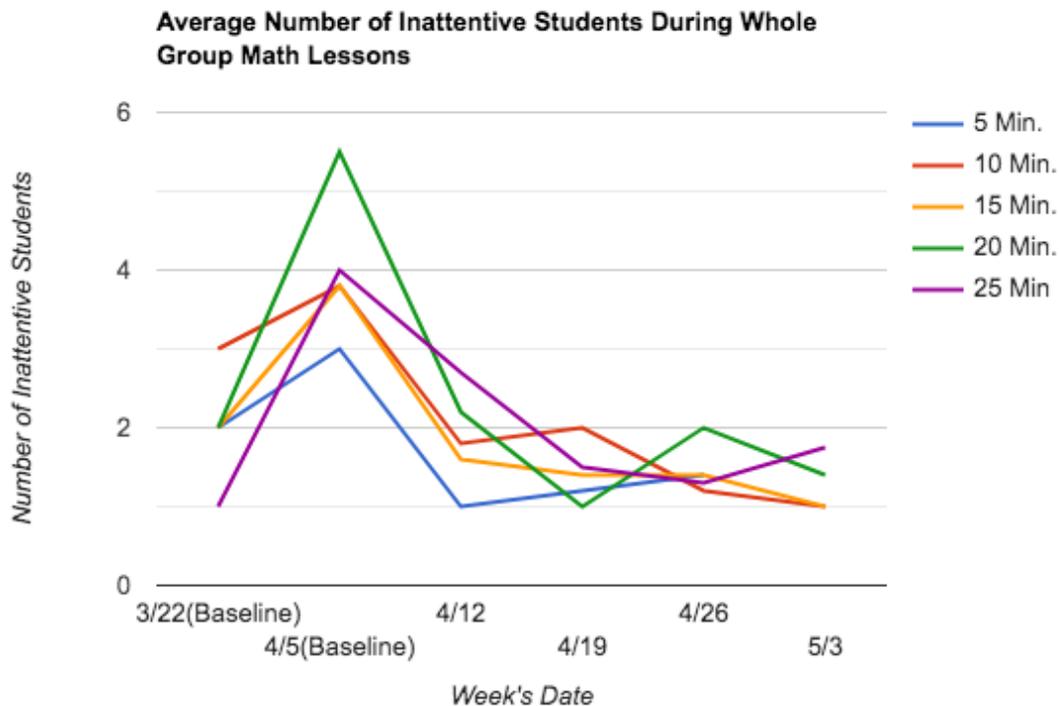
The question in the interview that reflected participants' academic stamina was "Does yoga help you stay more focused during math time? Why or why not?" One participant in this study answered by saying, "Yes, because it makes me feel calm and because [during yoga] I focus on the teacher while we do yoga, so then I also focus on the teacher during math." Each of the five focus participants responded with "yes" to the question that was asked. Another participant elaborated on his answer by stating "it makes me more calm so I can focus better [on learning]."

Tally Documentation

Throughout daily math lessons, the researcher recorded the amount of participants that were not showing listening skills every five minutes throughout the lesson (Appendix C). Each week the average number of participants, every five minutes, was calculated. In Figure 3, the baseline and intervention data is included within the graph. The week that the intervention began, April 12th, a decrease in the amount of inattentive participants is shown. While there are days that show another increase in inattentive participants throughout the duration of the intervention, the amount is still lower than the amount of inattentive participants during the baseline data prior to the beginning of the intervention.

Figure 3

Average Number of Inattentive Students During Whole Group Math Lessons



How Does Mindful Yoga Instruction Affect Participants’ Emotional Wellness?

Participants’ emotional wellness in relation to yoga was assessed through three different data collection tools; a feelings self-reflection exit ticket (Appendix E), interview questions given to a focus group of participants, and questions found within the post survey (Appendix A). Participants communicated their emotions through using color zones (Day, 2020). For further information on the emotions associated with each color zone refer back to Table 1.

Feelings Exit Ticket

On the feelings self-reflection exit ticket (Appendix E), participants were able to circle one, two, or three color zones that they were experiencing directly after yoga instruction. Participants completed the exit ticket one day during the week. Participant responses are shown below (Table 5). A majority of participant responses reflected that participants were in the green (calm), yellow (happy), and pink (loved) zones.

Table 5

Feelings Exit Ticket

Date	Green	Yellow	Blue	Red	Grey	Pink
4/15	10	13	1	1	0	4
4/19	12	14	3	1	1	6
4/26	11	13	1	2	0	7
5/3	9	12	0	1	2	5

Interview

Focus participants in the study were asked “How do you feel when you do yoga?” and “How do you feel after yoga?” Many participants responded with the words “happy” and “calm” to these questions. One participant responded with the word “exercised” to describe how he felt after yoga. Another participant stated that they were “tired but calm” after completing yoga. Participants in the focus group were also asked “What is your favorite part of yoga?” The responses that were received were positive, with participants claiming statements like, “The whole thing! I love yoga!”, “stretching my body out”, and “doing resting pose”.

Post Survey

In the post survey, each kindergarten participant was asked to complete the statement, “Yoga makes me feel...” (Appendix A). During this question, nine participants responded that they felt happy and six participants responded by saying that yoga makes them feel calm. No participants said that they feel sad or mad in response to yoga.

Conclusion

Throughout the data collection process the researcher was able to reflect on the research questions that were previously stated. The researcher was able to gather information from participants and observe the impacts that the mindful yoga intervention had on the kindergarten aged participants. These findings, along with a reflection on the research study as a collective experience will be discussed in the following section of this research paper.

Discussion

In recent years, yoga practices have found a place within over 940 public schools in the United States of America (Butzer, Ebert, Telles, & Khalsa, 2015). Results from utilizing yoga instruction in schools show that yoga assists participants in self-regulation with their emotions, sensory-awareness, decreasing student stress and anxiety, and reduction of social-emotional and behavior problems (Serwacki and Cooke-Cottone, 2012). After reviewing research of the benefits in yoga in schools, I decided to implement yoga instruction in response to observations made of the students in my classroom, on their decrease in academic stamina and self-regulation skills. The purpose of the study was to implement mindful yoga instruction in a kindergarten classroom to improve participants' academic stamina and give them additional tools to understand how they can self-regulate their emotions and improve their overall emotional well-being. Participants participated in yoga for about ten minutes a day for a duration of four-weeks. The intervention took place in the afternoon of their school day prior to their whole-group math instruction. The results of this study were answered through the following research questions;

1. How does mindful yoga instruction affect participants' self-regulation in a kindergarten classroom?
2. How does mindful yoga instruction affect participants' academic stamina during whole-group math instruction in a kindergarten classroom?
3. How does mindful yoga instruction affect participants' emotional wellness in a kindergarten classroom?

The data collected to reflect the impact that mindful yoga had on self-regulation for the kindergarten participants show that a small number of participants gained new strategies to

regulate their emotions such as using a breathing or calm down strategy, focusing on how their body feels, and stretching or moving their body. These strategies were all discussed and taught during the yoga instruction. The amount of disruptions that occurred during math instructional time also decreased after the start of intervention. I believe that this is an indication of the participants being able to regulate their emotions and use self-control to wait patiently (decrease in participants blurting or interrupting) during the math lesson, as well as have further self-control and regulation over their bodies.

Participants' academic stamina improved. I was able to reflect from the average number of participants' that showed inattentive behaviors each week decreased significantly from the two weeks of data collected prior to the start of the yoga intervention. Participants were able to maintain focus for longer periods of time after completing yoga instruction. One thing, that I would choose to do differently would be to discuss the importance of how to understand when you, yourself, are focused along with the value of answering honestly. The self-reflection scores were inconsistent (Appendix D). Some days, there were many students who reflected on their behaviors as attentive and other days many students reflected on themselves being inattentive even if they were showing the listening skills that were displayed on the exit ticket. I also think that, due to the professional teacher-student relationship that I held with each student (participant), that the data that was collected that required a student direct response was inaccurate as participants may not have been as honest. If I were to do this study again, I would have had another person in the room collecting the information, whom participants did not hold as strong of a relationship with.

Overall, I believe that each of the participants in my kindergarten classroom enjoyed the mindful yoga instruction that was given to them. Many of the participants throughout the day would be excited for yoga when they saw it on the daily schedule. They would also cheer with excitement when they were told to get out their yoga mats. The observations that I had made throughout the day when talking to participants about yoga and the data that was collected, show that participants love and appreciation of yoga, caused an improvement in their emotional wellness. Participants described how they felt in relation to yoga with the words “calm” and “happy” in both the focus group interviews and the post-survey.

This study has impacted my teaching practice by allowing me to reflect on and try strategies that I used within my classroom and yoga instruction that helped some of the participants grow in areas of self-regulation, academic stamina, and emotional wellness. These areas of growth created a greater passion to continue fostering mindful practice into my future classrooms. If I were to do this study again, I would prepare a longer duration of time to do this, have more participants, and I would ask for a volunteer that is not normally in the classroom to collect data that involves participant interaction such as exit tickets, surveys, and interviews. I would also like to do further, more extensive research on a greater variety of mindfulness and yoga curriculum instruction to see which of these the participants enjoyed more.

In conclusion, I believe that the mindful yoga instruction that I implemented into my classroom was beneficial. The intervention may have been more beneficial for some participants rather than others. Each participant enjoyed the yoga instruction that was given. Mindful yoga instruction impacted my classroom and the kindergarten participants in a positive way in regards to their self-regulation skills, academic stamina, and emotional wellness.

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Appendix A

Data Collection Survey Questions

Pre-Survey

Question	Response Options
<i>When I am in the “red zone” what do I do?</i>	<ol style="list-style-type: none"> 1. I take a break 2. I use a breathing or calm down strategy 3. I focus on how my body and heart feels 4. I have angry thoughts and I don’t know how to control them
<i>When something is hard for me, what do I do?</i>	<ol style="list-style-type: none"> 1. I give up or become frustrated 2. I think of a way to solve the problem 3. I use positive self-talk 4. I ask for help right away
<i>What strategy do I use when I am having trouble focusing?</i>	<ol style="list-style-type: none"> 1. I take a break and then continue to work 2. I become distracted by people or things around me 3. I move my body or stretch to try and focus better
<i>How do I get to the “green” or calm zone?</i>	<ol style="list-style-type: none"> 1. I use a breathing or calm down strategy 2. I take a break 3. I find a way to move my body and calm my body down 4. I keep my feelings to myself and have trouble getting to the green zone

Post-Survey

Question	Response Options
<i>When I am in the “red zone” what do I do?</i>	<ol style="list-style-type: none"> 1. I take a break 2. I use a breathing or calm down strategy 3. I focus on how my body and heart feels 4. I have angry thoughts and I don’t know how to control them
<i>When something is hard for me, what do I do?</i>	<ol style="list-style-type: none"> 1. I give up or become frustrated 2. I think of a way to solve the problem 3. I use positive self-talk 4. I ask for help right away
<i>What strategy do I use when I am having trouble focusing?</i>	<ol style="list-style-type: none"> 1. I take a break and then continue to work 2. I become distracted by people or things around me 3. I move my body or stretch to try and focus better
<i>How do I get to the “green” or calm zone?</i>	<ol style="list-style-type: none"> 1. I use a breathing or calm down strategy 2. I take a break 3. I find a way to move my body and calm my body down 4. I keep my feelings to myself and have trouble getting to the green zone
<i>Yoga helps me focus on what my body is doing</i>	<ol style="list-style-type: none"> 1. Agree 2. Disagree
<i>Yoga makes me feel</i>	<ol style="list-style-type: none"> 1. Calm 2. Silly

	<ol style="list-style-type: none">3. Happy4. Sad5. Mad6. Other
--	---

Appendix B

Interview Questions Asked

1. How do you feel when you do yoga?
2. How do you feel after yoga?
3. Does yoga help you stay more focused during math time? Why or why not?
4. Does yoga help you feel in control of your body? How?
5. What is your favorite part of yoga?

Appendix C

Observational Data Collection Tool

Mindful Yoga Intervention Documentation Form

Date:

# of Disruptions (Tallies)	
# of Disruptions	
Disruptive Behaviors Observed	

Participants **Not** Demonstrating Focus Skills

- Ears Listening
- Eyes Watching
- Body Calm
- Voice Quiet

Time	Tallies	Total Number
5 Minutes		
10 Minutes		
15 Minutes		
20 Minutes		
25 Minutes		

Appendix D

Focus Student Self-Reflection

During today's lesson was I using...



Appendix E

Emotional Wellness Exit Ticket

After our break today, I am in the...

Green Zone

Blue Zone

Grey Zone

Yellow Zone

Red Zone

Pink Zone