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Calming Station: Mindfulness Breathing Techniques and Yogic Stretches to Promote Self- Regulation

Anna Olson
cb6489pv@go.minnstate.edu

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Calming Station: Mindfulness Breathing Techniques and Yogic Stretches to Promote Self-
Regulation

Anna Olson

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

Spring/Summer 2021

Winona State University
College of Education
Rochester Education Department

CERTIFICATE OF APPROVAL

CAPSTONE PROJECT

Calming Station: Mindfulness Breathing Techniques and Yogic Stretches to Promote Self-Regulation.

This is to certify that the Capstone Project of


Anna Olson

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

Course Instructor in partial fulfillment of the requirements for the

Master of Science Degree in Education

Capstone Project Supervisor:



Approval Date: _____

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Abstract

Self-regulation is a life skill that is universal. Everyone has a different level of regulation. Amongst the many different strategies for self-regulation, mindfulness breathing and yogic stretches have substantial amount of positive data based on adults. Mindfulness is an idea that has been explore more and more in a school setting with children. There have been different mindfulness curriculum made to incorporate into a classroom setting. Yoga is also a term that has been used more in schools to help regulate both adults and children. This study is designed to investigate if mindfulness breathing and yogic stretches help promote self-regulation in third grade students.

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Calming Station: Mindfulness Breathing techniques and Yogic Stretches to promote Self-Regulation

Introduction

Self-regulation is a skill that everyone has in one way or another. Everyone has a different level of regulation or calm. There are many different strategies used to self-regulate emotions. Some of these strategies include mindfulness breathing and yogic stretches. This study will be taken place in a span over six weeks in a city in Minnesota that has more than 15 schools within their district. The school that this is being taken place at is a Title 1 community school. A school's Title 1 designation indicates that over 40 percent of the school's population has qualified for free and/or reduced-priced lunch at school. Community school designations means that the school has certain partnerships with resources throughout the community with a focus on academic, social, and health resources to help build a stronger community. Within the classroom that this study is being taken place, there are 25 participants total. Three of these participants have an emotional behavior disability, one of them is on the Autism spectrum, and six participants have a learning disability. These statistics do not include other participants who are experiencing other stressors or trauma, either at home or at school. One stressor that all of the participants participating in this study have experienced throughout the year is the many changes in learning models throughout the 2020-2021 school year. They have experienced a hybrid learning model, a distance learning model, and a full in-person learning model due to the global pandemic as a result of COVID-19 outbreak.

Rationale

In the past few years there has been a push for more social emotional learning in the district that this study is taken place. This includes identifying emotions, strategies to cope with different emotions, and analyzing different social situations and how to model and implement them. The researcher had noticed some participants who struggled coping with “big emotions” or regulating their emotions in the classroom. One strategy that the researcher believed would benefit these participants is a space that provided strategies for participants to regulate their emotions. That is when the calming station came into play in this third grade classroom.

Purpose of Study

This study is designed to investigate self-regulation with the impact of a calming station that promotes mindfulness techniques and yogic stretches on student engagement in a third grade classroom. Self-regulation is the ability to identify and control one’s emotions, thoughts, and behaviors and being able to regulate them on their own using their own strategies (Schunk, D., 2005). The purpose of this study is to have children be able to identify and have an awareness of their emotions. After they are able to do that, they have the ability to control and regulate them if they have the right tools to do so. This includes mindfulness breathing and yogic stretches. Mindfulness is the awareness of within or around oneself. In this case, we will be focusing on the mindfulness of our emotions and behaviors and using different breathing strategies to regulate the different emotions. The idea of yogic stretches is that it is calming of the mind and body though different types of breathing and stretches.

Research Questions

This study was designated to answer three different research questions. 1.) Does mindfulness breathing help promote self-regulation? 2.) Do yogic stretches help promote self-regulation? 3.) What method is the preferred method for self-regulation: mindfulness breathing or yogic stretches? To answer these questions, data was collected in one of three ways: interviews, observations, and a survey. The interviews will be conducted before, during, and after implementation of the study and the interviews will be used as a pre and post assessment of student's knowledge of self-regulation. Interviews will also be used to check in with the participants to answer question three of which method is preferred. Observations will be used by the conductor of the study to observe the student's behaviors and emotions before and after entering the station. The survey will be a student based survey, where they will complete the survey themselves before exiting the station.

Definitions

This study is centered around three main ideas. The first idea is self-regulation. Self-regulation defined as the process of identifying and controlling your body's emotions and using different strategies to regulate them (Schunk, D., 2005). The second idea of this study is mindfulness. Mindfulness is "a quality of focused attention on the present moment accompanied by a non-judgmental stance" (Lillard, A., p. 78). In this case for this study, we will be focusing on the mindfulness of our emotions and behaviors. The third idea of this study is the idea of yoga and yogic stretches. Yoga is the idea of calming the mind and body through different kinds of breathing and stretches (White, L, 2008). In this study, we will be using both mindfulness breathing strategies and yogic stretches to see if these ideas lead to self-regulation in school-aged children.

Limitations

One limitation this study has seen has been due to the global pandemic that has been occurring as a result of COVID-19. Throughout the study, there were over 5 participants who had been quarantined due to symptoms related to COVID or close exposure to COVID. Times of their quarantine varied depending on their situation. If they had COVID like symptoms, they could either take a test or quarantine for 10-14 days if they chose not to test. If they did test, they could return upon a negative result. This will mean that the data for those participants will potentially be skewed. There was also a two-day period where the person conducting the study was gone due to these COVID protocols. The observations from those two days will be missed. Another limitation that was seen was also due to the pandemic and that has to do with the sanitation protocols the schools district had in place. The station had to be cleaned in between each student's use. This caused some participants who claimed to have needed the station to wait or use self-regulation skills somewhere other than the station, potentially not getting the true data.

Participants face many different stressors, as stated before. Some have different stressors at school, some have different stressors at home, some have both, but we all have experienced the stressors of the global pandemic throughout this school year. The goal for this study is for participants to be able to walk away from this six weeks of implementation with a strategy that works for them to help regulate their emotions and behaviors on their own. Whether that is in a school setting or in a different setting. My hypothesis is after implementing the calming station for six weeks is that the calming station including both mindfulness breathing and yogic stretches will help lead to self-regulation in the participants. Both mindfulness and active brain breaks

have been studied in the past on adults and children, but this study has put both of them together to see the impact on third grade participants.

Literature Review

Theoretical Findings

Before students are ready to grasp the academic concepts in the day, their other needs, physical and psychological, need to be met. Maslow's Hierarchy of Needs is where we can go to check to see if these needs are being met. The different needs in the diagram below consists of: physiological needs, safety needs, belongingness and love needs, esteem needs, and self-actualization needs (McLeod, 2018). Physiological needs are the basic physical needs one needs to survive. This includes water, food, shelter, and sleep. Safety needs are the needs in that one feels safe and secure. Belongingness and love needs are shown in the relationships one builds. Esteem needs are the feeling of successfulness and accomplishment. Lastly, at the top of the pyramid is self-actualization. This is the needs of self-fulfillment and one reaching their true potential. The psychological needs (belongingness and love needs and esteem needs) and the self-fulfillment needs (self-actualization) are what is going to be the main focus for this project.

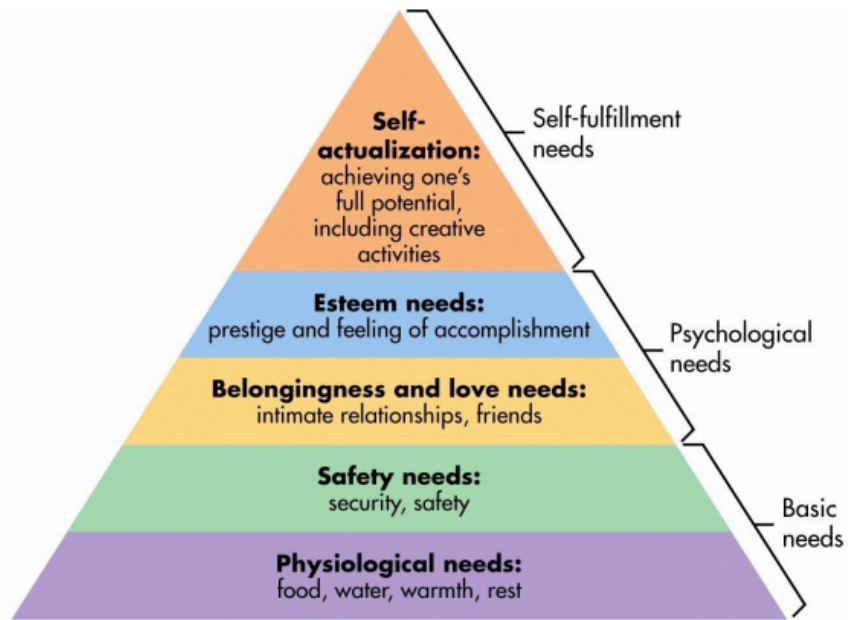


Figure 1

Looking closer at the psychological and self-fulfillment needs, we are going to start with belongingness and love needs. This level of needs is after the safety and security needs are met. “The needs for relationships motivates behavior” (McLeod, 2018, p. 4). This is the level of receiving, accepting, and giving love. This also is the level where trust is earned, built, and lost. After the third level is met in some form, the esteem needs can be met. “Maslow classified [this level] into two categories: esteem for oneself and the desire of reputation or respect from others” (McLeod, 2018, p. 4). This is the level where one starts to feel what their dignity is. Their self-consciousness from their high or low self-esteem guides their thinking and their actions. One with high self-esteem may feel more comfortable doing more things, while one with low self-esteem may not think they are capable of certain tasks. After the self-esteem needs are met, the next and final level is the self-actualization needs. Within this level, one is “realizing personal potential, self-fulfillment, seeking personal growth and peak experience” (McLeod, 2018, p. 4). This is the final phase because all of the other needs have been met in one or more forms and

then one can begin to start their growth process. This is personal, emotional, and academic growth.

One thing to keep in mind about these levels is that “the order of needs is not rigid, but instead may be flexible based on external circumstances or individual experiences” (McLeod, 2018, p. 6). Every person is different and their needs are different, as well. One person may come in with all of their basic needs being met and are ready to focus on their needs at the physiological needs. On the other hand, someone else may come in needing food and shelter starting their main focus at the first level of basic needs. Gorman (2010) states that “Maslow described the individual as an integrated and organic whole motivated by needs that are hierarchical – unfulfilled lower needs dominate thinking and behavior until they are satisfied (p.3). The focus of this project is the higher part of this pyramid, but in order for those needs to be met, the basic needs on the bottom of this pyramid need to be met first. McLeod (2018) stated that Maslow’s original idea of the basic needs being met at 100 percent capacity was later taken back by Maslow and corrected that original thought with the statement that it is a “false impression that a need be satisfied 100 percent before the next phase”. As said before, this idea of the different levels being flexible and “not rigid,” leads to a more personalized focus of the needs. They are able to focus on the need that they feel is most crucial as long as the needs before the level they are focusing on are met in at least one form.

Self-regulation

Maslow’s Hierarchy and self-regulation are connected in the way that self-regulation skills lead to fulfillment in the psychological needs (belongingness and love needs and esteem needs) and the self-fulfillment needs (self-actualization). There are many different definitions for self-regulation. According to Vohs and Baumeister (2004), one of the definitions they include is

“the exercise of control over oneself, especially with regard to bringing the self into line with preferred (thus, regular) standards. (p. 2)” When the word “regular” is referenced in that quote, it is based on the average of what is being regulated. Everyone has a different base of regulation, so it is hard to have a baseline everyone to reference. Another definition of self-regulation is that it is a constructive process to actively set goals for a certain task, while monitoring, controlling, and regulating behaviors, emotions, and motivation (Schunk, 2005). When looking at self-regulation in children, Bodrova and Leong (2008) state, “self-regulation has two sides: first it involves the ability to control one’s impulses and to stop doing something, if needed. Second, self-regulation involves the capacity to do something (even if one doesn’t want to do it) because it is needed. (p.1)” All of these definitions are different, but one thing they all have in common is that self-regulation is one’s ability to control oneself. Self-regulation is the control of one’s impulses, emotions, behaviors, or motivation (Schunk, Zimmerman, 2012).

Children experience various amounts of stress throughout their childhood in many different forms. Some have access to different means of support and resources while other may not. Some may not even realize they are stressed, when in fact they are. Too much stress can lead to other conditions like anxiety, depression, or other mental illness (Fisher, Mello, Izutsu, Vijayakumar, 2011). One way to deal with these conditions or being able to self-regulate your emotions would involve meditation or breathing. Being able to understand and be aware of the correlation between respirations and these emotions can help treat conditions like anxiety and depression (Jerath, Crawford, Barnes, Harden, 2015). According to Blair (2010), “stress is of strong interest for children’s development, however, because alterations to stress response systems resulting from the early rearing environment may have specific effects on aspects of brain development and function that promote or impede the development of reflective and goal-

directed self-regulation of behavior such as that needed for success in school.” (p.1).

When talking about self-regulation in a classroom, it is beneficial for participants to learn skills to help regulate themselves when they feel stressors arising. According to Boekaerts and Corno (2005), “stress is of strong interest for children’s development, however, because alterations to stress response systems resulting from the early rearing environment may have specific effects on aspects of brain development and function that promote or impede the development of reflective and goal- directed self-regulation of behavior such as that needed for success in school.” (p.1). Starting these practices early in the student’s lives can help with the stressors arise in their future. School is not only a place for participants to grow academically, but it is a place for participants to grow socially and emotionally. A student’s social being and ability to build relationships with others play a big role of the school setting (Eisenberg, Valiente, and Eggum, 2010). If taught these skills early on, they can carry these self-regulation skills with them as they continue to grow emotionally, socially, and academically.

Mindfulness

Mindfulness breathing is one strategy used as self-regulation skill. According to Lillard (2011), mindfulness is defined as “is a quality of focused attention on the present moment accompanied by a non-judgmental stance.” (p.1). There are breathing techniques created to help individuals be focused on the present moment. Bishop (2002) argues, that mindfulness also that mindfulness is the idea of staying present in the moment, while not getting involved with the emotional reaction to what the environment or other surrounding factors. This idea is focusing of the very moment and not letting other factors effect one’s present state of emotions. Teaching those to be non-judgmental during these techniques will lead for a more effective mindfulness practice. “Mindfulness skills help to develop cognitive skills such as retention, thinking, problem

solving, and emotional balance” (Karunananda, Goldin, and Talagala, 2016, p.2). This being said, mindfulness can lead to self-regulation to help the growth of emotional balance and other cognitive skills. In a Montessori classroom, breathing is considered a way to build focus and concentration (Lillard, 2011, p. 2).

Zelazo and Lyons (2011) suggest that there are different strategies for mindfulness that help children self-regulate in school. This being said, there are various different approaches and benefits for providing mindfulness, especially for children in at school. Chorney and Eliuk (2018) state “mindfulness practice is becoming mainstream in many classrooms” (p.4). There are much more data to support the benefits of mindfulness practices in schools. One study shows that mindfulness based interventions lead to a positive impact on students with attentional control difficulties (Anderson, Segal, Lau, & Bishop, 2007). Another study was conducted by Cho, Ryu, Noh, and Lee with participants who were attending college at the time. This study supports that mindfulness breathing does have a positive impact on students with anxiety and helps promote positive thoughts more regularly (2016). A third study was conducted, but the data did not support the hypothesis. This study was to investigate mindfulness breathing impacts on a working memory capacity (Quek, Majeed, Kothari, Lua, Ong, Hartanto, 2021). The hypothesis was that the exposure to the mindfulness breathing would help recall and memorize different ideas. As stated the data did not support this, but the researchers suggest an idea that could support this hypothesis in another study. The idea is that single session mindfulness was too brief of an exposure for the mindfulness breathing to be effective. Quek, Majeed, Kothari, Lua, Ong, and Hartanto suggest that there should be multiple exposures of mindfulness breathing in order for it to be more effective when it comes to the working memory (2021). Mindfulness can lead to strengthening one’s executive function skills (Karunananda, Goldin, Talagala, 2016). This

includes skills like retention, understanding, analyzing, creating, and applying ideas. The idea of strengthening students' executive function skills in a school setting can only benefit the students' ability to be successful. One teacher implemented a five-week mindfulness intervention with their students and their families. Some of the findings included, students being more aware of their emotions, students creating a deeper connection their loved ones, and being able to focus more in school (Schrodt, Barnes, DeVries, Grow, Wear, 2019). Providing a space for students to do all of those things is very beneficial for them. Mindfulness breathing has become more of an idea in schools more recently. Schonert-Reichl and Roser (2016) state that this is "based in part on the growing body of research documenting the benefits of mindfulness practices with regard to improving attention and emotion regulation, in relieving distress and well-being" (p.3). If the research is showing that mindfulness is benefiting student's, schools should be implementing the idea.

Yoga

Yoga is another practice used as a self-regulation skill. Yoga practices have helped improved many ailments including mental health illnesses (Riley, Park, 2015). This includes depression, anxiety, and other stress related illnesses. Referring to Figure 1 of Maslow's Hierarchy, these are needs that need to be met in the psychological needs category. These are real needs that are seen in students. The World Health Organization (2011) states, "mental health is a matter of increasing concern" (Fisher, Mello, Izutsu, Vijayakumar, 2011, p.13). Mental health is still on the rise. There are many different factors leading to this: biological, community, media, etc. Teaching these self-regulation skills to participants at a young age, can help them cope with mental health related illnesses and other stressors that may occur in their lives.

Using yogic practices in a school setting can be beneficial for the students. Peck, Kehle, Bray, Theodore suggest that yoga could be used as a behavioral or medical intervention to help students' regulate their emotions (2005). The study also suggest that students with attention deficit hyperactivity disorder (ADHD), can use yogic practices to regulate their bodies. Using yoga strategies as behavioral or medical interventions in a school setting could be beneficial for many students. Yoga has also been proven to be beneficial for athletes (Sharma, 2015). Some benefits looking in a sports lens include minimizing injury, promote more flexibility, and more concentration and mental focus. According to Sharma, some benefits that yoga has over all includes the increase of immunity, sleeping improves, a decrease in blood pressure, and other regularity and benefits to the systems within the body (cardiovascular, gastrointestinal, endocrine, and respiratory) (2015). With all of these factors proving to be benefits of yoga, it would be a benefit for schools to start implementing yoga for better health for their students and to also help them stay focused while at school.

Methods

Subjects or Participants

There are twenty-five participants participating in this study ranging from the ages of eight to nine years old. Eight of these participants are female and seventeen are male. Three of these participants have an emotional behavior disability, one of them is on the Autism spectrum, and six participants have a learning disability. These demographics do not include other participants who are experiencing other stressors or trauma, either at home or at school. The participants come from a various different backgrounds and knowledge about self-regulation. The participants participating in this study will be where the data is collected from. The participants will be observed based on their behaviors and emotions before and after they utilize

the calming station. The participants will be asked a series of questions done in an interview style. The participants will also be completing a survey before they exit the station.

Researcher Role Statement

The teacher of the classroom that these participants are a part of will be the conductor of this project. Their role is to interview participants before, during, and after implementation of the calming station. They are also the observer. They observed the student's behavior before and after visiting the station. Lastly, they collected the surveys after each week and document the impact of the station.

Setting

This research project was conducted in a 3rd grade classroom in a rural city in Minnesota during the Spring of 2021. The school that this is being taken place at is a Title 1 community school. As stated before, being a Title 1 school means that over 40 percent of the school's population has qualified for free and/or reduced-priced lunch at school and being a community school means that the school has more resources throughout the community to create a stronger community.

Due to COVID protocols, the station had to be set up in a specific way for the safety of those participating. Within the classroom, desks have to be spread out three feet apart. This made finding a space for the calming station more difficult with the limited space. The station is about a four-yards by two-yards space and it is located in a corner of the room, next to a window that leads to outside. It is an enclosed space with an opening as an entrance and exit. Within this station includes mindfulness cards, a yoga stretches mat, a Hoberman sphere, pencils, a water bottle that has glitter inside, the expectations for the station, a sanitization sign, and the survey.

The mindfulness cards are located on the back of a book shelf that provides participants directions for each breathing technique. The yogic stretches mat is located on the floor of the station. It provides the name and pictures of the different yogic stretches. It also provides them a softer surface to sit or lay on while in the station. The Hoberman sphere, pencils, and the water bottle with glitter in it are all props that the participants could use for different breathing techniques, if they choose to. The expectations for the station is an anchor chart of what the expectations are that the class came up with together. This was included in the station as a reminder of what is expected in the station. The sanitization sign that reads either a green “go” or a red “stop”. This is in place due to the sanitization protocols that the district has in place to ensure the safety of the participants. Lastly, the survey is for the participants to complete before they exit the station. Then they place that survey in a box, to ensure the confidentiality of their survey.

Research Questions

The first question that is being looked at is: does mindfulness breathing lead to self-regulation? The second question that is being looked for is: does yogic stretches lead to self-regulation? The third question that is being looking for is: what method is the preferred method: mindfulness breathing or yogic stretches? The purpose of these questions is to see if there is one method that leads to regulation more than the other. The preferred method or is the participants favor one method versus the other is something that is also being checked.

Data collection Procedures

In this study, data were collected in one of three ways: interview, observations, and/or survey. Below shows the three research questions for this study: 1.) does mindfulness breathing help promote self-regulation in 3rd grade participants, 2.) do yogic stretches help promote self-

regulation, and 3.) which method is preferred: mindfulness breathing or yogic stretches. It also shows the data source that will be used for each research questions. All three pieces of data will then be compared and checked for credibility and accuracy amongst each participant. The student surveys, interviews, and observations should all have close to the same results for each student. Once I check for accuracy and credibility for all three pieces of data for each participant, I will check for patterns amongst the participants. From there, I can check to see if my hypotheses, the calming station using mindfulness breathing and yogic stretches does lead to self-regulation in 3rd grade participants, is supported with the data shown.

| Research Question | Data Source 1 | Data Source 2 | Data Source 3 |
|--|----------------------|----------------------|------------------------------|
| Does mindfulness breathing help promote self-regulation in 3 rd grade participants? | Student Survey | Student Interviews | Observation: Anecdotal notes |
| Do yogic stretches help promote self-regulation in 3 rd grade participants? | Student Survey | Student Interviews | Observation: Anecdotal notes |
| What method is the preferred method: mindfulness breathing or active movement? | Student Survey | Student Interviews | Observation: Anecdotal notes |

Table 1

The interviews will be used as a pre assessment and post assessment, while also being used halfway through the (6 week) project to gauge the participants understanding and awareness of their own self-regulation skills. The pre assessment and post assessment will be the same four questions asked in both interviews. The pre and post assessment interview consists of these 4 questions:

1. What do you know about calming your body?
2. What are some strategies you use to calm your body?

3. What do you know about using mindfulness breathing to calm your body?
4. What do you know about using yoga stretches to calm your body?

These are broad questions for each student to answer about “calming their body” or self-regulation. These questions were asked by the conductor of the study in a one-on-one setting. The conductor asked the questions, the student answered, then the teacher would write word for word the participants’ response. The teacher also had a recording device to use in case of any confusion or misunderstanding of the student. This was done to ensure the integrity of the data. These questions will be asked week 1 and week 6 of the implantation to check for growth and understanding of self-regulation skills. The mid-intervention interview is similar to the pre/post interview in the way the interview was conducted, but had different questions. The researcher met with each student individually. The question was asked by the conductor, the student would answer, and the conductor would then record that student’s answer. The recording device is being used for this interview, as well to insure the validity of this set of data. The questions for the mid-intervention interview includes:

1. Which method helps calm your body best: breathing or stretching?
2. When you enter the station, does breathing help calm your body? How so?
3. When you enter the station, does yoga stretches help calm your body? How so?
4. Does your body feel different after visiting the station? How so?

These questions are similar to the questions on the survey, but different in the way they can explain their answers in detail. The survey data and interview data will be compared to check for similarities and differences based on the student responses.

The survey used for this study is a student based survey. Each time before leaving the station, the participants will fill out a survey. After the participants complete the survey, it will be placed

in a box, to ensure the participants participating in this study their privacy. This survey is used to gauge a preferred method: mindfulness breathing or yogic stretches. It is also used to measure the effectiveness of the station and if the participants were able to use the self- regulation skills in the station to help calm their bodies and emotions. This survey consists of these 4 questions:

1. How did you feel when you entered the station?



Happy

Calm

Somewhat calm

Sad

Mad

2. How did you feel when you left the station?



Happy

Calm

Somewhat calm

Sad

Mad

3. Which strategy did you use to calm your body: breathing or stretching? Circle one.

Breathing

Stretching

4. Any other comments you would like me to know?

These data will then be used to check for individual growth and growth as a whole. These data will be kept track of by using a binder for individual growth and a chart for whole group growth. This chart will check for their responses, positive and negative change after visiting the station, and what method they prefer: mindfulness breathing or yogic stretches. Using the data from the interviews and the survey, the data will be triangulated to check for accuracies and inaccuracies of the data.

The observations taken are unbiased, qualitative, and quantitative. Meaning the observations for this project will be taken from the same person each time based on student behaviors before and after visiting the station. The observations will also be based on how many

times a student may visit the station. The observer chose 4-5 participants a week to observe. The participants were chosen based on their number in the study. For example, Student 1-4 will be observed the first week of the study, Student 5-9 will be observed the second week of the study, etc. There are enough weeks in the study where each participant will be observed for a week at a time. All of the observations will be kept in the same notebook with the participant's name and number for the study, along with the dates they were observed. This notebook will be kept in the same binder as the other data sources are kept, in order to keep organization and order for triangulating the data.

Instruction

The weeks leading up to introducing the calming station, the participants had been introduced to some mindfulness breathing and yogic stretches that is included in the station. The first week of implementing the calming station, will be used for going over and practicing expectations of the station and becoming comfortable with this new space in the room. Some these expectations include one person at a time, completing the survey, using the space when you feel dysregulated, and flipping the sanitizing sign after they are done using the station. The participants were shown what a "typical" time in the station would look like. It would look like a person who is dysregulated and they would go to the calming station. Then they would look at the options, either mindfulness breathing, yogic stretches, or something else that they already use to calm their bodies. After they have chosen one of these strategies and put it to use, they would complete the survey. Last, they would put their survey in the box and flip the sanitation sign to read "stop". They would then come back to the class and continue on with the class activity.

After the expectations are set into place and they understood the space of the calming station, the

participants were able to use the station as they feel is needed. The participants would not be forced to visit the station, but it would be offered as a space to “cool off” if needed.

Results

Introduction

Data were collected to determine if mindfulness breathing and yogic stretches promote self-regulation. Several data collection tools were used to assess participants’ growth in self-regulation, and ability to retain the different self-regulation strategies. The tools used to collect data on these areas were: pre-assessment interviews, mid-intervention interviews, post-assessment interviews, surveys, and anecdotal notes based on observations. The results section answers the three sub-questions posed by this study: 1.) does mindfulness breathing promote self-regulation? 2.) do yogic stretches lead to self-regulation?, and 3.) Which method is preferred in the calming station: mindfulness breathing or yogic stretches? For the results, self-regulation was defined as the participants’ ability to calm and control their emotions; growth was defined as student responses to the interviews and surveys; and retaining strategies was defined as a student’s ability to recall strategies used to regulate their emotions.

Does mindfulness breathing help promote self-regulation in 3rd grade participants?

The first data tool used to answer this question is the student survey. The way that survey was set up allowed the student to choose a feeling they felt when they entered the station and when they left. It then asked what method they used while regulating their body. The tables below show the results of the surveys as a whole group throughout the six weeks. Due to the cleaning protocols due to the COVID-19 pandemic, there were times when participants would have to either wait to use the station or use the mindfulness breathing or yogic stretches

somewhere else. There was a total of 68 survey responses throughout the six weeks of this study, but due to participants having to wait or self-regulate elsewhere, the data might not be fully accurate.

Feeling enter the station:

| Happy | Calm | Somewhat calm | Sad | Mad |
|-------|------|---------------|-----|-----|
| 6 | 3 | 13 | 15 | 31 |

Feeling exiting the station:

| Happy | Calm | Somewhat calm | Sad | Mad |
|-------|------|---------------|-----|-----|
| 14 | 31 | 17 | 3 | 3 |

Preferred Method:

| Mindfulness Breathing | Yogic Stretches | Other Strategies |
|-----------------------|-----------------|------------------|
| 38 | 21 | 9 |

Table 2

Looking at the first two tables, there is a shift in the numbers. On Table 1 of “feelings entering the station”, the higher numbers are on the right side of the table which are the feelings that are showing the participants are dysregulated (mad and sad). Now looking at Table 2 “Feeling exiting the station”, the higher numbers are now on the left side of the table showing that the participants have more regulated emotions (happy and calm). While recording the data of the amount of change in emotion and regulation, out of the 68 surveys collected, 38 surveys showed that mindfulness breathing was chosen in the calming station. Of the total 68 surveys, 49 of the surveys had a positive change. The term positive change is the change from a dysregulated emotion (mad or sad), to a more regulated emotion (happy or calm). Out of the 49 surveys that showed a positive change 32 of them came from participants who used mindfulness breathing strategies. That means that the data collected from the survey shows 65.3% positive

change rate for mindfulness breathing. The preferred method as a whole is mindfulness breathing.

The second data tool used was the student interviews. There were three different interviews conducted in this study: pre-assessment, mid-intervention, and post-assessment interviews. The pre-and post-assessment interviews were composed of the same questions:

1. What do you know about calming your body?
2. What are some strategies you use to calm your body?
3. What do you know about using mindfulness breathing to calm your body?
4. What do you know about using yoga stretches to calm your body?

The table below shows the participants scoring and growth from pre-assessment interview to post-assessment interview.

| STUDENT | PRE INTERVIEW Q1, Q2, Q3, Q4 | POST INTERVIEW Q1, Q2, Q3, Q4 | OVERALL CHANGE Δ |
|------------|---------------------------------|-------------------------------------|----------------------------|
| Student 1 | 1,1,1,0 | 1,2,1,1 | + |
| Student 2 | 2,2,1,0 | 2,3,2,1 | + |
| Student 3 | 1,3,0,0 | 1,3,1,2 | + |
| Student 4 | 0,1,1,0 | 1,1,0,0 | NC |
| Student 5 | 0,2,0,1 | 1,2,1,2 | + |
| Student 6 | 0,0,0,0 | 0,0,0,0 | NC |
| Student 7 | 1,1,3,2 | 2,1,2,2 | + |
| Student 8 | 3,2,1,1 | 3,2,1,1 | NC |
| Student 9 | 2,2,2,1 | 2,3,2,2 | + |
| Student 10 | 2,2,1,0 | 3,3,3,1 | + |
| Student 11 | 2,1,1,0 | 2,3,3,2 | + |
| Student 12 | 0,0,0,0 | 2,2,1,2 | + |

| | | | |
|------------|---------|----------|----------|
| Student 13 | 0,1,0,0 | 1,1,0,0 | NC |
| Student 14 | 3,2,2,1 | NO SCORE | NO SCORE |
| Student 15 | 1,1,0,1 | 1,2,1,1 | + |
| Student 16 | 1,3,1,1 | 1,3,2,1 | NC |
| Student 17 | 2,3,2,3 | 2,3,3,3 | NC |
| Student 18 | 1,3,0,1 | 1,3,1,1 | NC |
| Student 19 | 1,1,1,1 | 2,3,3,2 | + |
| Student 20 | 0,1,0,1 | 2,3,1,1 | + |
| Student 21 | 0,2,0,1 | 1,3,1,1 | + |
| Student 22 | 2,1,3,1 | NO SCORE | NO SCORE |
| Student 23 | 2,1,0,1 | 2,2,0,0 | NC |
| Student 24 | 2,2,0,0 | 2,2,2,2 | + |
| Student 25 | 0,1,1,1 | 1,1,1,1 | NC |

Table 3

The interview responses were scored on a 0-3 scale. Scoring a “3” entails the student provided at least three examples for each question, scoring a “2” is an answer with two examples, scoring a “1” had one example, and a “0” had no examples or they did not know. Determining the change amongst the pre and post assessment interview, the criteria consisted of three scores. If there were at least two or more positive changes where a student provided more accurate or correct answers or examples, they would score a “+”. If a student provided two or more fewer answers or examples from their original interview, they would receive a “-“. If the participants had no change or only one change from their original interview, they would receive a “NC” which is shortened for “no change”. All 25 participants participated in the pre-assessment interview, but due to the COVID-19 pandemic there were a few participants out for a

long period of time and two participants were gone during the post-assessment interviews and received a “no score” for their post-interview and change scores.

Looking at this data, there were 14 participants who had a positive change and there were 9 participants who showed no change. Out of all 25 participants there were no participants who showed any negative change.

The mid-intervention interviews originally consisted of four questions. As the researcher continued the interviewing process, they realized that there had been participants who had not visited the station at this point and the questions going forward with this interview they could not answer. The questions are based towards those who had visited the station. That being said these are the new set of questions that were asked during this interview:

1. Have you visited the calming station?
2. Which method helps calm your body best: breathing or stretching?
3. When you enter the station, does breathing help calm your body? How so?
4. When you enter the station, does yoga stretches help calm your body? How so?
5. Does your body feel different after visiting the station? How so?

The table below shows the participants answers to these questions. “Y” is abbreviated for yes, “N” is abbreviated for no, “B” is abbreviated for breathing, “S” is abbreviated for stretches, and “NA” is abbreviated for not applicable. The participants who are highlighted in red were either absent or they had not yet visited the station. The participants highlighted still answered their preferred method, if they had one.

| STUDENT | QUESTION 1 Have you visited the station? | QUESTION 2 Preferred method | QUESTION 3 Does mindfulness help calm your body? | QUESTION 4 Do yogic stretches help calm your body? | QUESTION 5 Did your body feel different after visiting the station? |
|---------|---|--------------------------------|---|---|--|
| | | | | | |

| | | | | | |
|------------|----|----|----|----|----|
| Student 1 | Y | B | Y | N | Y |
| Student 2 | Y | B | Y | Y | Y |
| Student 3 | Y | B | Y | Y | Y |
| Student 4 | Y | S | Y | Y | Y |
| Student 5 | N | B | | | |
| Student 6 | N | | | | |
| Student 7 | Y | S | Y | Y | Y |
| Student 8 | Y | B | Y | N | Y |
| Student 9 | N | S | | | |
| Student 10 | Y | B | Y | N | Y |
| Student 11 | Y | B | Y | Y | Y |
| Student 12 | Y | B | Y | Y | Y |
| Student 13 | Y | B | Y | Y | Y |
| Student 14 | NA | NA | NA | NA | NA |
| Student 15 | Y | S | Y | Y | Y |
| Student 16 | N | B | | | |
| Student 17 | Y | B | Y | Y | Y |
| Student 18 | Y | B | Y | Y | Y |
| Student 19 | Y | B | Y | Y | Y |
| Student 20 | Y | B | Y | N | Y |
| Student 21 | Y | B | Y | Y | Y |
| Student 22 | NA | NA | NA | NA | NA |
| Student 23 | Y | B | Y | N | Y |
| Student 24 | Y | B | Y | N | Y |
| Student 25 | N | S | | | |

Table 4

When asked what their preferred method was, 17 of the participants preferred mindfulness breathing. All of the student who have visited the calming station had claimed that mindfulness breathing had helped regulate their emotion, even if it was not their preferred method. All of the participants who had visited in the station also claimed that their body felt different. When asked to further their answer, some responses would include that they felt “calm”, “relaxed”, “better”, and “ready to do their work”.

Some of the observations made about mindfulness breathing throughout the six weeks varied for each student. The researcher observed each student for one week. For some participants, visual change was observed, but for others it was not.

| STUDENT | Amount of times visiting station within the week observed. | Was positive change observe? |
|------------|--|------------------------------|
| Student 1 | 1 | Y |
| Student 2 | 4 | N |
| Student 3 | 1 | Y |
| Student 4 | 0 | |
| Student 5 | 0 | |
| Student 6 | 0 | |
| Student 7 | 3 | Y |
| Student 8 | 1 | Y |
| Student 9 | 0 | |
| Student 10 | 4 | Y |
| Student 11 | 7 | Y |
| Student 12 | 0 | |
| Student 13 | 1 | N |
| Student 14 | 0 | |

| | | |
|------------|-----------------|---|
| Student 15 | 2 | Y |
| Student 16 | 0 | |
| Student 17 | 4 | Y |
| Student 18 | 0 | |
| Student 19 | 1 | N |
| Student 20 | 3 | Y |
| Student 21 | 2 | Y |
| Student 22 | Absent all week | |
| Student 23 | 0 | |
| Student 24 | 1 | Y |
| Student 25 | 0 | |

Table 5

The table shows the amount of times that the student visits the calming station in the week they were being observed. There were many other visits at the calming station that were not observed. The table also shows if there was noticeable positive change for the student after visiting the station. This is categorized by participants who show signs that they are dysregulated (yelling, pushing, putting their head down, crying, or claiming they are mad or sad) before the station, and after visiting the station they show signs of regulation (gets back to what the group was doing, using correct voice levels, keeping their hands to themselves, or not crying). Out of the 14 participants who were observed before and after visiting the calming station, 11 of those participants had noticeable change. There were 35 total observations made in the station and 22 times mindfulness breathing was used.

Another piece that the researcher observed during this time that the data does not show is that the participants would use the mindfulness breathing strategies that were used in the calming

station in other settings. A few places participants were observed using the breathing strategies was at their desks, in the hallway, and outside.

Do yogic stretches help promote self-regulation in 3rd grade participants?

Looking at the data from the student survey in Table 3, out of the 68 total surveys, there were 21 times when the yogic stretches were used in the calming station. Out of those 21 times when yogic stretches were used, 13 surveys showed a positive change in regulation. That shows that from the data collected on the surveys there was a 42.8% positive change rate in yogic stretches leading to self-regulation.

When participants were interviewed for their pre-assessment and post-assessment interviews (Table 4), there were nine participants who had a positive change, there were 11 participants who did not show any change, and one student who had a negative change in their scores on question 4, which was the question about what they knew about yogic stretches to regulate their body. Looking at the mid-intervention survey results (Table 5), 12 participants who visited the station claimed that the yogic stretches helped regulate their emotions.

As stated before, all participants were observed for a week at a time based on what number they were in the study. Within that week there were participants that visited the station multiple times and there were participants that did not visit the station at all. If you reference back to Table 6, the data is shown. From the observations on the participants who did visit the calming station and used yogic stretches, minimal change of regulation. There were 11 times when yogic stretches were observed in the calming station and out of those eleven times, eight of the times the participants did not show change to their behaviors showing dysregulation. Participants who entered the station that showed signs they could be dysregulated, were still showing those same emotions as when they left.

What method is the preferred method: mindfulness breathing or active movement?

Table 3 shows the number of times each method was used to regulate their bodies from the student survey. There were 38 times when mindfulness breathing was used, 21 times when yogic stretches were used, and 9 when another strategy was used. Other strategies included reading or drawing. The students share this with me by not circling a specific method, but writing in the other way they spent their time in the calming station.

Based on the data from Table 4 on the pre-assessment and post-assessment interviews, overall there was a growth of information from both strategies. Participants tended to respond with more mindfulness breathing strategies compared to yogic stretches. Out of the 22 responses from the mid-intervention interview, 17 participants claimed their preferred method mindfulness breathing and 5 participants claimed that yogic stretches was their preferred method.

As participants were observed in the station, mindfulness breathing was chosen more than yogic stretches to regulate their emotions. There were 35 total observations made in the station, 22 times mindfulness breathing was used, 11 times yogic stretches were used, and 2 times participants chose something different.

Discussion**Interpreting the Data**

Using the data provided above, it can be used to start to answer the research questions of this study. The first question is: does mindfulness breathing promote self-regulation? Using the data provided in this study, it supports that mindfulness breathing does lead to self-regulation. From the data collected from the survey, there was 65.3% positive change rate for mindfulness breathing. Data from the interviews and observations showed favor in the mindfulness breathing compared to yogic stretches in the sense of self-regulation. More participants used mindfulness

breathing while in the station and data show that it was more effective. The second research question is: do yogic stretches help promote self-regulation? Data collected from the surveys show that there was a 42.8% positive change rate in yogic stretches leading to self-regulation. Participants were able to grow their knowledge of yogic stretches, based off the interviews, but mindfulness breathing was still considered to be more effective. The third research question is: what is the preferred method? Using data from all of the data collection tools (student surveys, pre-assessment interviews, mid-intervention interviews, post-assessment interviews, and observations) there was a common theme found. Mindfulness breathing was the preferred method, followed by yogic stretches, and then the other strategies that participants used. So the three research question are: 1.) does mindfulness breathing promote self-regulation? 2.) do yogic stretches promote self-regulation 3.) What method is the preferred method: mindfulness breathing or yogic stretches? Yes, the data supports that mindfulness breathing promotes self-regulation. No, the data does not fully support that yogic stretches promote self-regulation. And mindfulness breathing is the preferred method of self-regulation.

Limitations

One limitation that was faced during this study is the cleaning protocols and quarenting protocols due to the COVID-19 pandemic. The calming station needed to be cleaned in between every use. This caused some participants in need of the station to wait to use the station or practice the mindfulness breathing or yogic stretches elsewhere. The quarantining process also threw off the data of certain participants. They had to be out for a long period of time impacting the potential data that could have occurred if they were present. Another limitation that I faced while analyzing the data, was that not every participant visited the station. I planned on using an

average of all of the data for each participant, but as I was analyzing the data, those participants who did not visit the calming station would not have data to show, throwing off the average.

Further Studies

Going forward, there would be a few things I would do differently or change about this study. Ideally, I would want complete this study in a time when there was not a global pandemic occurring. There was safety protocols that were set in place by the school district in order to ensure the participants safety. These safety protocols threw off parts of the data causing the data to not be fully accurate. Another thing I would do differently is to have a bigger sample size of participants. I had 25 participants and to get a more accurate result, I would need a larger sample size. One thing I took from the data from this study is that mindfulness breathing does help promote self-regulation in third grade students. I would like to see which mindfulness breathing strategies are more effective for self-regulation.

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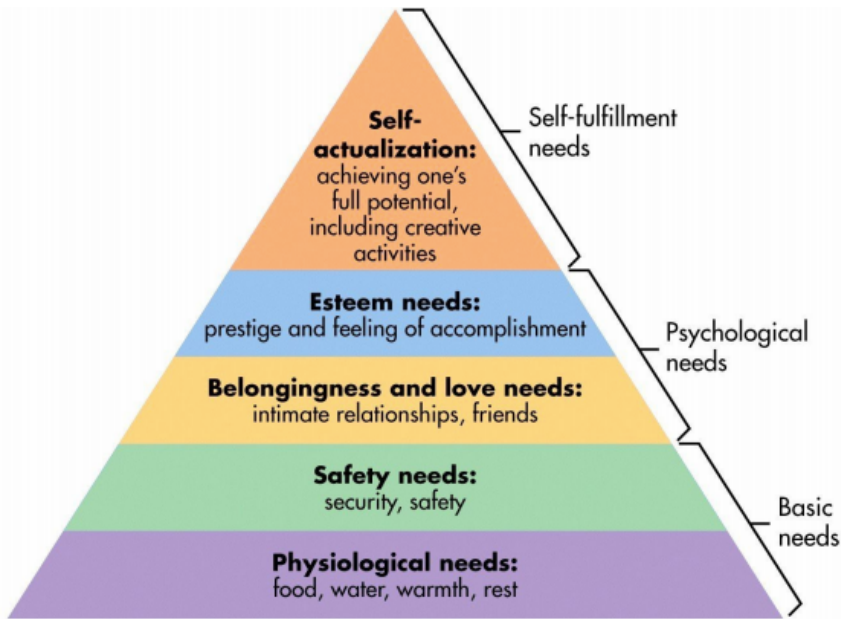
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Appendices

Appendix A: Maslow’s Hierarchy of Needs (Figure 1)



Appendix B: Triangulation Matrix

| Research Question | Data Source 1 | Data Source 2 | Data Source 3 |
|--|----------------|--------------------|------------------------------|
| Does mindfulness breathing help promote self-regulation in 3 rd grade participants? | Student Survey | Student Interviews | Observation: Anecdotal notes |
| Do yogic stretches help promote self-regulation in 3 rd grade participants? | Student Survey | Student Interviews | Observation: Anecdotal notes |
| What method is the preferred method: mindfulness breathing or active movement? | Student Survey | Student Interviews | Observation: Anecdotal notes |

Appendix C: Student Survey

2. How did you feel when you entered the station?



Happy

Calm

Somewhat calm

Sad

Mad

3. How did you feel when you left the station?



Happy

Calm

Somewhat calm

Sad

Mad

4. Which strategy did you use to calm your body: breathing or stretching? Circle one.

Breathing

Stretching

5. Any other comments you would like me to know?

Appendix D: Pre/Post-interview

1. What do you know about calming your body?
2. What are some strategies you use to calm your body?
3. What do you know about using mindfulness breathing to calm your body?
4. What do you know about using yoga stretches to calm your body?

Appendix C: Mid-intervention interview

1. Have you visited the calming station?
2. Which method helps calm your body best: breathing or stretching?
3. When you enter the station, does breathing help calm your body? How so?
4. When you enter the station, does yoga stretches help calm your body? How so?
5. Does your body feel different after visiting the station? How so?