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Impact of Brain Breaks on Student Engagement in an Upper Elementary Classroom

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Impact of Brain Breaks on Student Engagement in an Upper-Elementary Classroom

A Mixed Methods Research Proposal

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By

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TABLE OF CONTENTS

CHAPTER 1

INTRODUCTION

Introduction

Educators are constantly looking for ways to increase student engagement. Due to limited attention spans in students and the academic stress that is placed on them, students often become disengaged and distracted after extended periods of academic related tasks. Brain breaks, or short periods of movement or relaxation to break up academic tasks, can improve student engagement and focus. One specific benefit was improved focus, which has a positive impact on time-on-task behavior (Cline, et al., 2021). This study will concentrate on three different types of brain breaks; physical brain breaks that involve student movement, mindfulness brain breaks that involve breathing and relaxation, and a combination brain break where a quick movement break is followed by a breathing component. Following each brain break, the researchers will track the number of redirections required to bring focus back to the academic task. Students will also complete a reflection for the researchers to identify if students enjoyed each type of break and if they felt it helped them refocus. It will be explored if there is a difference in student engagement following each type of break and if a specific type of break is more highly enjoyed by the students. The goal is to find a classification of breaks that are both effective and enjoyable for the students.

Brief Literature Review

Intentional movement or mindfulness breaks for students between long periods of academic tasks are beneficial for student engagement after the brain break, especially when the breaks involve cognitive and physical engagement (Cheng et al., 2012). Weslake and Christian

(2015), noticed impacts on student engagement following three different types of brain breaks. Weslake and Christian's research is centered on breathing, physical breaks, and mental breaks. They looked at student engagement during the breaks as well as their ability (measured in length of time) to regain focus following the breaks. They found that students enjoyed the physical breaks best, that breathing had the shortest refocus time, but that mental breaks had a mix of both, making them the best option. Using information from this study, along with supporting evidence from further studies, it was determined that each type of break has its own pros and cons. The conclusion is that the research needs to be furthered by comparing physical and mindfulness breaks, along with a combination of the two to find the best option for both student enjoyment and effectiveness.

Statement of the Problem

The current problem is that educators do not have a clear idea of what type of brain break is most effective in regaining student attention. There is an infinite amount of brain breaks available, and it is often overwhelming to find the best choice for the classroom. As educators, it is definitely believed that brain breaks are beneficial to students; however, it is unclear of the most effective way to use them in the classroom. The goal is to discover the best way to implement brain breaks so that they have the highest positive impact on student engagement and enjoyment.

With this in mind, it is acknowledged that a single type of brain break may not be the best solution for each individual student. There may be some that strive in a more physical movement focused setting, while others may see a bigger impact from following mindfulness strategies. This study's purpose is to find the best fit for the 4th grade classrooms, although specific

students may need differentiated breaks. Teachers need to be able to provide opportunities for the brain breaks that best accommodate their population of students as a whole.

Purpose of the Study

The goal as teachers is to have the most amount of time during the day concentrated on academics. Implementing purposeful breaks into the classroom will help students get the downtime from academics that they need in order to get refocused for the next academic lesson. This study will focus on three types of brain breaks. The brain breaks will be physical movement, mindfulness breaks and a combination of both physical activity followed by breathing. The study will be tracking the concentration of students in the academic lessons that follow the breaks to see which type of break best supports student focus for getting back to their academic tasks. This will be done by identifying how many redirections students need to get back on task after the brain break activity. The study will also gauge which breaks are most enjoyable for students to ensure students are engaged in the breaks.

Research Questions

What type of brain break is most effective to engage students?

What type of brain break is most effective to regain focus?

Definition of Variables

Student Engagement: Student engagement during academic lessons is the dependent variable. Axelson and Flick (2010) define student engagement as, “How involved or interested students appear to be in their learning and how connected they are to their classes, their institutions, and each other” (p. 38). This will be assessed by tracking the number of times the teacher needs to redirect the student back to the academic task following the brain break.

Student Enjoyment: Student enjoyment during the brain breaks is the second dependent variable. According to Kubbens (2008), “Enjoyment is a state of emotional or psychological happiness” (p. 4). This will be assessed by using a qualitative survey to know if the students liked the type of brain break (physical, mindfulness or both).

Type of Brain Break: Type of brain break is acting as the independent variable. Brain breaks are defined as simple transitional physical and mental exercises designed to equip the teacher with tools to manage the physiology and attention to the class and to keep children in the most receptive state for learning (Weslake & Christian, 2015).

Significance of the Study

It is apparent that brain breaks can have a big impact in elementary school classrooms. The use of brain breaks in the classroom allows students to take a mental and physical break from the academic tasks that are asked of them throughout the school day. With the surge of popularity of brain breaks, the goal is to find which type of brain break had the most significant impact on student enjoyment during the break and engagement following the break. It is the hope that this study will build off of the research that has already been published and help create meaningful change in the classroom and school.

Research Ethics

Permission and IRB Approval

In order to conduct this study, the researcher will seek MSUM’s Institutional Review Board (IRB) approval to ensure the ethical conduct of research involving human subjects (Mills & Gay, 2019) (See Appendix B). Likewise, authorization to conduct this study will be sought from the school district where the research project will take place (See Appendix C).

Informed Consent

Protection of human subjects participating in research will be assured. Participant minors will be informed of the purpose of the study via the Method of Assent (See Appendix D) that the researcher will read to participants before the beginning of the study. Participants will be aware that this study is conducted as part of the researcher's Master Degree Program and that it will benefit her teaching practice. Informed consent means that the parents of participants have been fully informed of the purpose and procedures of the study for which consent is sought and that parents understand and agree, in writing, to their child participating in the study (Rothstein & Johnson, 2014). Confidentiality will be protected through the use of pseudonyms (e.g., Student 1) without the utilization of any identifying information. The choice to participate or withdraw at any time will be outlined both, verbally and in writing.

Limitations

There are some potential limitations that could affect the study. The first limitation is the time of day the brain break is completed. Some students could be more tired in the morning and need the brain break then, others could need the brain break in the afternoon after they have had an academically challenging day.

The second limitation to the study could be the type of brain break. Some students might prefer one type of break over another. This could lead to more redirections or lack of enjoyment with a particular student which would skew the results for that brain break.

A third limitation is the fact that this study is only being conducted within two fourth grade classrooms, so the sample size will be fairly small. It will only consist of 53 students. This

small sample size could potentially mean that the results may not transfer to a larger scale of students.

Conclusions

This chapter analyzed the importance of brain breaks and why they are used in the classroom. Based on the research, the objective of the study will be to help identify which type of brain breaks are most enjoyable for students and which are most effective for regaining focus on the academic tasks that follow. In the following chapter, the literature that has already been published, regarding the effects of brain breaks on student engagement, will be considered.

CHAPTER 2

LITERATURE REVIEW

Introduction

This research study covers the impact of brain breaks in elementary school classrooms. This is important because students at the elementary level cannot focus and do their best work without time for a movement break. The goal is to increase the concentration which directly correlates with positive academic performance. Brain breaks are coupled with positive effects, in terms of brain function, maintaining student attention, and increased physical activity in school settings (Mok et al., 2020). Over a period of time, the goal of the proposed research is to find out if brain breaks and movement breaks have an impact on students' ability to direct their attention to their academic work. The articles used in this research describe various ways that brain breaks or movement breaks can affect student academic performance.

Brain Breaks

Egger et al. (2019) found that a combination of physical activity and cognitive function showed the most significant results in mathematics performance. Executive function is what anticipates positive academic performance. There are three different dimensions of executive functioning: updating, inhibition and shifting. Updating is to keep information in short term memory. Inhibition refers to the avoidance of dominant, automatic or prepotent responses. Shifting, as stated by Egger et al. (2019), is "based on updating and inhibition and represents the ability to change among multiple tasks, operations, rules or perspectives" (p. 1).

A study published by Egger et al. (2019) had three different options for experimental conditions that were randomly assigned to the participating classrooms. The first option was the

combo group. This consisted of high levels of both cognitive engagement and physical exercise. The next option was the aerobic group. This consisted of low cognitive engagement and high physical exercise. The final option was the cognition group which consisted of high cognitive engagement and low physical activity (Egger et al., 2019). These brain breaks were instructed by the general classroom teacher. The breaks were each 10 minutes and needed to be completed two times per day. All of the teachers were to complete a training on the purpose of the study and how to implement the breaks. Each student completed an executive functioning pre-test before and post-test after the interventions. They also took a cognitive test on tablets. Additionally, students took an academic pre and post assessment on math, spelling and reading.

The combo group would play games such as Horserace. This game is physically intense by having students run in place and follow commands said by their teacher. They would also increase the difficulty by adding commands with movements. This would allow for cognitive challenges as well. The aerobic group played the same game, horserace, as the combo group but they would not add different commands because they wanted to keep the cognitive function as low as possible. The teacher would imitate a movement and the students would copy the teacher, rather than remembering the movement associated with the command. The cognitive group played another version of the Horserace game too. They did not want much physical activity so the students sat in a circle rather than standing. The students were told to use their arms or hands to react as quickly as possible to a command. The cognitive difficulty was increased by adding commands or changing the movement associated with a command.

The study found that the combo group, high cognitive engagement and high physical activity, had the most positive effect on academic performance. According to Chang et al., heart rates ranging between 70–85% seemed to benefit cognitive outcomes the most (2012).

Mazzoli et al. (2021) did research on if physical movement in the classroom affected cognitive function and on task behavior. The study was conducted on about 141 students between the ages of 6-8 years old. This study also was doing research to find out if sitting, standing and moving patterns had an affect on on-task behavior. Additionally, the researchers want to see if the students enjoyed the physical activity brain breaks. They were thinking that enjoyment of the activities could intrinsically motivate students to have on-task behavior.

The teachers participating in the study attended a training session. They were to implement one of seven activities, two times a day after a long period of sitting down. The activities would be about four to five minutes in length. The participating students took a few different tests to measure the data. One of the tests was from the National Institute of Health called Toolbox List Sorting Working Memory Test. This is done on an iPad to test cognitive ability. Another test they took was Event Related haemodynamic response in DL-PFC. This was done by placing an elastic band around their head with a probe. The test measured certain oxygen levels in the brains of the participants.

Furthermore, Fiorilli et al. (2021), came to the same conclusion. They also had about 141 students, ranging from 8-10 years old. These students were divided into three groups: creativity, fitness and control. They had their baseline testing done in addition to an enjoyment test. Both the fitness and creativity group had a “higher degree of enjoyment than the control group” (Fiorilli et al., 2021, p. 9). The fitness group had a higher attention and math performance than the creative group, which directly correlates with the results found within the study of Egger et al. (2019).

At the conclusion of this study, they found that “neither intervention showed significant improvements in working memory or lapses of attention, compared to the control” (Mazzoli et

al., 2021, p. 24). They suggest that further studies be conducted for a longer period of time. Mazzoli et al. mentions that increasing physical activity in this age group is important for their health and can also benefit their cognitive functions.

The research done by Tilp et al. (2020) had 35 participants who qualified for the study between the ages of 11-14. The intervention was about 30 minutes long during the school day. The exercises focused on sensorimotor and coordinative fitness. The students would do rotations of a variety of exercises that would last for 150 seconds. The intervention was done in the general education classroom of the students. The exercises would get increasingly harder as the duration of the study went on. The entire study was 11 weeks long and broken up by each of the three groups doing the intervention for about 4 weeks. At the time of their intervention, the participants would also be assessed on their academics and cognitive function.

The results of this study were positive. “Although both experimental groups showed increases in concentration ability, the observed performance gains were much more pronounced in the intervention than in the control group” (Tilp, et al., 2020, p. 27). The reading scores did not show significant effects between the intervention group and control group. In conclusion, the motor-coordinator intervention was what had the most effects on increased concentration in students ages 11-14.

Research shows that “physical activity has been associated with beneficial effects of cognitive functions such as attention, inhibition, cognitive flexibility or memory-related demands” (De Greeff et al., 2018, p. 506). This shows that physically active brain breaks in the classroom could help students retain information. There would be less reteaching if the students are paying attention and remembering what has already been taught.

Research provided by Weslake and Christian describes a study in a third grade classroom. The goal was to determine the effects of three different brain breaks on student enjoyment/engagement and their ability to refocus during math lessons. The article discusses how there is a lot of new neuroscience research being done that could have an impact on education. Teachers are implementing movement through various programs with the hope that it will have a positive impact on academic performance. “A number of theorists in education have recognized the need for teachers to incorporate movement and breaks so that optimal learning is achievable by students” (Weslake & Christian, 2015, p. 38). This particular study dives into three different brain breaks and their specific impact on student engagement and how they refocus after the break. So while this study does not have a goal of determining academic impacts, engagement and focus directly correlate with academic success.

A study by Weslake and Christian (2015) defined brain breaks as,

> Simple transitional physical and mental exercises designed to equip the teacher with tools to manage the physiology and attention to the class and to keep children in the most receptive state for learning. Enhanced learning through movement (educational kinesiology) increases the oxygen in the bloodstream and leads to improved concentration, which enhances children’s readiness to learn. If these movements are structured then the whole mind body system is activated (p. 39).

Attention spans for children, even at the upper elementary level, are still not very long. Giving children breaks after lessons where they are expected to concentrate allows their entire mind and body to activate and refocus.

This study focused on three different types of brain breaks: breathing, physical breaks, and mental breaks. This is important to note, as each type of brain break may have a different impact on student engagement and academic outcomes in the classroom. Each brain break was practiced in the classroom for one week. Each day of the week a different exercise was used. The breaks lasted five minutes during the math lesson. The students were then timed to see how long it took for each student to refocus on the lesson. At the end of each of the weeks, the students participated in a survey to let the teacher know which brain breaks they enjoyed and to see if they felt they were able to refocus.

The first week there were five relaxation and breathing breaks that were implemented: Rainstorm, Breathing, Plank or Plonk, Zoom! and Spin. The students seemed to have a low enjoyment and engagement level for these breaks and took an average of 3 minutes and 36 seconds for all students to refocus after the break. The second week was full of highly physical brain breaks: Macarena, Find the Leader, Kick Boxing, Find it Fast, and Tangled. Based on observations, the students were much more engaged and indicated a higher level of enjoyment. After the break, students were restless and the time to refocus was an average of 5 minutes and 48 seconds. “Although the literature was in favour of active brain breaks (Hannaford, 2005; Reilly et al., 2012; Ratey, 2008; Jensen, 2005), this finding indicates that active movement in the classroom may lead to a state of excitability and teachers may need to put strategies in place to protect against the loss of learning time” (Weslake & Christian, 2015, p. 42). The third, and final, week of this study focused on mental brain breaks. They were all mathematics related with some physical activity involved: Double Dice, Step Tag, telephone, Swat It, and Coin Toss. The time to refocus after these activities was only one minute and 24 seconds. From observations, students

were just as engaged in these activities as the previous week when they completed physical brain breaks.

After the study was completed, 8% of the students recorded that they preferred the breathing and relaxation techniques, 36 % chose the mathematics based mental breaks, while 56% chose the physical brain breaks. When asked which activity type was easiest to refocus after the brain break, 24% chose relaxation and breathing, 36% chose physical breaks, and 44% chose mental breaks. The researchers placed the data onto a four-quadrant grid, comparing enjoyment and engagement. “Mathematically related brain breaks with a moderate level of physical activity ranked both high on enjoyment and high on length of response time, putting them into the desired quadrant for optimal engagement and refocus and therefore, hopefully, for learning” (Weslake & Christian, 2015, p. 43).

The results of this study indicate that brain breaks need to be chosen carefully while being monitored closely to ensure that they are effective. The research window in this study was short, so the results may have been negatively impacted based on the lack of routine. It does seem, however, that subject related brain breaks were proven to be the best option to increase student engagement and decrease time taken to refocus.

Another study, published by the International Journal of Environmental Research, studies the effects of Brain Breaks® Physical Activity Solutions in the classroom. The study also showed the effects of these breaks on attitudes towards physical activity. It was a randomized control trial of 3,036 primary students (ages 8-11) from eight countries. These countries were Croatia, Lithuania, Macedonia, Poland, Romania, Serbia, South Africa, and Turkey. The students were either placed into a control or an experimental group. The experimental group used Brain Break® videos for four months. “This study provides evidence supporting Brain Breaks® in

terms of learning experience, attitudes towards PA (Physical Activity), and personal motivation. Using exercise videos is recommended as an interactive, technology-based PA solution that can be easily integrated into the school setting" (Mok et al., 2020, p. 2).

One way to combat the lack of physical activity shown by students is to incorporate physical activity into the daily classroom schedule. This is a theme that presents itself within quite a few studies. "Present literature supports school-based PA interventions as an effective strategy for improving health outcomes and academic achievement. Positive effects are also noted in terms of brain function, maintaining student attention, and increased PA in school settings" (Mok et. al., 2020, p. 2). The research notes the activity breaks are preferred if they are easy to manage, academically focused and enjoyable for the students. Technology is often used to integrate these brain breaks by using interactive video games, platforms on the internet, and physical activities that are engaging for children. These options make the brain breaks fun and interesting, as well as being beneficial for their physical health. "This study confirmed the positive impact that exercise videos have on learning" (Mok et al., 2020, p. 8). This information correlates with the research provided by Weslake and Christian. They found that physical activity focused brain breaks were most engaging to students. They found, however, that these brain breaks also took the most time to refocus after. These studies show that physical activity based brain breaks are engaging to students and are a way to incorporate physical activity into the classroom to promote physical fitness and a healthy lifestyle for kids.

An additional study done in Singapore was conducted soon after the previous study in eight countries. This study also researched the effect of Brain Breaks® Physical Activity Solution in a Southeast Asia Singaporean primary school. This study was smaller, with a group of only 113 8-11 year olds being assigned randomly into a control or an experimental group.

There were 6 classes in each group and the study was a total of 10 weeks long. The experimental group watched Brain Break® videos (3-5 minutes) during academic classes, while the control group continued their lessons as normal.

> The analysis revealed evidence in support of the positive effect of classroom video interventions such as Brain Breaks® on student's attitudes toward benefits, importance, learning, self-efficacy, fun, fitness, and trying to do their personal best in PA. The Brain Breaks® intervention provided a positive significant impact on students in Singapore. This study also revealed that interactive technology tools implemented into the school curriculum benefit students in terms of health and education" (Balasekaran et al., 2021, p.1).

This quote shows similar findings as the study done in Croatia, Lithuania, Macedonia, Poland, Romania, Serbia, South Africa, and Turkey. Both studies show that students' overall attitudes towards physical fitness is improved through the use of Brain Breaks in the classroom and that technology also has a positive impact on student's health and education.

There are further studies that show the positive effects of activity in the classroom, using different brain breaks, which they call "active pauses". Jiménez-Parra et al. (2022), published a study, using an active methodology program based on activity. The goal was to test these three traits: the effect of the strategies proposed by the teacher, the characteristics of the physical exercises proposed, and the responses produced in the students during the period of physical activity. This study was done in a classroom of 26 students between 11 and 13 years old in the Murcia region. It was 12 weeks long and combined both quantitative and qualitative data. The

results showed the student activity went up and that the teacher also promoted physical activity more frequently. “It was concluded that the activity break programme may be suitable to increase motor participation, as well as the social and cognitive interaction of students during class” (Jiménez-Parra et al., 2022, p. 84). The brain breaks used in this study were not formal videos as in the previous two studies, where Brain Breaks® Physical Activity Solutions were used. Rather, social interaction was the main source of activity. Various breaks were implemented, still, that involved the students’ motor and cognitive components. “These active pauses predispose students to greater attention and lead to cognitive resolution that promotes full group participation and interaction” (Jiménez-Parra et al., 2022, p. 92) This shows that these breaks for activity begin to show a positive connection with academic ability.

Furthermore, a study published by The Journal of Education and Practice, connects the health benefits of brain breaks to student’s educational performance. “A sedentary life style contributes to many chronic diseases and poor educational performance” (Perera, Thushanthi et al., 2015, p. 55). This study initially reached out to Oregon public elementary schools and 379 schools responded, saying that 92% of those schools did not meet the CDC recommendation for physical activity. After finding that information, Perera et al. reached out and asked how teachers would prefer to increase their students’ physical activity levels. 88% of teachers responded that they would be interested in implementing physical activity breaks into their classrooms. Following this objective, the researcher sent out an exercise DVD titled, “Brain Breaks: Classroom Fitness for Children.” This DVD consisted of 5-7 minute physical activities that 43 teachers used. “Teachers perceived that Brain Breaks provided students a beneficial amount of PA (86%) and improved their concentration (91%); teachers intended to continue using Brain Breaks (91%)” (Perera et al., 2015, p.55).

Increasing physical activity through brain breaks has many positive effects that show up in a student's academic performance. “Teachers noted several motivating factors for promoting students’ PA level. In our study, teachers responded that PA improved students’ concentration, students’ energy level, and their peer interactions” (Perera et al., 2015, p. 61). It is evident that students, especially in the United States, are not getting the amount of physical activity that they need during the day. Physical activity promotes better attention levels, and in turn, higher achievement.

> Children’s brains require PA breaks to process information after intense instruction. Other countries that score higher in scholastic tests have 10 to 20 minute breaks between each 40 to 50-minute block of instruction. In the U.S., it is common that blocks of instruction are taught consecutively without breaks, which is challenging for classroom teachers and students alike and may contribute to ‘burn out (Woodward-Lopez et al., 2010 as cited in Perera et al., 2015, p. 61)

To avoid students losing their focus and/or feeling burnt out and exhausted, frequent breaks are essential. Countries that allow students these breaks during academic instruction show higher test scores. The U.S. often encourages teachers to teach for longer blocks of time, even if children’s attention spans are not ready for them. Implementation of brain breaks will allow students to relax and refocus on their work, as well as increase their physical fitness.

Another positive element of brain breaks is the benefit it presents to students with intellectual disabilities. A 5 week study presented by The Journal of Intellectual Disability Research, JIDR, investigated the effects of active breaks on cognitive functions and on-task

behaviors in kids with intellectual disabilities. There were twenty-four children between the ages of eight and twelve studied and they were given a baseline test to gauge their cognitive functions, such as their response inhibition, lapses of attention, inference and working memory. Though this study did not find significant results concerning cognition, they did see that active breaks can increase physical activity and might also benefit their working memory (Mazzoli et al., 2021). The activities chosen were 3-5 minutes in length and implemented twice a day, between 9:00AM and 11:00AM and 11:30 AM and 1:00PM. The teachers reported that the students enjoyed the breaks, "However, some of the children (especially those with ASD) appeared overstimulated by the active breaks and required an additional activity to get back into a quiet state" (Mazzoli et al., 2021, p. 482). This is similar to the results by Weslake and Christian (2015). The students enjoyed the more active brain breaks, but required additional time to refocus. A more engaging, active break, might be most beneficial if it is followed by a breathing or relaxation exercise to refocus the students' minds and bodies.

The main findings of this study were that the active breaks help students with intellectual disabilities break up their time sitting and increase their physical activity levels. This study did not see significant effects on cognition or on-task behavior; however, a significant moderate effect was seen on working memory. Working memory, in this study, is associated with "low academic performance, or poor ability to refrain impulsive responses (response inhibition) and can be linked to disruptive behaviour" (Mazzoli et al., 2021, p. 465). This was measured using an iPad-based cognitive test for kids. The standard deviation for working memory was a moderate effect size of .30. A larger study over a prolonged period of time would help solidify these findings.

An additional study done in a UK classroom published by Cline et. al (2021) had the goal to find how, and to what extent, Busy Brain Breaks were implemented within a school setting. "'Busy Brain Breaks' was an intervention designed to improve fundamental movement patterns whilst increasing physical activity inside the classroom for children aged between 7 and 11" (Cline et al., 2021, p. 2). This study intended to find if the intervention was adopted and implemented across Gloucestershire, understand barriers there were for implementation, and discuss maintenance of the intervention due to behavior change. There were 6 schools included, with 28 classes and 35 teachers in the intervention group. A total of 716 students took part, with 553 having permission to take part in a pre and post intervention test; however, due to Covid-19 school closure, post-tests were not administered. The classes were asked to complete three of the 'Busy Brain Breaks' per day, three times a week, for twenty weeks, though the trial was only maintained for ten weeks, due to the pandemic.

When looking at the data, each class completed 7 breaks per week on average. Some teachers sandwiched the breaks between lessons while others used them as a transition period. Most used the breaks on non-PE days. "Participant 3, teacher of class 24 noted that she implemented an additional minute at the end of each Busy Brain Break where the children practiced mindfulness" (Cline et al., 2021, p. 9). This teacher placed mindfulness breaks directly after the active breaks to help refocus students back to the academic lessons.

> We used mindfulness or a minute of silence at the end of each session before we got back to work. Sometimes we used GoNoodle, which has great breathing/mindfulness videos just to calm the class back down. Or even just to get the class to sit back in their chairs, close their eyes and think about what they can hear, smell, taste etc. I tried to make sure it didn't take up more time"—Participant 3, Teacher of Class 24 (Cline et al., 2021, p. 9).

This connects to both the research published by Weslake and Christian (2015), and the previous study synthesized by The Journal of Intellectual Disability Research (2021) because it related the effectiveness of physical breaks to breathing that followed.

There were also barriers to implementation to recognize. 15 of the classrooms reported that space was a challenge, while 11 teachers reported time being a barrier. 6 classroom teachers also stated that classroom behavior was an issue; however, 5 of them noted that it was only an issue during the first 2 weeks of implementation. On the flip side, 8 teachers identified that the Busy Brain Breaks helped with classroom management. The breaks were used as a reward for completing tasks. The teachers identified that the breaks had a positive impact on children's fitness levels and general physical activity levels. "In addition to physical outcomes, all seventeen teachers noted positive behavioural and educational benefits as a result of the intervention. The most frequently identified benefit was improved focus, which had a positive impact on time-on-task behaviour" (Cline, et al., 2021, p. 12). They also recognised that the students were able to concentrate for long periods of time throughout the day. 16 of the 17 teachers reported that they would continue to use Busy Brain Breaks the following school year.

Theoretical Framework

For the purpose of this study, brain breaks will be defined according to how Weslake and Christian (2015) defined them. "Simple transitional physical and mental exercises designed to equip the teacher with tools to manage the physiology and attention of the class and to keep children in the most receptive state for learning" (Weslake & Christian, 2015, p. 39). Brain breaks can be a variety of activities, such as breathing or relaxation, movement breaks, or mental breaks that relate to academic instruction. This study will explore each of these types of breaks, and a combination of them, to see which breaks are most effective.

Research Questions

What type of brain break is most effective to engage students?

What type of brain break is most effective to regain focus?

Conclusions

This chapter reviewed literature that supported the study in determining the impact of brain breaks on student's academic performance. This information, along with data collected through action research, will hopefully determine if, and which types of, brain breaks best engage students and help them regain focus in the elementary school classroom. In the next chapter, data will be collected, interpreted, analyzed, and utilized for the research study.

CHAPTER 3

METHODS

Introduction

This study looked into the impact of brain breaks on student enjoyment and student engagement following the break. Three varieties of brain breaks were implemented. They were physical breaks, mindfulness breaks and a combination of both. The school district is constantly looking for the best curriculum and systems to implement in the classroom. The staff at the school the research designers work at is currently being trained in Conscious Discipline. This system embeds brain breaks into daily classroom routines. The goal is to create a classroom environment that supports the student as a whole. The stage of development 4th grade students are at, determines when they need a break from learning in order to keep their attention. In this chapter, the research methods used will be specified in order to get accurate results that will be used to better engage students.

Research Questions

What type of brain break is most effective to engage students?

What type of brain break is most effective to regain focus?

Research Design

This study was a mixed method quasi-experimental design. Quantitative data was taken, regarding the number of redirections needed following each type of brain break. Qualitative data was gathered when analyzing the post-study surveys completed by the students. The effect of an independent variable (i.e. type of brain break) on two dependent variables (i.e. student enjoyment

and student engagement post brain break) was interpreted. The students that were participating in the study were assigned to the research designers' 4th grade classes, rather than participants that were randomly assigned. The fact that this experiment was focused on the relationship between these variables and the non-randomized groups led to the determination that the quasi-experimental design would be most beneficial for this mixed methods research study.

Setting

This study took place in a suburban elementary school. This district is the fifth largest in Minnesota and has 38 schools in the district. The town has a population of about 27,000. The school where the research study was conducted has approximately 800 students in grades K-5. The city has a tight-knit community known for their 10-day festival with many family friendly events. The community is rapidly growing with many new developments coming up. The amount of students receiving free and reduced lunch is confidential information that only one person in food service for the district knows. The involvement of parents in the school community is very positive. The district has a Parent Teacher Organization that meets monthly. They volunteer their time and money to benefit the school, staff and the students.

Participants

The population of students for this study was 53 students. All students range from nine to ten years old and are in 4th grade for the 2022-2023 school year. The sample population was made up of 28 females (53%) and 25 males (47%). The racial breakdown is as follows: white (74%), black or African American (11%), biracial- Asian and white (6%) biracial- African American and white (4%), Asian (4%), and Latino (2%). All of the students speak English, and

only 1 of the 53 students is an EL student. The free or reduced lunch information is private information that is not available to the researchers.

Sampling

This study was composed of 53 students. All of the students in the two 4th grade classes participated in the study. These students are in their respective classes all day and do not switch teachers for different subjects, aside from specialists. The students were observed in their respective classrooms, and the data was collected and consolidated to find combined data for the study as a whole.

Instrumentation

Both teachers tracked the number of redirections needed for students to attend to their academic tasks following each type of brain break. These numbers were totaled and averaged for each type of break to see which type had the lowest number of redirections for students to refocus on their work. Student surveys were taken to gauge which type of brain break the students enjoyed the most. The goal was to see if a specific type of break is most beneficial in both areas so that redirections are minimized and enjoyment is maximized.

Brain breaks were 5-10 minutes in length and were followed directly with an academic task. Since this was completed in two different classrooms, the scores were averaged to get a clear understanding of where the sample students were as a whole. The redirections were tracked on a Google spreadsheet so that there was a single data entry point.

Data Collection

In order to accurately monitor data, both teachers tracked how many redirections they gave following brain breaks each day. Redirections were tracked on a Google spreadsheet so that it was simple to see each other's data in real time and have a common place to enter the data. This spreadsheet is broken down into the three types of brain breaks: physical, mindfulness, and a combination of both (see Appendix E).

The students also each filled out a survey at the end of the study to rate how easy it was for them to refocus after the brain break and how much they enjoyed each brain break. This survey gave them the opportunity to rate each type of brain break on a scale of one to ten (one being the lowest and ten being the highest), and to give a reason why they picked that number. It also asked them if it was "Difficult, Normal, or Easy" for them to refocus on their task after each type of brain break, and gave them an opportunity to explain their answer (see Appendix F).

Data Analysis

The scores from both classes were combined for the three types of brain breaks. Each category was averaged to find the mean for each type of brain break. The scores from the enjoyment section on the student survey were also averaged to find which type of brain break was most enjoyable for students. The second section of the student survey was taken into consideration and compared with the redirections data taken by teachers to see if the student perception matches the data. The data was examined to see which type of brain break had a more positive impact on student focus, meaning the lowest amount of redirections with high student enjoyment.

Research Questions and System Alignment

Table 3.1.

Research Question(s) Alignment

Research Question	Variables	Design	Instrument	Validity & Reliability	Technique (e.g., interview)	Source
RQ1: What type of brain break is the most effective to engage students? RQ2: What type of brain break is the most effective to regain focus?	DV: Student engagement in academic lessons DV: Student enjoyment in the brain breaks IV: Type of brain break	Mixed method quasi-experimental design	DV: A student recording form will be used to note the student enjoyment in the brain breaks. A teacher recording form will be used to note the engagement in academic lessons following the brain break. IV: A physical, mindfulness and combination of both brain breaks will be implemented.	For this study, the same brain breaks in both of the classrooms will be used. The same type of brain breaks will be done on certain days as well.	Teacher observations during the brain breaks will be done to record how many students need to be redirected back to academics. A student recording form/survey will be sent out for them to rate how well they enjoyed each type of brain break.	4th grade students Approximately 53 students

Procedures

This study took place over a 30 day time period in two different 4th grade classrooms. All students participated in the brain breaks. On days 1-10, the students completed physical brain breaks. From days 11-20, students completed mindfulness brain breaks. From days 21-30, students did a combination of physical and mindfulness breaks. These were activities used to get their heart rate up followed by breathing exercises. The number of redirections given, following each brain break, were recorded. The participants were given the student tracking form after day 10, day 20 and day 30.

Ethical Considerations

The ideal classroom environment is one that allows students to move their bodies and minds in addition to learning. The teachers monitored and observed the students to ensure that they felt comfortable with these brain breaks. The student tracking form was used to monitor the enjoyment of the breaks. These breaks took place in the classroom and were safe for all students.

Conclusions

This chapter discussed how the data was collected, interpreted, and analyzed from the study. A specific data tracking table that was used, as well as three student surveys that were used to collect the data across two fourth grade classrooms in order to achieve the highest level of accuracy possible. In the next chapter, the overall results and the findings from this study will be discussed.

CHAPTER 4

RESULTS

Introduction

The purpose of this study was to determine which type of brain break was most engaging for students and to find which type was most effective in regards to students being able to focus on their academic tasks following the brain break. Many elementary school teachers use brain breaks in their classrooms and are unsure of which brain breaks are most effective to use with their students. The researchers wanted to determine which breaks students most enjoy and which allow students to regain their focus on the task given to them most effectively following the breaks.

Description of Data

Three types of brain breaks were implemented within two fourth grade classrooms. They were used in between reader's and writer's workshops, which occurred in the afternoon for both classrooms. The three types of breaks were physical breaks, mindfulness breaks, and a combination of the two, which included a quick movement followed by a breathing exercise. Each type of break was implemented for about five minutes within each class for a time period of two weeks. Each day, after the brain break was completed, the classroom teacher filled out a spreadsheet with two types of data. The first was a quantitative observation that tracked the number of times the students needed to be redirected to their academic work following the brain break. The second was a qualitative observation that described perceived engagement and enjoyment from students during the brain break.

Upon completion of each two week cycle, the students filled out a reflection sheet with two questions on it. The first question asked how much the student enjoyed the specific type of brain break on a scale of 1-10 (1 being the lowest and 10 being the highest). The follow up question asked them to explain their reasoning for why they chose that number. The second question asked the students which word best described how it felt for them to be able to refocus on the academic task following each type of brain break. The students had the option to circle one of the three words: easy, normal, or difficult. Then they had to reflect on why they chose that particular word. It is important to note that the researchers reminded the students before each brain break of the importance of being mindful as to how their mind and bodies felt during the brain break.

The study was conducted over a six week time frame, with both researchers analyzing data following each two week cycle. The researchers first analyzed data from their respective classrooms. Then, the researchers compared their data to find similarities and differences and finally, combined data to find averages between both classrooms. Following the study, the researchers noticed a few observations over the course of the study that were not measured within the study, but did show impacts in regard to brain breaks and student focus.

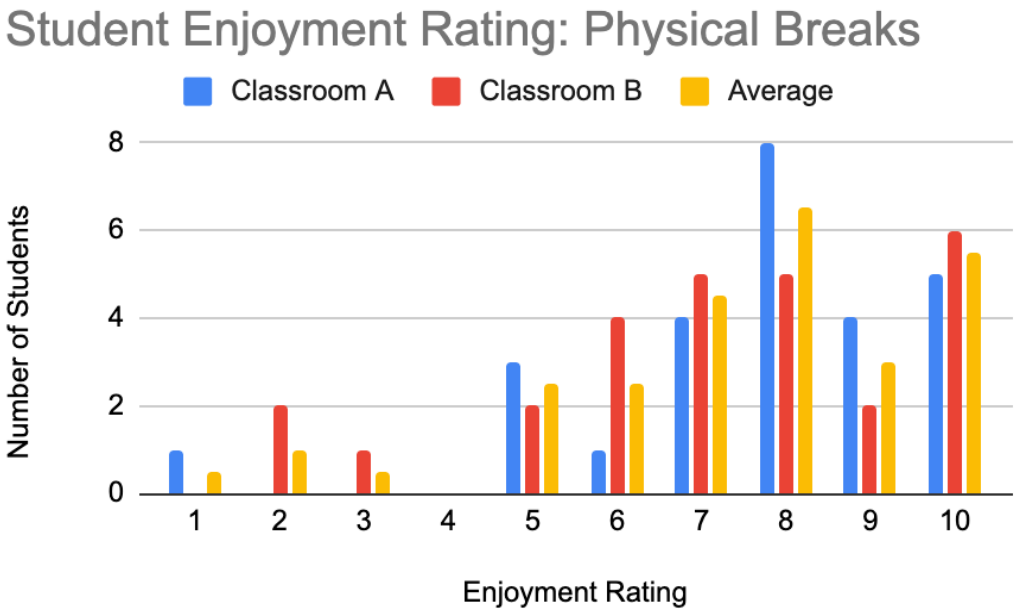
Results

While the researchers analyzed their own data following each two week cycle for each brain break, the researchers noticed that there were some common patterns within the data. The graphs below indicate the data for classrooms A and B, respectively and the average of the classrooms' combined data. By putting the data into graphs, the researchers could compare the types of brain breaks and student responses more efficiently.

Research Question 1: What type of brain break is the most effective to engage students?

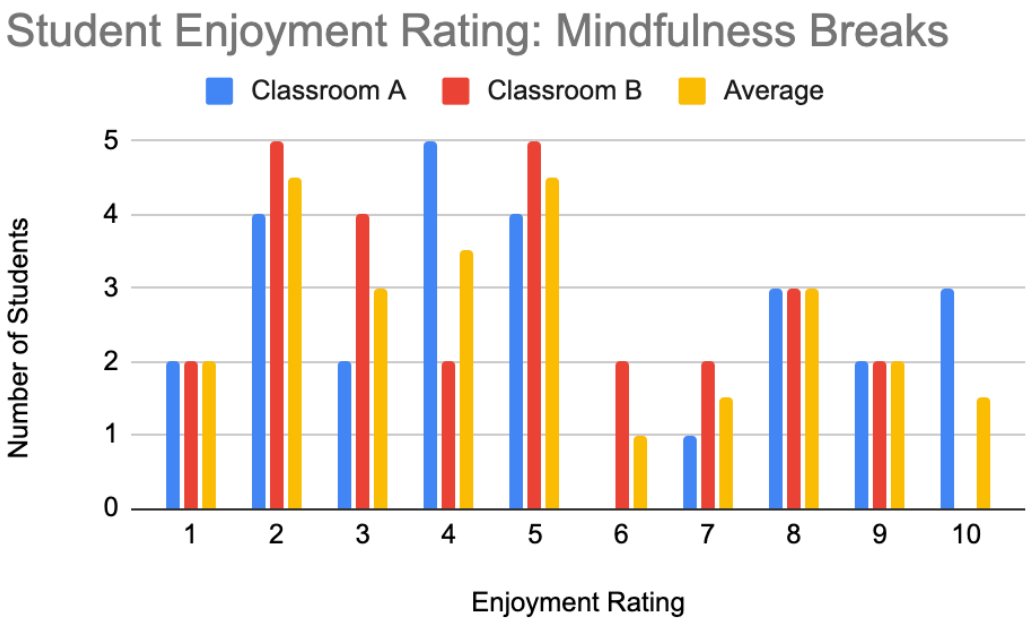
Data set 1.1 (shown below) shows the results from the student responses at the end of the first two week period of the three types of brain breaks: physical brain breaks. Data collection includes fifty-three fourth grade students. Further breakdown of the data shows students' rating on a scale of 1-10, based on enjoyment for the two week cycle of mindfulness brain breaks in Classroom A, Classroom B, and an average for both classrooms, respectively.

Data Set 1.1



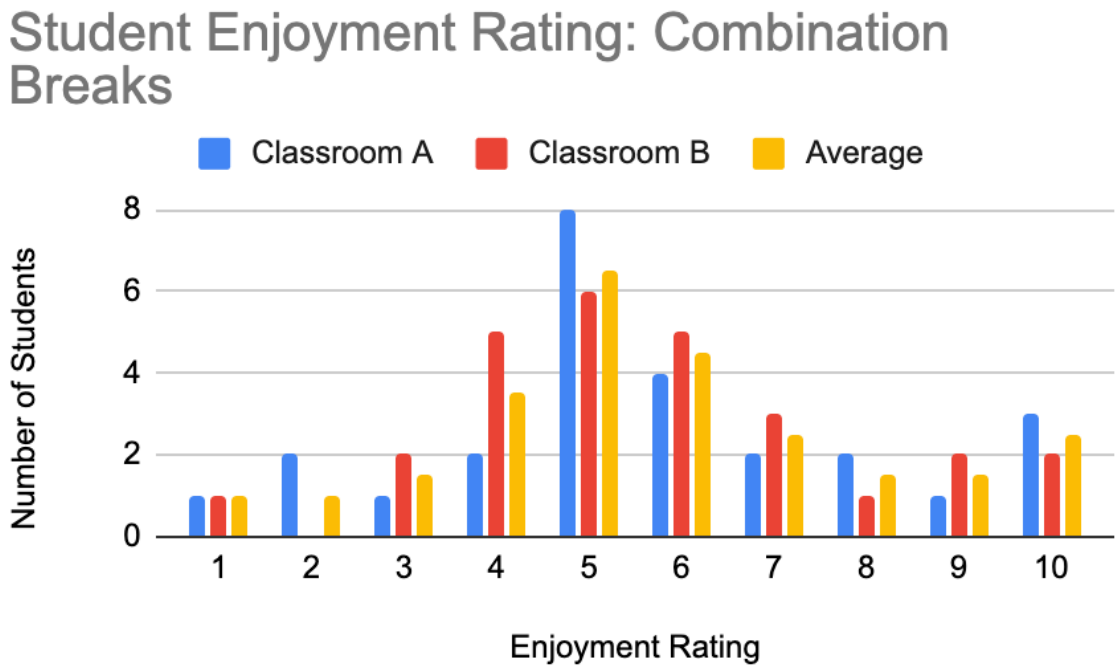
Data set 1.2 (shown below) shows the results from the student responses at the end of the second two week period of the three types of brain breaks: mindfulness brain breaks. Data collection includes fifty-three fourth grade students. Further breakdown of the data shows students' rating on a scale of 1-10, based on enjoyment for the two week cycle of mindfulness brain breaks in Classroom A, Classroom B, and an average for both classrooms, respectively.

Data Set 1.2



Data set 1.3 (shown below) shows the results from the student responses at the end of the first two week period of the three types of brain breaks: combination brain breaks. Data collection includes fifty-three fourth grade students. Further breakdown of the data shows students' rating on a scale of 1-10, based on enjoyment for the two week cycle of combination brain breaks in Classroom A, Classroom B, and an average for both classrooms, respectively.

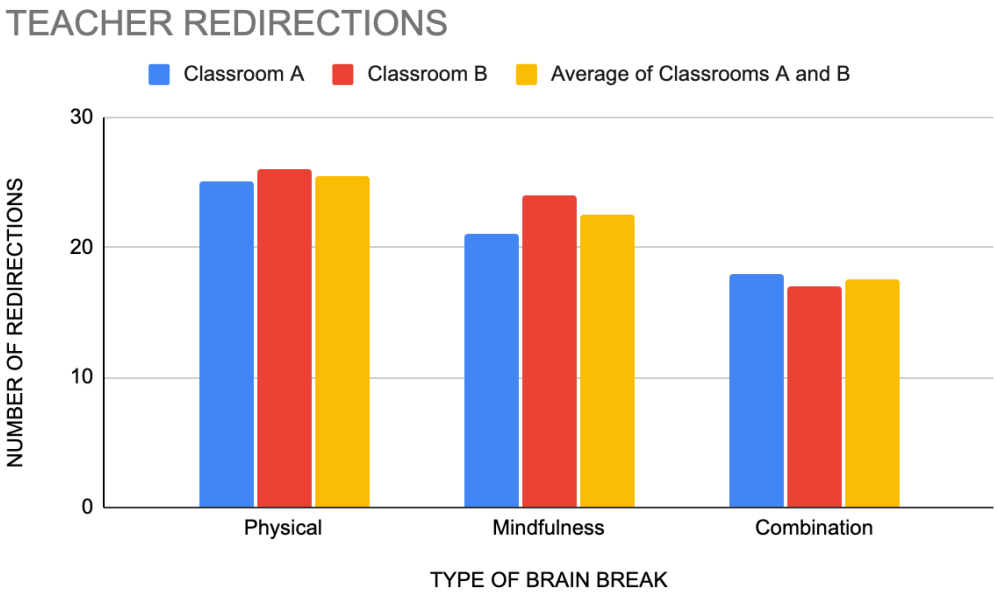
Data Set 1.3



Research Question 2: What type of brain break is most effective to regain focus?

Data set 1.4 (shown below) shows the results of the number of redirections the teacher had to give in order for students to go back to the task at hand following each type of brain break. After the brain break, each teacher would record the number of redirections given to students. Data set 1.4 shows the data for classroom A, classroom B, and an average of both classrooms, respectively.

Data Set 1.4



Data Analysis

The results of the study were moderately consistent between the two experimental groups. The researchers worked together to plan out the daily brain breaks so both classes would complete the same specific brain breaks each day. The classes also implemented the brain breaks at the same time of day. The student tracking forms showed that most of the students found it normal to refocus on their academic task following the mindfulness brain breaks and the majority of students found it easy to refocus following the physical brain breaks. This contradicted the data found from tracking the redirections following the physical brain breaks. The physical breaks took the most amount of redirections to refocus, compared to mindfulness and combination breaks (See Data Set 1.4). Some of the students mentioned that they chose the word 'normal' for the mindfulness breaks because the breathing or yoga did not make them feel different or it made them more tired. The physical brain breaks were the most highly rated by

students, the mindfulness ratings were lowest, while the combination breaks remained consistent with an average rating number (approximately 5 out of 10) (See Data Sets 1.1, 1.2, and 1.3). It was highly evident that the combination breaks resulted in fewer redirections during their academic work time (See Data Set 1.4).

The combination brain break, a movement break followed by breathing, is the most effective solution, because it had the lowest average redirections, in comparison to the physical breaks and mindfulness breaks, while still being engaging to the students. Although the physical breaks had the highest enjoyment student rating, the redirection average was 25.5 for the two weeks, whereas the combination break redirection average was at 17.5 (See Data Set 1.4). The data shows that the combination brain break had less redirections than the mindfulness and physical brain breaks. This was also evident to the researchers in real time during the study, as students were focused and ready to learn consistently following these types of breaks.

Conclusion

The importance of this study was to gain knowledge on what type of brain break is most effective and engaging for upper elementary students. The researchers are now able to spread awareness to other colleagues on their findings about brain breaks. This study indicated that there is a correlation between movement and focus. Specifically, students in elementary school need to get up and move around in order to be focused and productive on school work. The researchers also found that teaching students these strategies of movement and mindfulness, can be useful to individual students who need movement breaks more often than the rest of the class.

The baseline data, prior to the study, of no brain breaks during this time period, to regular brain breaks in the afternoon during the study, showed to be effective for student engagement and classroom focus following the brain break. As stated earlier, the researchers were unsure of which type of brain break was well liked by students and proved to be efficient. The study found that upper elementary students enjoyed the movement breaks but then also needed the mindfulness breathing break to calm their bodies down after something that sped up their heart rate. The data showed that the physical breaks were the breaks that students enjoyed most, but the most effective for student focus following the break was the combination breaks. Based on this information, the researchers concluded that the combination breaks are the most ideal break type to remain engaging for students, yet still create a calm and focused classroom environment.

CHAPTER 5

IMPLICATIONS FOR PRACTICE

Action Plan

After collecting and analyzing the data from the study, it is the researchers' intention to continue utilizing brain breaks within the classroom. More specifically, the researchers will more effectively integrate specific types of brain breaks into their classrooms based on the data found. The data showed that the most effective type of breaks for student engagement and regaining focus was the combination breaks. The researchers have concluded that they will implement this type of brain break most often, in order to give students a chance to move while still being able to transition back into academic tasks without a high level of distraction following the break. Additionally, the researchers will continue to monitor students' needs to identify which brain breaks they need, and implement physical breaks and mindfulness breaks when necessary.

The researchers also plan on sharing their findings among their 4th grade team members, the school leadership team, and administration. In addition to sharing the information, the researchers have created resources to share with colleagues (See Appendix G). The resource includes three cards (front and back) that would be printed and laminated, and then ideally, attached to lanyards. The cards include the three types of brain breaks, and possible times for when teachers may want to use them. It shows physical breaks with a reminder that these may be best used when the students need a large activity for movement. The mindfulness breaks should be used after transitions to help calm the students' bodies. Finally, the combination breaks should be used between lessons to help students move their body while still making a smooth transition back to their academic tasks. This will help remind and guide teachers when deciding on which

type of break to implement. Within each section, there are specific breaks to make it more accessible for teachers to use. With the abundance of breaks available, the goal is that this resource makes it easier for teachers to implement.

The hope is that this information will eventually be shared with all staff members at the researchers' school and potentially members across the district. Furthermore, the school should be providing professional development and coaching in order to support staff in feeling comfortable when implementing brain breaks. This will help provide consistency throughout the school, and across grade levels, and ensure that it becomes practical and manageable for teachers to implement.

Plan for Sharing

The information and data should be shared with all staff at the researchers' school, as well as the district personnel. This will empower all district staff to implement brain breaks into their class in an effective way. The researchers' long-term goal is that consistent and effective professional development be held each year so that staff members become confident and comfortable implementing brain breaks within their own classrooms. It would also be the researchers' goal to train 4th graders from the sample classrooms in leading brain breaks, so that they could lead and model brain breaks for primary classrooms and help create a transition that is seamless and comfortable for teachers and students.

It is important to note that although most K-5 teachers across the district already implement brain breaks in their classrooms, this information and new method would be taught, modeled, and practiced ahead of time, so that the following school year would transition

smoothly. The Brain Break Resource Cards created by the researchers (See Appendix G) would be a tool that teachers could use to choose an appropriate brain break type with suggestions for that type. There were also spots left blank for each type of brain break so that each teacher could personalize their cards and add breaks that work well for their class.

Long-term buy-in is the ultimate goal. In order for brain breaks to have a consistent impact on students, teachers and administrators will need to work together to attend professional development and make resources available to all staff members.

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Appendix A: Informed Consent

Rosemount Elementary
3155 143rd St W.
Rosemount, MN 55068
November 20th, 2022

Dear Parent or Guardian,

Your child has been invited to participate in a study to see if brain breaks throughout the school day will help regain their attention and help them refocus on academic tasks. Three different types/combinations of brain breaks will be used in the study. This study will be conducted in two 4th grade classrooms at Rosemount Elementary School: Ms. McWilliams' classroom and Mrs. Schnieder's Classroom, as part of our requirements of our graduate program at Minnesota State University Moorhead. Your child was selected to participate because he/she is in one of our 4th grade classrooms. If you give your child permission to participate, please understand that your child will be asked to do the following tasks:

1. Your child will participate in brain breaks in between reader's workshop and writer's workshop lessons, which will occur from about 2:50-3:00PM.
2. Your child will also be given a pre and post-test to evaluate their feelings towards brain breaks and to assess their enjoyment of each particular break.

These brain breaks are all typical activities in our classroom, and involve no risk to your child. Principal Tom Idstrom has granted us permission to conduct this study; however, because this information is being used in our graduate program classes at MSUM, we need to have parental consent to use this information in our final paper that will be used to complete our degree. If you sign this form, you are giving us consent to use the information that we gather. The information will all be kept confidential, so no names will be used. Please also note that your child always has the option to not participate in these activities if he or she chooses.

If you have any questions at all regarding this study or the use of this information, please contact either classroom teacher at stephanie.mcwilliams@district196.org or hannah.schnieder@district196.org. Any questions about your rights may be directed to Dr. Robert Nava, Ph. D., Chair of the MSUM Institutional Review Board, at 218-477-2699 or irb@mnstate.edu You will be given a copy of this form to keep for your records.

Your signature below indicates that you have read the information provided above and have decided to participate. You may withdraw your consent at any time without penalty, should you choose to discontinue your child's participation in this study. Thank you for your consideration!

_____ _____
Signature of Parent or Guardian Date

_____ _____
Signature of Investigator Date

Appendix B: IRB Approval Letter

Institutional Review Board

MINNESOTA STATE UNIVERSITY MOORHEAD

DATE:	February 17, 2023
TO:	Stephanie McWilliams, Principal Investigator Hannah Jaeger, Co-investigator
FROM:	Dr. Robert Nava, Chair Minnesota State University Moorhead IRB
ACTION:	**APPROVED**
PROJECT TITLE:	[2008943-1] Impact of Brain Breaks on Student Engagement in an Upper-Elementary Classroom
SUBMISSION TYPE:	New Project
APPROVAL DATE:	February 17, 2023
EXPIRATION DATE:	
REVIEW TYPE:	Exempt Review

Thank you for your submission of New Project materials for this project. The Minnesota State University Moorhead IRB has APPROVED your submission. This approval is based on an appropriate risk/benefit ratio and a project design wherein the risks have been minimized. All research must be conducted in accordance with this approved submission.

This submission has received Exempt Review based on the applicable federal regulation.

Please remember that informed consent is a process beginning with a description of the project and insurance of participant understanding followed by a signed consent form. Informed consent must continue throughout the project via a dialogue between the researcher and research participant. Federal regulations require that each participant receives a copy of the consent document.

Please note that any revision to previously approved materials must be approved by this committee prior to initiation. Please use the appropriate revision forms for this procedure.

All UNANTICIPATED PROBLEMS involving risks to subjects or others and SERIOUS and UNEXPECTED adverse events must be reported promptly to the Minnesota State University Moorhead IRB. Please use the appropriate reporting forms for this procedure. All FDA and sponsor reporting requirements should also be followed.

All NON-COMPLIANCE issues or COMPLAINTS regarding this project must be reported promptly to the Minnesota State University Moorhead IRB.

This project has been determined to be a project. Based on the risks, this project requires continuing review by this committee on an annual basis. Please use the appropriate forms for this procedure. Your documentation for continuing review must be received with sufficient time for review and continued approval before the expiration date of .

Please note that all research records must be retained for a minimum of three years after the completion of the project.

If you have any questions, please contact the Minnesota State University Moorhead IRB. Please include your project title and reference number in all correspondence with this committee.

This letter has been issued in accordance with all applicable regulations, and a copy is retained within Minnesota State University Moorhead's records.

Appendix C: Independent School District 196 Approval Letter

INDEPENDENT SCHOOL DISTRICT 196
Rosemount-Apple Valley-Eagan Public Schools
Educating our students to reach their full potential

Series Number **801.9P** Adopted **September 1990** Revised **August 2009**

Title **Request to Conduct Research in District 196**

Name Stephanie McWilliams Phone 701-215-2929
(please print)

Email stephanie.mcwilliams@apps.district196.org Fax

Address 18618 Euclid Path Farmington, MN 55024

Title of research project Impact of Brain Breaks on Student Engagement in an Upper-Elementary Classroom

Research institution Minnesota State University of Moorhead

School(s) or populations being studied Rosemount Elementary

Anticipated beginning date 2-20-23 Ending date 4-30-23

On a separate sheet of paper, describe:

- Purpose of research;
- Planned use of results;
- Your qualifications;
- How the rights and privacy of human subjects will be protected, and
- How the research will benefit District 196 and/or will contribute to the advancement of education in general.

2. Attach all curriculum, forms, handouts, letters, etc. you plan to use in the study.

Stephanie McWilliams
signature

1-27-23
date

Request approved ✓

Request denied

Date request received

Does this research require access to private identifiable student data? ☐ yes ☒ no
If yes, the study must be for the purposes of developing, validating or administering predictive tests, administering student aid programs or improving instruction, and the researcher and the district must enter into an agreement pursuant to section 2.5 of 801.9AR, Use of Students, Employees and /or District Data for Research by completing page 2 of this procedure.

Rationale

Sally Holiday
signature of director

2-20-23
date

c: Superintendent
Principal(s) affected
District director(s) affected

Appendix D: Method of Assent

We will read the following to our fourth-grade students:

"Just like all of you, I am a student too. This semester, at Minnesota State University Moorhead, we are conducting a study. Your parents and/or guardians have given consent for you to participate in a research project we are conducting. It is your choice on whether you do or do not choose to participate in the study. If you choose to participate now and later, wish to stop participating, you can do that with no penalty or consequence from me, this class, or other staff. During this study, you will participate with our class in brain breaks following reader's workshop and before writer's workshop. Each brain break will last about 5 minutes and we will complete three, two week cycles. Each cycle will consist of a different type of brain break. The first two weeks will be physical breaks, the second will be mindfulness breaks, and the final cycle will be a combination break with movement and breathing. At the end of each cycle, you will complete a reflection on how much you enjoyed each type of break and how easy you felt it was to focus following those breaks. Are there any questions?"

Appendix E: Teacher Tracking Form

MCWILLIAMS		
PHYSICAL		
Date	# of Redirections	Comments
Day 1		
Day 2		
Day 3		
Day 4		
Day 5		
Day 6		
Day 7		
Day 8		
Day 9		
Day 10		
MINDULNESS		
Date	# of Redirections	Comments
Day 1		
Day 2		
Day 3		
Day 4		
Day 5		
Day 6		
Day 7		
Day 8		
Day 9		
Day 10		
MINDFULNESS		
Date	# of Redirections	Comments
Day 1		
Day 2		
Day 3		
Day 4		
Day 5		
Day 6		
Day 7		
Day 8		
Day 9		
Day 10		

JAEGER		
PHYSICAL		
Date	# of Redirections	Comments
Day 1		
Day 2		
Day 3		
Day 4		
Day 5		
Day 6		
Day 7		
Day 8		
Day 9		
Day 10		
MINDFULNESS		
Date	# of Redirections	Comments
Day 1		
Day 2		
Day 3		
Day 4		
Day 5		
Day 6		
Day 7		
Day 8		
Day 9		
Day 10		
MINDFULNESS		
Date	# of Redirections	Comments
Day 1		
Day 2		
Day 3		
Day 4		
Day 5		
Day 6		
Day 7		
Day 8		
Day 9		
Day 10		

Appendix F: Student Recording Forms

Student Recording Form: Physical Breaks

Name:_____

Date:_____

Physical Brain Breaks

On a scale of 1-10, how much did you enjoy this type of brain break? (1 being the lowest, 10 being the highest) Circle your answer.

1 2 3 4 5 6 7 8 9 10

Explain why you chose that number.

_____

_____

_____

Which word best describes how it felt for you to be able to refocus on your academic task following this type of brain break? Circle your answer.

Easy Normal Difficult

Explain why you chose that word.

_____

_____

_____

Student Recording Form: Mindfulness Breaks

Name:_____

Date:_____

Mindfulness Brain Breaks

On a scale of 1-10, how much did you enjoy this type of brain break? (1 being the lowest, 10 being the highest) Circle your answer.

1 2 3 4 5 6 7 8 9 10

Explain why you chose that number.

_____

_____

_____

Which word best describes how it felt for you to be able to refocus on your academic task following this type of brain break? Circle your answer.

Easy Normal Difficult

Explain why you chose that word.

_____

_____

_____

Student Recording Form: Combination Breaks

Name:_____

Date:_____

Combination Brain Breaks

On a scale of 1-10, how much did you enjoy this type of brain break? (1 being the lowest, 10 being the highest) Circle your answer.

1 2 3 4 5 6 7 8 9 10

Explain why you chose that number.

_____

_____

_____

Which word best describes how it felt for you to be able to refocus on your academic task following this type of brain break? Circle your answer.

Easy Normal Difficult

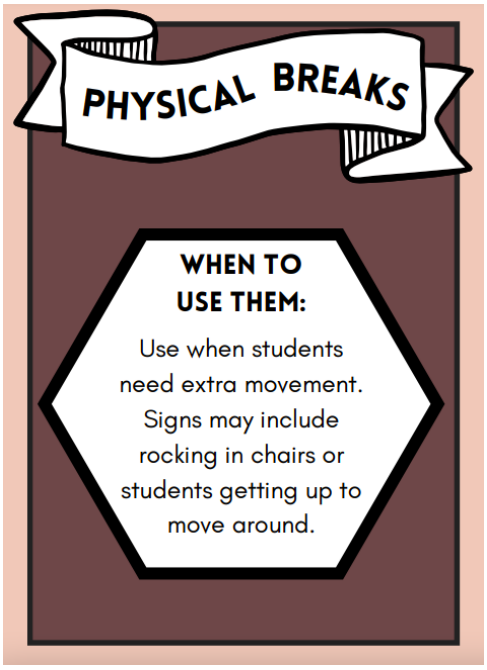
Explain why you chose that word.

_____

_____

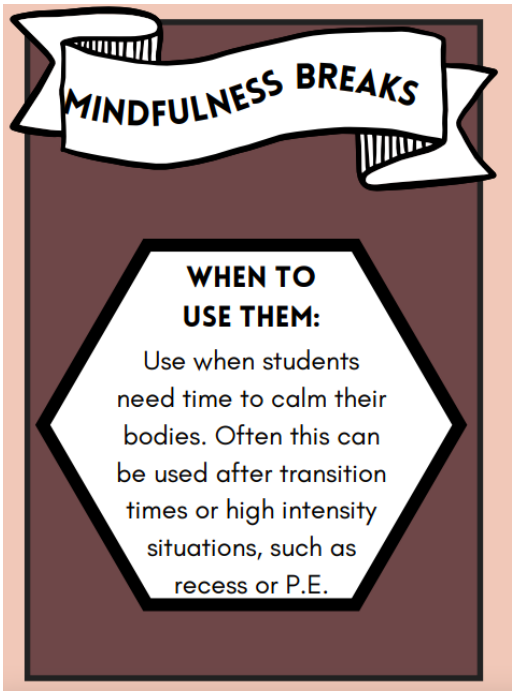
_____

Appendix G: Brain Break Resource Cards



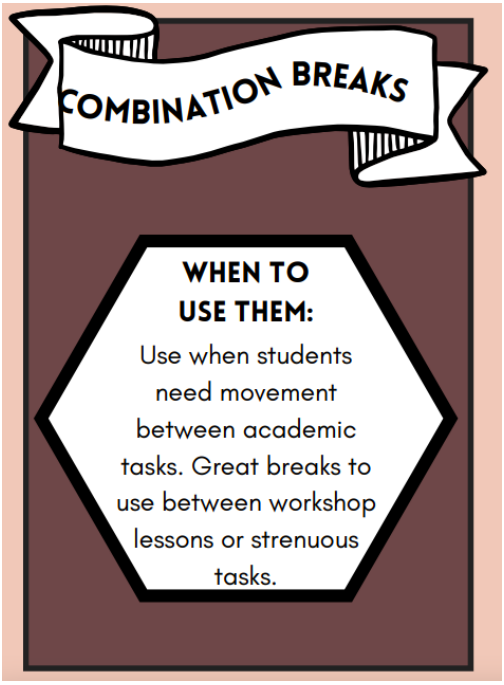
Front of Card

Back of Card



Front of Card

Back of Card



Front of Card

Back of Card