

The Effect of Brain Breaks on Behavioral Disruptions in Second Grade Students

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Table of Contents

List of Tables	i
Abstract	ii
I. Introduction	1
Statement of the Problem	2
Hypothesis	3
Operational Definitions	3
II. Review of the Literature	4
Defining Disruptive Behavior	4
Causes of Disruptive Behavior	5
What Helps Reduce Disruptive Behavior?	6
Defining Brain Breaks	8
Types of Brain Breaks	8
Effects of Using Brain Breaks	10
Summary	11
III. Methods	12
Design	12
Subjects	12
Instruments	13
Procedure	13
IV. Results	14
Table 1	14
V. Discussion	15

Description of Results	15
Implications	15
Threats to Validity	16
Connections to Literature	16
Implications for Future Research	17
References	18

List of Tables

1. Behavioral Disruptions for Three Types of Brain Breaks	14
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Abstract

The purpose of this study was to determine if brain breaks influence behavioral disruptions in second grade students. The measurement tool used during this study was self-developed for conducting observations on the students. Average calling out behavioral disruptions for each of the brain breaks were compared, but the difference among them were not statistically significant. Further research on this topic with a larger sample size and control group would be beneficial to determine the effects of brain breaks on behavioral disruptions in second grade students.

CHAPTER I

INTRODUCTION

Disruptive behaviors can be a leading cause of students falling behind in their studies. Those with off-task behaviors attract peer attention. According to McDaniel and Flower (2015), disruptive behaviors include aggressive behaviors, defiant behaviors, or loud yelling or crying. Some examples of these behaviors are arguing with others, disobeying rules, or throwing things. Intervening with the behaviors right away is more likely to reduce them and allow for continuation of instruction.

Younger students often have difficulty sitting still for extended periods of time, which could be a source of these behaviors. They are likely to lose focus and become unengaged in the lesson. Children may become fidgety, which is an indicator that they are not moving enough during the day (Strauss as cited in Wiebelhaus & Hanson, 2016). Creating engaging lessons that get students up, moving, and interacting with one another will reduce the amount of disruptive behaviors in the class. They will be able to release their energy while learning.

There are many different consequences that can occur when students are conducting disruptive behavior. This depends on the teacher or school policy. Often teachers will use the disruptive behavior as a teachable moment. “Basic teaching or so-called *academic talk* is defined as the teacher engaging in behaviors that include explaining a concept, demonstrating a principle, or modeling a skill/activity associated with an academic topic while furthering the lesson/objective of the class” (Gage, N. A., Scott, T., Hirn, R., & MacSuga-Gage, A., 2018, p.303). This keeps the students engaged in the lesson while identifying how to solve the behavior issue.

Brain breaks are considered the “brief amount of time spent moving one’s body in an organized or planned way in order to expend physical energy, aid in coordination, or build muscle and add strength to one’s body” (Dennison as cited in Nixon, 2008, p. 1). They are beneficial in all classrooms, but especially those primary classes with young children. This time allows for the students to get up and moving, releasing some of their energy.

There are diverse types of brain breaks that can be used in the classroom setting. For example, yoga calms students and allows them to get focused and back on task. It also provides time for meditation. Another brain break is Go Noodle. This is a website where teachers can get students up and moving with guided dance videos, meditation, or other silly exercises. The students get extremely excited about them and some even have math, reading, or other educational topics involved. Additionally, brain breaks can be basic physical activity. This can be as simple as having students rotate around the room to complete activities. They could do a simple movement at each station before they start, such as jumping jacks or squats. Movements can even be used to learn certain topics in class. For example, students could use their bodies to spell words or create math symbols when adding or subtracting. These simple movements allow students to exercise while learning.

Research on brain breaks has provided evidence that they have significant effects on students and their behaviors. They are more likely to reduce disruptive behavior and give students a chance to release energy. Once the disruptions lessen, more instruction will be able to take place to keep their learning on track.

Statement of the Problem

What is the effect of frequent brain breaks on behavioral disruptions in second grade students?

Hypothesis

The amount of behavioral disruptions in second grade students who are given brain breaks in between subjects is not significantly different than the amount of behavioral disruptions of those who do not receive brain breaks in between subjects.

Operational Definitions

Behavioral Disruptions. Behavioral disruptions are defined as “disengagement in that it involves behaviors that draw the focus of the teacher, and perhaps the entire classroom, away from instruction or expected tasks” (Gage et al., 2018, p.303). These behaviors can cause individuals, or classes, to fall behind in the curriculum because of the frequent need to pause instruction to deal with these situations. The behaviors the study monitors are calling out, arguing with others, throwing things, and yelling.

Brain Breaks. Brain breaks are used to get students up and moving during instruction. They can be defined as a “brief amount of time spent moving one’s body in an organized or planned way in order to expend physical energy, aid in coordination, or build muscle and add strength to one’s body” (Dennison, 1985 as cited in Nixon, 2008, p.1). The study will use brain breaks such as Go Noodle, which is an interactive website, kinesthetic movements to go with topics in the curriculum, yoga, and meditation.

Reduction of Disruption. Reduction of disruptive behavior can be seen through the decrease in amount of disruptions throughout class instruction. It will be assessed through anecdotal notes based on observations of the subjects. A checklist will also be used to quickly identify the student and the behavior disruption observed.

CHAPTER II

REVIEW OF THE LITERATURE

This review of the literature aims to explore the impact of brain breaks on behavioral disruptions in elementary students. Section one provides an overview of disruptive behavior, its definition, causes, and what interventions can be used to reduce disruptive behaviors. Section two discusses what brain breaks are, the several types, and the effects of using them in the classroom. The literature review notes the developmental issues of early elementary students, for whom integrating physical movement into the school day is crucial. They can only sit still for so long, which results in frequent disruptions. The researcher wanted to see what studies have determined about the impact of movement on disruptions in the classroom.

Defining Disruptive Behavior

Teachers, resource staff, and researchers often define disruptive behavior in unusual ways. One definition is “disengagement in that it involves behaviors that draw the focus of the teacher, and perhaps the entire classroom, away from instruction or expected tasks” (Gage, Scott, Hirn, & MacSuga-Gage, 2018, p. 303). Disruptive behavior can cause individuals, or classes, to fall behind in the curriculum because of the frequent need to pause instruction to deal with these behaviors.

According to McDaniel and Flower (2015), disruptive behaviors include aggressive behaviors, defiant behaviors, or loud yelling or crying. Cholewa, Smith-Adcock, and Amatea (2010) further the explanation of these behaviors to give specific examples. Some more severe disruptive behaviors include students’ arguing with classmates, becoming angry or annoyed easily, throwing things, losing their tempers, disobeying rules, and showing defiance toward the

teacher and other students. These behaviors make it difficult for a teacher to continue instruction, as well as for other students to learn.

Purwati and Japar (2017), state that disruptive behavior is negative behavior which is harmful to oneself and others. They cite Schroeder and Gordon's 2002 description of disruptive behavior, which notes, "Disruptive behavior is a type of negative behavior such as raging violently, whimpering, or crying excessively, getting attention, not obeying, string against others, showing the aggressiveness that may harm oneself for other, thieving, lying, wrecking stuff and being naughty" (p.228). All these disruptive behaviors cause distractions for the teacher and other students in the room, and many require the teacher to focus all of his or her attention on the disruptive child so that no one is harmed before the child settles down.

Causes of Disruptive Behavior

Young children have difficulty sitting still for prolonged periods of time. They often lose focus and become restless, unengaged in the lesson. Children may become fidgety, which is an indicator that they are not moving enough during the day (Strauss as cited in Wiebelhaus & Hanson, 2016). This fidgeting and off-task behavior will often result in the disruptive behavior described above.

"Disruptive behavior in early childhood will give long term effects (Alatupa et al., 2011) and will consistently be influenced by the parents' and teachers' condition" (Brennan, Shaw, Dishion, & Wilson as cited by Purwati & Japar, 2017, p.228). When children are young, they are like sponges. They constantly watch and mimic what others are doing. If a child has a difficult home life, one where his or her parents often fight or he or she hears and sees violence, chances are the child will show this type of behavior at school. Without good role models demonstrating how to behave appropriately, children will not know what good behavior looks like when it

comes to being in a school setting with other children. Parents and teachers must always be mindful of their words and actions since young children are always watching and listening.

Schroeder and Gordon (as cited in Purwati & Japar, 2017), stated that there are five factors causing disruptive behavior in children. These factors are genetic, sexual, temperamental, parenting dysfunctional, and environmental. The condition of the family environment plays a crucial role in the behavior of the child. If the child comes from a caring home environment, the child is more likely to behave with respect. If the child comes from a home at the other end of that extreme, then they are more likely to show the disruptive behaviors.

According to Purwati and Japar (2017), disruptive behavior may happen based on internal or external aspects. An internal aspect comes from within the child him or herself. These are the child's behavior and action choices. An external aspect comes from the environment, such as family, school, and society. Parents are the main aspect that has an influence on their child. Marital distress and parenting styles have an enormous impact on the child being prone to exhibit disruptive behavior.

What Helps Reduce Disruptive Behavior?

In today's educational world, difficult behaviors are dealt with in the classroom by the teacher, except for extreme cases. Disruptive behavior in some students can be difficult for teachers to handle and sometimes requires interventions be in place to maintain safety and control of the classroom. Some strategies can be as simple as having a teachable moment within the demonstrated behavior. "Basic teaching or so-called *academic talk* is defined as the teacher engaging in behaviors that include explaining a concept, demonstrating a principle, or modeling a skill/activity associated with an academic topic while furthering the lesson/objective of the class" (Gage et al., 2018, p.303). When a teacher explains his or her expectations and addresses

the behavior immediately, it is less likely to occur again. This intervention is similar to Colvin and Scott's debriefing activities (McDaniel & Flower, 2015). These activities were created to assist students in using more appropriate behaviors in the future, as well as being able to successfully engage in the activities again.

The Raising Healthy Children program, formerly known as Skills, Opportunity, and Recognition (SOAR), was designed to intervene and reduce aggressive behaviors in children from kindergarten through third grade (Catalano, Haggerty, Oesterle, Fleming, & Hawkins as cited in Cholewa et al., 2010). This program involves teacher training, parent training, and student skill development, which helps to build connections among the most important people connected to the child. The teacher training includes skills such as establishing routines, giving clear instructions, and intervening early to keep disruptions from becoming an escalating. Parenting workshops assist in educating the parents regarding child-rearing skills, decreasing family conflict, setting clear rules, and developing academic support skills. Children are given direct cognitive and social skills training in the classroom setting. The teacher of the program helps the children develop skills, such as listening, problem solving, and anger management that are intended to reduce disruptive behavior.

One other program that could reduce the disruptive behavior is "Incredible Years." This program was originally designed to assist parents with children aged two to eight years old in coping with common behavior problems, but it has evolved into a classroom curriculum to develop a child's social skills and problem-solving (Webster-Stratton & Reid as cited in Cholewa et al., 2010). This program also involves group sessions about child management for parents, and separate small group interventions for those students with more severe behavior

problems. Proper training in this program would be beneficial to ensure the best possible support for the child from the parents and teacher and help reduce behavioral disruptions.

Defining Brain Breaks

Physical activity is necessary for everyone, especially young children. Brain breaks, also known as movement breaks, are defined as a “brief amount of time spent moving one’s body in an organized or planned way in order to expend physical energy, aid in coordination, or build muscle and add strength to one’s body” (Dennison as cited in Nixon, 2008, p. 1). Some elementary curricula, such as the one in Anne Arundel County Public Schools in Maryland, have these breaks built into their daily schedule. There are many different options regarding what activity can be completed, and physical activity levels vary among brain breaks. Teachers or students can lead classroom-based brain breaks; and it is notable that some students may respond better to a student acting as the leader in the activity. The activities can range from a minute or two long, to five to ten minutes long. Either way, research suggests there are lasting benefits to the brain break.

According to Chiang and Griego (2017), physical exercise can lead to observable changes in brain structure and function. This not only benefits the body, but also the mind. Students are more likely to be more focused and engaged when given breaks to perform physical movements. Brain breaks are beneficial ways for students to refocus their attention throughout the day.

Types of Brain Breaks

Brain breaks are considered to be any type of physical movement activity conducted that essentially “gives the brain a break.” Several types are described in the literature and below.

One type of brain break is BrainDance physical activity. This is a warm-up exercise that combines both physical and mental activity. It consists of a series of physical movements based on the eight major movement patterns in infants' brain development. It was developed to enhance learning by encouraging neurological re-patterning and encouraging body connectivity and alignment (Chiang & Griego, 2017). Studies show BrainDance physical activity improves focus, use of sense, multiple senses, and restlessness.

Another type of brain break is basic physical activity. With the decline in recess and elementary students having limited time for physical education, sometimes only for one hour a week, there is a need for physical activity to take place in the classroom. Camahalan and Ipock (2015) conducted a study on improving student learning in math using physical activity breaks during classroom lessons. Some activities administered were standing up and using hand motions to represent the acronym the students learned for long division, rotating through 15 minutes of academics and five minutes of physical activity, and beginning a lesson by stretching and doing jumping jacks. The results of the study suggested all of these activities were associated with decreased off task behaviors and increased learning of academic content.

Yoga is another beneficial type of brain break that can easily be used in the classroom, often as meditation. It can help to relieve stressors and allow students to get back on task. Using yoga in the classroom has proven to have positive results such as, "fewer fights and arguments among students; better student decision making; increased self-awareness and self-esteem; improved concentration and retention; and more efficient use of class time" (Arbeau, 2016, p. 35). Many students come to school with extra baggage, such as a broken family, little food to eat, and unwashed clothes. Yoga is an excellent way for students to feel at peace and be able to regain control of themselves to properly function and meet the demands of schooling.

Go Noodle is a program that can also be used as a brain break. It is a free website where classroom teachers can get students up and moving for three to five minutes. Ward (2015) stated, “All of the ‘brain breaks’ on the Go Noodle website are healthy for the physical body as well as beneficial to the brain. Go Noodle encourages students to practice dances, perform yoga, take part in silly exercises, or try breathing exercises” (p. 10). The breaks are fun, and students often do not even realize that they are exercising their bodies and minds at the same time.

Effects of Using Brain Breaks

Many researchers have found that brain breaks have tremendous behavioral, social, emotional, and academic effects on students. According to Nixon (2008), general physical movement has shown to have a positive relationship with the healthy functioning of cardiac, muscle, joint, and pulmonary functioning. In addition to relationships between brain breaks and the body, research also shows a positive impact between the amount of movement one has and mood, as well as cognitive functioning.

Foran, Mannion, and Rutherford (2017) explored elementary teachers’ perceptions of their self-initiated implementation of classroom physical activity. When teachers noticed their students were lacking focus, they used a physical activity to change perceived the energy level in the classroom. The results showed a connection between improved student focus and physical activity. Not only were the students getting the exercise that they need daily, but they also were more focused on their work, and improving their academics.

Park and Moon (2018) investigated how early morning physical activity affects elementary students’ physical fitness and sociality. The results demonstrated improvements in cardiorespiratory endurance and muscle strength, which included flexibility. They also suggested the activity had a positive effect on students’ sociality and relationships with one another. Brain

breaks and exercise allow students to not only get up and moving but give them a chance to build relationships with their classmates.

Summary

Physical activity is crucial for all children but is especially beneficial for young students who are only able to sit still or concentrate for a short amount of time, which can result in behavioral disruptions. Behavioral disruptions are those that draw attention away from education and can include aggressive behavior, calling out, and arguing with others. The teacher must quickly intervene with these behaviors to ensure there is no harm done to others and to be able to continue with instruction. The studies reviewed suggest that the use of frequent brain breaks helps children to get their bodies moving and refocus their attention to continue being engaged in the lessons at hand, as well as having physical and social benefits. The many benefits of brain breaks include improvements in muscle strength, social skills, and a more positive attitude towards school and learning. Given these findings, continued use and study of brain breaks appears warranted and likely to be effective in the reduction of behavioral disruptions in young children.

CHAPTER III

METHODS

The purpose of this study was to explore the effects of brain breaks on behavioral disruptions in second grade students.

Design

This study used a quasi-experimental design to compare the effects of brain breaks on behavioral disruptions. The independent variable was the type of brain break conducted. This included Go Noodle, yoga, and kinesthetic movements throughout curriculum instruction. The dependent variable was the number of behavioral disruptions. The type of disruptions identified were calling out, arguing with others, throwing things, and yelling. Limitations of the study include a small participant group and the length of intervention.

Subjects

Research was conducted at a targeted Title I suburban elementary school in Anne Arundel County, Maryland. There are approximately 450 students attending the school from Pre-Kindergarten to Fifth grade. Around 64% of students are eligible for free or reduced lunch. The students at the school were of mixed races such as Hispanic, African American, and Caucasian.

There were ten students involved in this study between the ages of seven and eight. The sample was chosen based on observations of behavioral disruptions over the past couple of months. The selected population included six males and four females. Among those students, nine out of ten are considered FARMS as seen through Performance Matters— an Anne Arundel County program used to contain student information. Two of the ten were English Language Learners and none received special education services. Four of the participants were Caucasian, three were African American, two were Hispanic, and one was mixed race.

Instruments

The instrument used for this study was self-developed. Misbehavior was measured through observation of the individual participants. The behaviors observed were calling out, arguing with others, throwing things, and yelling. Using the instrument, the behaviors were tallied as they were seen after a brain break was given. The type of brain break was also identified. Using this instrument, data was able to be analyzed to determine how effective brain breaks were on behavioral disruptions.

Procedure

Ten students were observed from the researcher's second grade class. All students were given a brain break in between subject areas. Often this was around 2:00 p.m., right after cultural arts. The brain breaks included Go Noodle, kinesthetic movements to go along with topics in the curriculum, yoga, and meditation. Go Noodle offers a range of activities, such as guided dancing and stationary workouts. The students follow along with the video on the SmartBoard using the website www.GoNoodle.com. The kinesthetic movements included stationary arm and leg motions. Yoga and meditation were conducted with students spread out around the room, allowing for individual space to conduct the movements. The researcher required a silent room during these times. Data on behavioral disruptions were recorded during the next subject area, Interactive Read Aloud. This activity is completed with all students sitting in their assigned spots on the carpet. The teacher reads an on-grade level text and provides opportunities for discussion. The researcher recorded behavioral disruptions for the subjects as they were observed. The observations were recorded using tally marks and a new chart was used each day.

CHAPTER IV

RESULTS

The purpose of this study was to examine the effects of three types of brain breaks on behavioral disruptions in second grade students.

The average number of calling out behavioral disruptions for each of the three types of brain breaks (Go Noodle, Kinesthetic, and Yoga-Meditation) for second grade students were analyzed using a t test for paired subjects. The results are presented in Table 1 below.

Table 1

Behavioral Disruptions for Three Types of Brain Breaks

Brain Breaks	Average	N	Standard Deviation	t	Significance Using Median Test
Go Noodle	1.8	10	2.0	0.64	0.54
Kinesthetic	2.0	10	1.8		
Go Noodle	1.8	10	2.0	1.35	0.21
Yoga-Meditation	2.2	10	2.3		
Kinesthetic	2.0	10	1.8	0.60	0.56
Yoga-Meditation	2.2	10	2.3		

The hypothesis that there would be no difference in the effects of Go Noodle, Kinesthetic, and Yoga/Meditation brain breaks on behavioral disruption is supported.

CHAPTER V

DISCUSSION

The purpose of this study was to examine the effects of three types of brain breaks on behavioral disruptions in second grade students.

Description of Results

There were ten subjects included in this study, all in the same second grade class. Their behaviors were observed after being given a brain break. These brain breaks included Go Noodle, kinesthetic, and yoga-meditation. The behaviors being observed were calling out, arguing with others, throwing things, and yelling. Average calling out behavioral disruptions for each of the brain breaks were compared, but the difference among them were not statistically significant. Three other type of disruptions occurred in much smaller amounts than calling out. There was not enough evidence for analysis.

Implications

The use of brain breaks is important to get students up and moving throughout the day. It gets their mind flowing and the wiggles out of their system to engage in instruction. The results from the study show there was no significant improvement in behavioral disruptions, specifically the disruption of calling out. The study conducted happened over a brief period of time, not allowing for accurate amounts of data to be analyzed.

Collecting data on behavioral disruptions before and after the brain breaks were given would have provided more accurate data. The researcher would be able to see what impact the brain breaks had on the child's behavior. With only collecting data on the disruptions after the brain break was given, there is no way to tell the impact it had on the child's behavior.

Threats to Validity

There were several threats to validity in this study. First, the data was taken over a short amount of time. It did not allow for enough data to be statistically accurate. Next, since the time was short and there was only a sample size of 10 students, there was less data on days that a few students were absent. Another threat to validity was the data on behavioral disruptions from before and after the brain break were not collected. This data would have been used to see if there was a bigger difference when the brain break was conducted or not.

One other threat to validity was the students' reaction to the type of brain break. Some students had difficulty transitioning from a Go Noodle involving guided dancing to listening to an interactive read aloud from the teacher. Others did not take yoga-meditation seriously, resulting in behavioral disruptions thereafter. The student's interest in the brain break decided his or her behavior afterwards.

Connections to Literature

According to Chiang and Griego (2017), physical exercise can lead to observable changes in brain structure and function. This not only benefits the body, but also the mind. Students are more likely to be more focused and engaged when given breaks to perform physical movements. The research conducted does not agree with Chiang and Griego. The students in the study often called out and were often less engaged in the lesson. There was not enough evidence to support the frequencies of yelling, throwing things, and arguing with others to compare the data to.

Another type of brain break used in the study was kinesthetic movements. In a study conducted by Camahalan and Ipock (2015), their results suggested all these activities were associated with decreased off task behaviors and increased learning of academic content. Again,

the study did not show a significant decrease for off task behaviors or demonstrate an increase in learning of academic content.

The action research study conducted did agree with one study from the literature. Using yoga in the classroom has proven to have positive results such as, “fewer fights and arguments among students; better student decision making; increased self-awareness and self-esteem; improved concentration and retention; and more efficient use of class time” (Arbeau, 2016, p. 35). The data showed there were limited arguments between students after a brain break was given.

Implications for Future Research

The results of this study did not show a statistically significant difference in the effects of brain breaks on behavioral disruptions. Conducting research with a greater sample size would reveal different results. Having a control group may also show different results. For example, one group would be given the brain break and behavioral disruptions would then be recorded. The other group would not receive brain breaks, but behavioral disruptions would still be observed. This data would show if brain breaks truly influence behavioral disruptions.

Another implication would be to take data on the subjects before and after the independent variable is introduced. This data would allow researchers to see if there is a significant difference between the use of a brain break and behavioral disruptions.

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