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Kinesthetic Movement Activities and Boys' Engagement and Behavior in Literacy

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Abstract

The purpose of this paper is to share the results of an action research project that studies the effects kinesthetic literacy activities have on boys' engagement and behavior in the classroom. The study was done using one kindergarten classroom that measured boys' engagement and behavior doing a non-kinesthetic literacy activity versus a kinesthetic literacy activity. The boys were also compared to the girls level of engagement and behavior in both cases. The following paper will share the results of the study that looked at kinesthetic literacy activities to improve boys' engagement and behavior.

Kinesthetic Movement Activities and Boys' Engagement and Behavior in Literacy

Gender differences begin in the fetal stage of development, when the sex hormones begin to influence brain development, which continues to develop throughout childhood. "These gender differences in brain maturation produces different overall development, such as the fact that infant girls tend to talk earlier than boys, and their language development continues to be more advanced than boys throughout early childhood" (Wardle, n.d., para.7). This evidence shows that boys and girls learn and think differently and should be taken into account when planning instruction in the classroom.

Boys and girls learn differently, but realizing just how differently they learn takes observation and experience. The teacher in this action research has been in the kindergarten classroom setting for six years. In those six years, many things have been learned and observed. Something that stands out the most; however, is the way boys work and learn. The teacher has observed that they are not highly motivated by paper/pencil work, nor do they readily pick up a book to look through it and read the pictures or words. The teacher has also noticed that the boys have a hard time sitting still for any period and have more behavior problems during academic work time than do the girls. Last year the teacher's kindergarten classroom had a ratio of two boys to one girl. The teacher had 15 boys in the room and the classroom dynamic was high energy, hands on, and loud. There were increasingly more behavior problems in this classroom as well as low academic ability among the boys. The majority of the boys had little motivation to sit and do their work, let alone do it nicely and with effort. There was a wide gap between the boy learners and the girl learners behaviorally, emotionally, socially, and academically.

All of these things led the teacher to want to research how they could best provide the boys in the classroom what they need to not only be successful academically, but to also decrease negative behaviors and attitudes towards school. An article published by Early Childhood News shared an important solution for teachers to make sure boys have equal opportunities to succeed in early childhood programs: "train all staff on the unique needs of boys and provide techniques, methods, and approaches to meet these needs" (Wardle, n.d., para 29). The goal in this action research is to change the teachers teaching methods and approaches to better reach the boys in the classroom.

This action research study will be effective to the teacher because it will give some answers on boys behavior and what type of learning environment best suits them to be successful. It will also stretch the teacher to research and implement more activities and lessons that reach multiple intelligences, which focus on kinesthetic movement. The driving question behind this research project is: Do kinesthetic movement literacy activities increase boys engagement and behavior?

Literature Review

The benefits of movement in the classroom for children, especially young children, is not a new concept. However, with the increasing academic demands expected of children, more time in the classroom is devoted to reading, writing, and math with little time given for recess, free play, and exploration. Because of this, the need for movement in the classroom is of high importance. Jensen (2000) protests against the sedentary classroom style and suggests that the brain learns best and retains most when the organism is actively involved in physical activity. Vagovic (2008) advocates for physical movement in the classroom: "Using kinesthetic movement in the classroom engages the cerebellum, the part of the brain that affects movement

and timing. Engaging the brain through movement is central to learning" (p.26). Vagovic goes on to say the type of movement children are doing must be activities that engage the brain and stimulate learning and development. To do this, the movement activities must be "novel, challenging, nonthreatening, and emotionally stimulating. Research shows that when activities engage children in novel ways, young learners can better express ideas and focus their energy" (Vagovic, 2008, p. 26). This type of kinesthetic learning is important for all young learners, but especially boy learners.

Johnson and Gooliaff (2013) report that current classroom practices disadvantage boys and contribute to the issues many boys face throughout school, such as misbehavior, higher school dropout rates, lower abilities in literacy and anti-social behavior. "When boys enter the classroom, they are expected to behave in ways that are not natural for them. They are supposed to use fine motor skills while staying quiet and sitting still, but developmentally they are not ready for it" (Johnson, et. al, 2013, p. 28). Boys natural learning behaviors become less acceptable in school settings and boys lose their excitement for learning and motivation for school because of it (Johnson, et. al, 2013).

Instead of squandering the way, boys work and learn, schools need to capitalize on boys' energy and imagination. They should "be encouraged to use manipulatives, build things, and be active in the classroom" (Johnson, et. al, 2013, p. 29). Hawley and Reichert (2010) analyzed teachers lessons in the classroom and concluded that boys found success when the lessons produced products, were structured as games, required vigorous motor activity, and required a combination of teamwork and competition. Hawley and Reichert (2010) also found that boys who feel connected to their teacher do so because the teacher demonstrates a sense of humor,

passion, fairness, and personal care toward them. Recognizing the unique way boys learn is crucial to their success in school.

Wardle (n.d) explains the difference in how boys and girls act and learn. "Gender differences are biological and not just cultural: the biological foundation for gender differences includes hormonal influences on the brain. These gender differences in brain maturation produces different overall development, such as the fact that infant girls tend to talk earlier than boys, and their language development continues to be more advanced than boys throughout early childhood" (Wardle, n.d., p. 2). Because of this, boys needs compared to girls looks very different. Wardle outlines four key characteristics of boy learners: physical activity, space, kinesthetic learning, and hands-on-learning. Boys tend to be more physical than girls and therefore need more physical activity and rough and tumble play. This need is neurological and is in part because the brains of boys develop slower than those of girls. Boys have less serotonin and oxytocin, the primary human bonding chemical, in their brain which make it more likely for them to be physically impulsive (Gurian, et. al, 2004). The need for space can be seen when boys choose to work or play on the floor as well as go as far as possible on the playground or on field trips. Offering a variety of seating options for boys—some desks, some tables, an easy chair, and a rug area for sitting or lying on the floor, give boys the physical space they need to learn (Gurian, et. al, 2004). Kinesthetic learning is learning through movement, according to Howard Gardner's theory of multiple intelligences. Boys seem to thrive using kinesthetic learning for multiple reasons. "It fits well with their use of space, need for physical activity, and their aggressive behaviors" (Wardle, n.d., p.2). A classroom that allows for more movement and noise can help boys stay focused. The last characteristic representing boys learning is hands-on-learning. According to Wardle, all pre operational children (before about age seven) need many

hands-on-learning, specifically boys. Because of boys' abilities in math and mechanical skills, and their limitations in memory and language, they need many opportunities for hands-on learning, as opposed to verbal instruction, literacy activities, and rote learning. Susan Griss (2013), a specialist in kinesthetic teaching, uses techniques in her classroom that release students from a passive learning posture that has students sitting in their seats with decreased oxygen in their brains to physically engaged learning where students are out of their seats and physically experiencing the curriculum. A teacher who used this style of teaching in his classroom described two boys' in his classroom who never raised their hands in class. As the teacher transformed his teaching into more energetic and physical learning, the boys' "smile, stay glued to the story, and interpret the character's feelings and actions with grace and creativity. They even volunteer to verbally respond to questions about the story" (Griss, 2013, para. 4). Teaching to the needs of kinesthetic learners offers a chance for children to succeed who may not be able to sit still and listen or are seen as being disruptive (Griss, 2013).

Methods

Data Collection

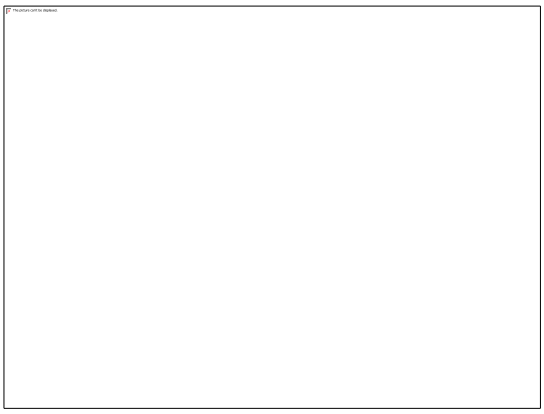
This action research project was conducted in a general education kindergarten classroom. The kindergarten classroom has 20 students, 11 males, 9 females. The demographics of the classroom are predominately white. Of the 20 students, three receive help for special education services. One male student receives help for academics and behavior, one male student receives help for behavior, and one male student receives help for speech. All three students are present during the general education literacy instruction time, which is when the action research took place.

The focus of the action research project was to determine how boy students' motivation for learning literacy and behavior was impacted by the use of kinesthetic movement during literacy activities in the classroom. Two data collection methods were employed to help answer the driving question of how kinesthetic movement affects boy students' motivation for learning literacy and their behavior. For the purpose of the study, the same eight students were observed throughout the action research project. Of the eight students, four were girls and four were boys. The first method data was collected through was both qualitative and quantitative, or a mixed-method. All students were given a task during independent literacy work time. The task was either a non-kinesthetic activity or a kinesthetic activity. For the quantitative data collection, eight students were observed on the number of times they were off task during the activity, the number of times they were redirected during the activity, and the duration of the activity to try to show their level of engagement. For the qualitative data, observational comments were recorded. This process was completed six different times over the course of six weeks. Three non-kinesthetic activities were observed and three kinesthetic activities were observed.

Week One

In week one, students' literacy task was a non-kinesthetic activity. They were asked to complete a worksheet that made them read and identify words as real or silly. They cut out the words, sorted them, and glued them on the paper. Students completed the activity at their seat.

Figure 1: Non Kinesthetic CVC Activity



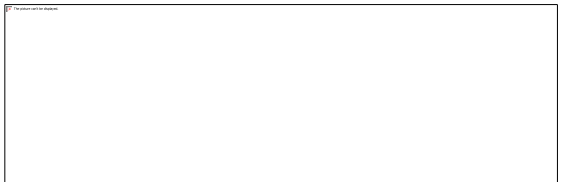
Week Two

In week two, students' literacy task was a kinesthetic activity. Students played hopscotch by placing a bear with a real or silly word on it onto the hopscotch. They then had to read the word to be able to pick it up when they were playing hopscotch. The winner was the person who got to all of the hopscotch spots and collected all their words read correctly. Students took turns going one at a time, so they had to wait and watch while it was not their turn. Students completed the activity in an open area of the classroom.

Week Three

In week three, students' literacy task was a non-kinesthetic activity. Students completed a worksheet that focused on word families. Students had to color a picture certain colors according to the word written inside part of the picture. Students completed the activity at their seat.

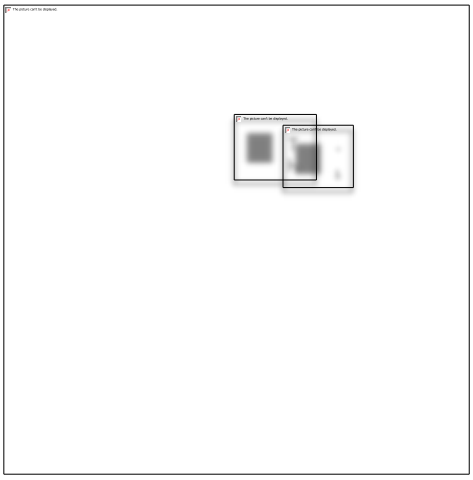
Figure 3: Non-Kinesthetic Word Family Activity



Week Four

In week four, students' literacy task was a kinesthetic activity. Students played a word family game with a partner. To play, students picked a piece of paper out of the snow pile. They read the word and determined what word family it belonged to. Next, they crumpled the paper up like a snowball and tried to toss it into the correct word family cup. If they made it, they have to keep the snowball. The person with the most snowballs at the end was the winner.

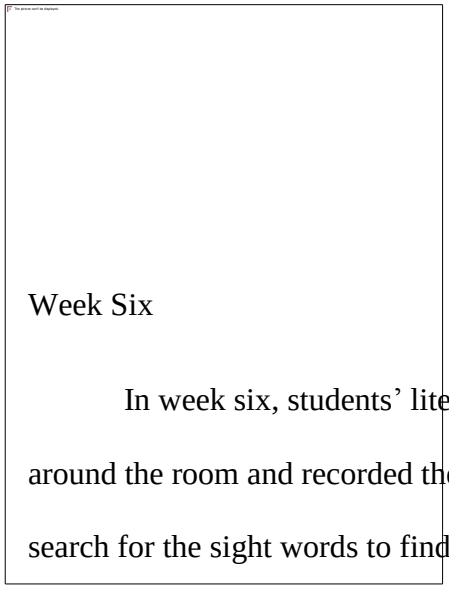
Figure 4: Kinesthetic Word Family Activity



Week Five

In week five, students' literacy task was a non-kinesthetic activity. Students completed a sight word worksheet at their seat. Students had to read the sight word and color word and color those words correctly in the picture.

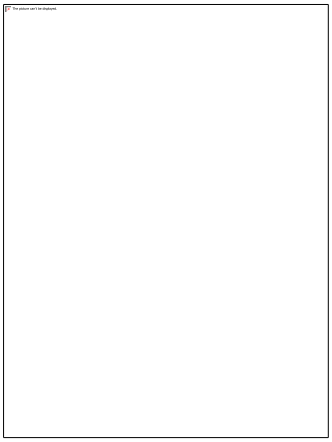
Figure 5: Non-Kinesthetic Sight Word Activity



Week Six

In week six, students' literacy task was a kinesthetic activity. Students read sight words around the room and recorded them on a recording sheet. They had to walk around the room and search for the sight words to find them. The activity was completed around the classroom.

Figure 6: Kinesthetic Sight Word Activity



A survey was given to the participating students to determine which activity they liked better, non-kinesthetic or kinesthetic. The teacher gave the survey to the students. The teacher read the question and recorded the student's answers. The survey gave insight into students' thoughts about literacy and how they learn best. Using both qualitative and quantitative data was the most valuable because the quantitative data showed the difference in engagement numerically while the qualitative observations showed students' preference.

The data collection process took place over a two-month period from January through February 2017. Throughout the data collection period, other observational data collected included observing students' actions and behaviors during the literacy activities, their demeanor, and their behavior. Brief questions were asked to the students at the end of literacy like, "Did you like playing that game? What did you like about it?" and "Did you like doing that worksheet? Why or why not?" These informal questions gave insight into student's thoughts and beliefs about the two types of activities, kinesthetic and non-kinesthetic.

Findings

Data Analysis

The data was collected by the schools teacher leader. The teacher leader observed and recorded when students were off task. The teacher leader's idea of "off task" behavior is subject to bias and could be different than another person's idea of: off task" behavior. The data collection was consistent in that the teacher leader was the only one collecting the quantitative data.

Quantitative Data

Table 1: Male Data

Male **Student**	**Kinesthetic Movement: # of times off task**	**Non Kinesthetic Movement: # of times off task**	**Difference**	Percentage **Decrease**
Student A	6	7	1	14%
Student B	2	7	5	71%
Student C	2	6	4	67%
Student D	0	4	4	100%
Total	10	24	14	58%

The data in the chart is the number of times the male student was off task during a kinesthetic or non-kinesthetic movement activity. The student was observed during three different

kinesthetic movement activities and three non-kinesthetic movement activities. The data from the male students shows that they were more off task during non-kinesthetic activities than kinesthetic activities. Giving the students a task where they had to move decreased their off task behavior by 58%.

Table 2 Female Data

Female **Student**	**Kinesthetic Movement: # of times off task**	**Non Kinesthetic Movement: # of times off task**	**Difference**	Percentage **Decrease**
Student E	0	5	5	100%
Student F	2	5	3	60%

Female **Student**	**Kinesthetic Movement: # of times off task**	**Non Kinesthetic Movement: # of times off task**	**Difference**	Percentage **Decrease**
Student G	1	3	2	67%
Student H	0	0	0	0%
Total	3	13	10	77%

The data in the chart is the number of times the female student was off task during a kinesthetic or non-kinesthetic movement activity. The student was observed during three different kinesthetic movement activities and three non-kinesthetic movement activities. The data from the female students shows that they were more off task during non-kinesthetic activities than kinesthetic activities. Giving the students a task where they had to move decreased their off task behavior by 77%.

When comparing the two tables, male and female, it can be concluded that males have a higher rate of off task behavior than females in both kinesthetic and non-kinesthetic movement activities. The findings show that both boys and girls benefitted from kinesthetic movement activities and showed less off task behavior than if they were doing a non-kinesthetic activity. The findings also show that boys are off task more times than girls.

Qualitative Data

When given the survey of which activity the students enjoyed completing more, the kinesthetic or non-kinesthetic, all eight students answered that they enjoyed doing the kinesthetic

movement activity better than the non-kinesthetic activity. The quantitative data supports this claim as all students improved their off task behavior.

Conclusion

The findings gathered from the collected data suggest that kinesthetic movement activities do affect student learning. Using kinesthetic literacy activities does improve boys engagement and decreases the amount of time they are off task. Not only does the data show the improvement in boys learning, but in girls as well. Keeping all students moving and active in their learning provides a better experience for them academically and an improved learning environment with less off task and behavior issues.

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