

**The Relationship Between Recess and
the Behavior of 5th Grade Students**

by

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Table of Contents

List of Tables	i
Abstract	ii
I. Introduction	1
Statement of the Problem	1
Statement of Research Hypothesis	1
Operational Definitions	2
II. Literature Review	4
Purpose of Recess	4
Recess and Behavior	6
Recess and Achievement	8
Recess Losing its Place in Public Schools	9
III. Methods	12
Design	12
Participants	12
Instrument	12
Procedure	14
IV. Results	15
V. Discussion	16
References	20

List of Tables

1. Behavioral Categories in the School Wide Behavior Plan	2
2. Descriptive Statistics and Results of t-test for Average Number of Behavior Levels Assigned per Student Before and After Recess <u>t</u> -Test of grades in academic classes before and after physical education.	15

Abstract

The purpose of this study was to determine whether 5th grade students exhibit fewer inappropriate behaviors, as measured by the number of behavior levels they are assigned for inappropriate behaviors, before or after recess. According to the school behavior plan, levels are assigned based on behavioral infractions. Three 5th grade teachers recorded times when levels were given for each individual student (n=65) on the Weekly Behavior Logs. The average number of levels received per student in the 90 minutes before recess was compared to the average number of levels received per student in the 90 minutes after recess. Data was collected over a 10-day period. The difference in the average number of behavior levels assigned before recess (Mean = .52, SD = .90) and after recess (Mean = .29, SD = .70) was statistically significant [$t(64) = 2.07, p < .05$], with a greater number of levels assigned before recess. Results were affected by various factors including a shortened duration of the study and variability in indoor and outdoor recess due to inclement weather. In addition to a longer study, more research on the relationship between recess and behavior is needed to increase the validity of findings in this study.

CHAPTER I

INTRODUCTION

Overview

In today's society when most children spend a majority of their time watching TV, playing video games, and using computers, recess in elementary schools has become a hot topic of discussion throughout not just the United States but around the world. The reality is that children aged 8 to 10 spend an average of six hours a day glued to a television or computer screen, and according to Chmelynski (2006), the Centers for Disease Control and Prevention reports "nearly 23% of children get no free-time physical activity at all"(p.10). Children gain a multitude of benefits from participation in unstructured free-time physical activity, which is exactly what recess aims to provide. The research was conducted to explore the effects that recess has on the classroom behavior of elementary school children.

Statement of Problem

The purpose of this study is to determine whether elementary school students exhibit fewer inappropriate behaviors, as measured by the number of behavior levels they are assigned for inappropriate behaviors, before or after recess.

Hypothesis

The null hypothesis is that there will be no significant difference in the average number of behavior levels assigned before and after recess among 5th graders serving as their own controls.

Operational Definitions

Outdoor recess is defined as a 20-minute free-time physical activity. Outdoor recess choices consist of playground, tag, hopscotch, jump rope, kickball, and 3 fly, for example. In addition, some students choose to simply talk or socialize with friends.

Indoor recess is defined as a 20-minute free-time activity. Students must choose an activity from a list of possibilities. Indoor recess choices consist of board games (Sorry, checkers, etc.), computer time, or free reading time.

The number of *levels* given to each student was collected for this study. *Levels* are received by a student for demonstrating inappropriate behaviors, or infractions. There are five categories of infractions in the Code of Conduct, which are described in the school wide behavior plan (Table 1): Following Directions, Showing Respect, Exhibiting Self-Control, Resolving Conflicts Peacefully, and Completing Assignments.

Table 1: Behavioral Categories in the School Wide Behavior Plan

Code of Conduct Infractions
A – Complete Assignments
C – Resolve Conflicts Peacefully
D – Follow Directions
R – Show Respect
S – Exhibit Self-Control

Complete Assignments was omitted from the data collection because it was not related to classroom behavior. Receiving a level for not completing assignments could be either for class work or for homework and is unrelated to the behaviors observed in this study. An infraction involving Resolve Conflicts Peacefully relates to students getting into a verbal or physical altercation with another student. Breaking the Follow Directions code could entail passively disobeying a direction or verbally refusing to complete a

teacher directed task. Failing to Show Respect deals with a student disrespecting an adult or fellow student. The Exhibiting Self-Control code involves an expectation placed on students to refrain from yelling in quiet situations (such as during classroom instruction), running when walking is expected (such as running in the school hallways), or using equipment in inappropriate ways (such as throwing a ball at a classmate). These levels can sometimes intertwine and one teacher may consider an inappropriate behavior to be not following directions while another feels it demonstrates a lack of self-control.

CHAPTER II

REVIEW OF THE LITERATURE

This literature review explores recess in elementary schools and how it relates to classroom behavior and academic achievement. Section one describes the purpose of recess in elementary schools. In particular, section one discusses the effects of recess on children's social development and the importance of providing physically active break times for students. Section two examines the relationship between recess and the behavior of a typical elementary school student. Section three looks at academic achievement and the cognitive effects recess can have on elementary school students. Section four explores the multitude of reasons why recess is losing its place in public elementary schools today. Specifically, two reasons are highlighted: the demand for higher test scores year after year and lawsuits directed at schools for incidents occurring on the playground.

Purpose of Recess

Recess is a valuable contributor to social development and may be one of the few times during the school day when children can interact with peers on their own terms while learning and practicing social skills. According to Audrey Skrupskelis, President of the American Association of the Child's Right to Play (cited in Schachter, 2005), "Recess gives children the opportunity to take control of their lives" (p.37). During recess, children are learning life skills, conflict resolution, ways to deal with bullies, and cooperative play. A recent study in Minneapolis found that playground games in the beginning of the school year help initiate new social contacts among students (Pelligrini & Blatchford, 2002). Through case studies, this research showed that playground games

serve to reinforce existing social groups and friendships later in the year. During the elementary school years, recess is that rare time when children can develop peer relations and social skills. According to Pelligrini and Blatchford, successful peer relations in school and academic success directly support each other.

Unstructured break times during the school day have important implications relating to time on task, achievement, and behavior in the learning environment. In Lincoln, Nebraska, all of the elementary schools provide a combined lunch/recess break with an additional optional 20-minute recess during the day (Schachter, 2005). Like people in many other areas in the United States, Lincoln's residents are worried about test scores and the time their children have to learn a very intense curriculum. However, alongside these concerns school personnel also feel the necessity to hold on to recess time as a necessary break from instruction. Ann Jablonski (cited in Schachter), an elementary school principal in Lincoln, states, "Kids actually need a break. Adults get breaks at their jobs, and our day is so packed with curriculum. Sometimes I'm just appalled that we don't speak up more often and say, 'No! Enough's enough.' The kids are missing a part of their childhood. And what's wrong with play? When we say 'play,' it's as if they are wasting time" (p.37). Both free play and guided play are linked to social and academic development. Research suggests that elementary-aged children who enjoy free play during recess are more attentive upon their return to the classroom (Pelligrini & Holmes, 2006).

With increasing accountability and high stakes test scores in schools, children are becoming overweight at an alarming rate. According to the U.S. National Health and Nutrition Examination Survey, obesity rates for U.S. children have risen sharply in a

single generation, with rates doubling for preschoolers and quadrupling for school-age children (Winter, 2009). For many children, recess time may be the only opportunity throughout the entire day to be physically active. The results of an elementary school study aimed at physical activity suggest that school recess time serves as an important setting in which to promote moderate-to-vigorous physical activity as well as contribute to the daily physical activity in young children (Mota, Silva, Santos, Ribeiro, Oliveira, & Duarte, 2005).

The loss of recess time has become more and more common in school districts across the nation. One misconception with recess is the assumed likeness to Physical Education classes. Physical Education and recess are not the same and both are influential to a child's development (Pelligrini & Holmes, 2006). Physical Education provides structured activity time when children can play and learn appropriate ways to be physically active and healthy for life. Recess is unstructured playtime during which children can develop social skills and peer relations. Both Physical Education and recess have shown to be influential in educating the whole child.

Recess and Behavior

Children in elementary schools are receiving more and more uninterrupted instruction due to the demands of high stakes testing. This is coming at a time in child development when breaks from instruction are most needed. Research has shown how recess breaks can affect the attentiveness of school-age-children. A study in a southern urban school district found children in fourth grade classes were more fidgety and less on task when they did not have a recess break (Jarrett, Maxwell, Dickerson, Hoge, Davies, & Yetley, 1998). The children in this study benefited from recess even when they were

provided with opportunities to move around the classroom at some point during instruction. The effect of recess enabling children to be more on task and less fidgety supports the view that most children are renewed by a break rather than disrupted by it. Looking at recess as a disruption is a major reason why many districts are moving away from recess altogether (Ibid).

Further review of the relationship between recess and behavior has strengthened the view that the two directly affect one another. A study examining the effects of recess using single case designs showed 60% of the children benefitting from recess (Ridgeway, Northup, Pelligrini, LaRue, & Hightsoe, 2003). On-task behavior increased, while fidgeting and listlessness decreased. On-task behavior increased on days when recess occurred and decreased when recess did not. Fidgeting and listlessness decreased in the same instances. These behaviors improved even further when recess was provided for consecutive days.

ADHD is a growing concern in schools today, with increasing diagnoses and administration of medications. Recess has shown to decrease disruptive behaviors in the classroom for students with and without ADHD. The single case designs discussed above showed a decrease in fidgeting and listlessness for three students diagnosed with ADHD on days when they received recess as a break from instruction (Ridgeway et al., 2003). When students with ADHD were not given medication and had recess time as a break from instruction, disruptive behaviors decreased (Ridgeway, 2005). However, the behaviors decreased even further when the same students were provided with both medication and recess. In the case of students with ADHD, recess has an effect on behavior but is most effective when used in conjunction with prescribed medication.

There is some question about whether or not the increased number of students with ADHD is due in part to less activity times in schools such as recess and physical education, but research has not validated these claims.

Recess and Achievement

It is quite well established that adults and children learn better and more quickly when their efforts on a task are more distributed rather than concentrated. This means taking frequent breaks during instruction should yield stronger understanding and retention of the material being taught. Conversely, longer periods of instruction without a break will hinder cognitive ability. Empirical studies suggest that recess be considered as not just playtime, but also as an academic aid in fostering the attention skills of young children (Pelligrini & Bohn, 2005). Providing children with opportunities to have a non-structured break time allows for a much-needed break from the demanding cognitive tasks of an elementary school classroom. Young children respond well to non-structured breaks, whereas older learners benefit from simply changing tasks (Pelligrini & Blatchford, 2002). The cognitive immaturity of an elementary aged child is said to have an affect on his/her ability to concentrate for longer periods of time (Pelligrini & Bohn), an idea that offers further support for an unstructured, free choice break time.

. When reading and math scores from the Stanford Achievement Test were compared to fitness scores for third and fifth grade children, a positive relationship was found (Castelli, Hillman, Buck, & Erwin, 2007). These researchers determined that higher levels of fitness are associated with higher levels of academic achievement. Specifically, aerobic capacity shows a relationship with higher levels of academic achievement. No association was determined between achievement and BMI (body mass

index). Based on the results of Castelli et al., general support can be provided for the notion that children who are physically fit are more likely to perform better on standardized academic achievement tests.

Recess timing can have important implications on the effects of cognitive performance in children. A recent study examined preschool children and the effects of recess on attention to a classroom task (Holmes, Pelligrini, & Schmidt, 2006). Holmes et al.'s findings show attention to a task is greater after an unstructured recess break than before a break, findings that both replicate and extend the research on the role of recess in children's cognitive performance (Castelli et al., 2007).

Recess Losing its Place in Public Schools

Recess is essential to the development of elementary aged children in many ways. As an outlet for physical activity, social interactions, peer relations, and unstructured break time, recess serves a number of purposes. However, according to the American Association for the Child's Right to Play (Chmelynski, 2006), "Nearly 40% of the nation's 16,000 school districts have either modified, deleted, or are considering deleting recess" (p.11). Play, which occurs during recess in elementary schools, is important to the social, emotional, cognitive, and physical development of children according to Chmelynski. Now under pressure for higher test scores on standardized tests, school administrators have cut recess (Schachter, 2005). Recess is being removed from entire school districts in many cases to increase instructional time out of fear of schools and students not meeting No Child Left Behind standards.

Another issue contributing to the decline and potential demise of recess is the fear of litigation and lawsuits for liability relating to injuries that can occur on the playground.

Litigation and lawsuits have led many school districts to cut recess or implement structured activities (Chmelynski, 2006). Many administrators cutting recess have attempted to use Physical Education as a substitute for recess time, using the excuse of more structured play to control and make active environments safer.

About recess, Pelligrini (as cited in Chmelynski, 2006), a professor of educational Psychology at the University of Minnesota says, “Rough-and-tumble play is how kids learn social skills, how they learn to inhibit aggression, and to recognize aggressive facial cues. It doesn't come naturally” (p.12). Given this, what does the future look like for today’s children who haven’t learned through unstructured play how to inhibit their aggression? In addition to learning how to manage aggression, children also learn how to deal with bullying during open social times such as recess (Ibid). As recess is being cut in schools across the country, children are not having the chance to deal with these situations and are thus not provided with critical social learning opportunities.

Summary

Recess has significant implications for the emotional, social, cognitive, and physical development of a child. Providing physical activity, social learning opportunities, and instructional break times helps to educate the whole child. Inappropriate classroom behaviors are decreased by having unstructured breaks within the scope of an instructional day (Pelligrini & Holmes, 2006). Those breaks provide increased time on task and can be associated with improved academic achievement. Removing or decreasing the amount of recess in elementary schools deprives children of necessary social, behavioral, and cognitive skills for optimal performance. Declares Hara Estroff Marano, editor-at-large of Psychology (as cited in Chmelynski, 2006), “We

trivialize kids' play. It gets in the way of other things that we want to do on our way to achievement" (p.12). Recess and physical activity do not and should not 'get in the way' of academic achievement; rather these dimensions of learning should complement and support one another.

CHAPTER III

METHODS

Design

This study used a quasi-experimental design with a convenience sample to determine whether there is a difference in the frequency of inappropriate classroom behaviors of elementary students before or after recess. Students served as their own controls. The independent variable was time of day, either before or after recess. The dependent variable was the average number of levels assigned to each student.

Participants

Participants in the study consisted of sixty-five 5th grade students from three 5th grade classes at a suburban elementary school. There are a total of five 5th grade classes at the school, but two of the 5th grade teachers opted out of collecting data for the purposes of this study. Of the participants, 6 were Caucasian and 59 were minority students. There were 33 female and 32 male subjects. The student population at the school comes predominantly from middle- to lower-middle class households. Students did not know that they were participating in a study. Teachers, however, were aware of the purpose of the study.

Instruments

Weekly behavior logs developed by a school committee comprised of teachers and administrators were used as a checklist to collect data for this study. There is no reliability or validity data for the logs. The logs track student levels. For purposes of this study, only four of the five categories (Complete Assignments was not included) in the Code of Conduct (See Chapter 1, Table 1) were used. Behavior logs travel with the

classes and are intended to hold students responsible for their actions regardless of where they are in the school building and what teacher they are with at any time throughout the school day.

Levels accumulate throughout the course of a day. Before a student is given a level, he/she has already received a verbal warning. Teachers record each level given on the behavior log next to the student's name. For example, if a student was disrespectful in the 90 minutes before recess, the teacher would initially give a verbal warning, which if not heeded, would lead to a level. If the student was later not following directions, a second level would be recorded. If this second level were the final level of the day for that student, a level 2 would be recorded in the data. Once a student has received his/her first verbal warning for any infraction in the code of conduct, levels will be recorded for any further infractions on that particular day. At the beginning of each day, all levels from the day before are reset allowing the students to start their day with a clean slate. During data collection, only two students reached level 3 in a day, one student reached level 2 in one day, and the rest of the levels assigned were one to a student on that particular day.

At the beginning of each school year, teachers are trained using the school wide behavior plan on how to implement the behavior logs. Definitions for the levels are provided and examples are given. Teachers new to the school receive a private, more in-depth training with the school wide plan, while returning teachers review the plan and any changes that have been made during staff development week.

Procedure

The study began on February 22, 2009, at which time 5th grade teachers of the three participating classes in the study began to record times when levels were given for each individual student on the weekly behavior logs. Levels given 90 minutes before recess and 90 minutes after recess were used in the data collection. Data was originally collected for 13 days, but the first three days were two-hour late arrival days due to weather conditions. Because late arrival days significantly change the dynamics of the school day and on most of those days the 5th grade classes did not have recess at all, the data for shortened days was omitted. As a result, data for 10 consecutive school days was used for purposes of this study.

During the time of data collection, one class had inside recess eight times and outside recess two times, the second class had inside recess nine times and no recess one time, and the third class had recess outside six times and inside recess four times. The class with one day of no recess had an in-classroom assembly with a speaker, which the teacher considered their recess time for the day. During the data collection period, two students were absent three days, four students were absent two times, and nine students were absent one time. Before recess, nine students were pulled for small group reading instruction by the reading specialist. After recess, nine students were pulled for small group math instruction by the math specialist. During this time, pulled students would still receive levels from their teachers under the same school wide behavior plan criteria. The number of levels earned per student over the course of the data collection before and after recess was compared using non-independent samples t-tests.

CHAPTER IV

RESULTS

This study aimed to determine whether elementary school students exhibit fewer inappropriate behaviors, as measured by the number of behavior levels they are assigned for inappropriate behaviors, before or after recess. Three 5th grade classes at an elementary school were chosen for the study. Over the course of ten school days, number levels given for inappropriate behaviors were recorded 90 minutes before and after recess. The null hypothesis that there will be no significant difference in the average number of behavior levels assigned before and after recess among 5th graders serving as their own controls was rejected.

A non-independent samples t-test was used to determine whether the number of behavior levels given before recess was significantly different from the behavior levels given after recess. Table 2 provides the mean and standard deviation of the mean number of behavior levels assigned per 5th grade student for inappropriate behaviors before and after recess. The students received a significantly higher average number of levels before recess (mean = .52, SD = .90) than after recess (mean = .29, SD = .70) [$t(64) = 2.07$, $p < .05$].

Table 2: Descriptive Statistics and Results of t-test for Average Number of Behavior Levels Assigned per Student Before and After Recess

Time of Day	Mean	N	Std. Deviation	t-test
before recess	.52	65	.90	2.07*
after recess	.29	65	.70	

*t-test was significant at $p < .05$

CHAPTER V

DISCUSSION

The researcher set out to determine whether there was a difference in 5th grade students' behavior before or after recess. The null hypothesis that there will be no significant difference in the average number of behavior levels before and after recess among 5th graders serving as their own controls was rejected. Data collected during this study showed significantly more behavior levels assigned for inappropriate behaviors before recess than after recess.

Implications of Results

These results suggest that elementary students benefit from a 20-minute recess time during the school day. Students may be more compliant after an unstructured break in the school day when they are given the opportunity to engage in recreational and social activities. Having this break time could decrease disruptions in the classroom for the teacher and subsequently increase time on task for students. Although students may miss instructional time due to recess, the better behavior after recess may make instructional time more productive. Consequently, it is important for administrators and teachers to protect recess time despite other academic scheduling demands.

Threats to Validity

While the researcher was able to conclude that there were significantly more inappropriate behaviors before recess, there are some threats to the validity of this study. Data collection was delayed and shortened by a significant snowstorm that closed schools for eight days. Teachers began collecting data on the first full day back to school after the storm. An unexpected break from school could have changed student behavior during

the research period. While many students may have been playing outside in the snow and being very active during this time, other students were likely glued to a television, watching movies and playing video games. In addition, the reduced time for data collection limited the amount of data that could be considered for analysis.

Another factor that could have affected student behavior during the data collection period was the upcoming state mandated, high stakes testing. After the long snow break, students returned to school with only two weeks left before testing was to begin. During this time, many students are pulled from their regular classroom, miss special areas classes (physical education, art, etc.), and/or receive double instruction in some subject areas for additional reading and math. These students struggle academically, and likely do not enjoy the first reading or math class they attend. Therefore, it is very possible that the extra time in these subjects affected student behavior in the classroom. Further, the teachers were under additional pressure since they had lost instructional time. This may have influenced their tolerance for classroom behaviors and their assignment of levels.

Spanning the ten-day period in which data was collected, students received more indoor recess than outdoor recess. The inconsistency in type of recess that the students participated in threatened the internal validity of this research. Students may have responded differently in the classroom after having indoor recess than they would have if recess had been outdoors. Indoor activities tend to be more sedentary than outdoor activities, which in turn may be less likely to yield a much needed energy release for some students during recess. In particular, this could have an acute effect on students diagnosed with Attention Deficit Hyperactivity Disorder. The high frequency of indoor

recess also reduces the generalizability of the results to typical recess, since most recess throughout the school year occurs outdoors.

Connections to Previous Research

Consistent with the findings of the current research that students showed significantly fewer inappropriate behaviors after recess than before recess, other studies have found recess to have significant positive effects on the classroom behavior of elementary students. For example, Jarrett et al. (1998) examined the effects of recess on the on-task behavior, fidgeting, and listlessness of 43 fourth grade students. Overall, 60% of the children in Jarrett et al.'s study benefited from recess, becoming significantly more on task or less fidgety.

In the Ridgeway et al. (2003) study, results obtained from 2nd grade students showed that the level of inappropriate behavior generally increased over time for all participants on days when there was no recess. This progressive increase of inappropriate behaviors over time did not occur on days when the students did have recess.

Implications for Future Research

Because this research yielded significant results, the researcher has determined that there exists the need for future research relating to recess and student behavior. Due to school closing for eight days, data was collected over a period of two weeks. Future research should be conducted over a longer period to give more validity to the significance found by the researcher in this study. Ideally, research into the relationship between recess and student behavior should be conducted over the course of several months, not two weeks.

For the purposes of this study, recess included both indoor and outdoor time. Future studies could compare the impact indoor recess has on student behavior relative to that of outdoor recess. While combining indoor and outdoor recess in this research did yield significant results, individually analyzing indoor and outdoor recess may show a significant difference in behavior as it relates to the type of recess. If comparing indoor and outdoor recess were not practical in future research, being consistent with either indoor or outdoor recess would improve the ability to generalize the results to a specific type of recess. Indoor and outdoor recess activities are very different in nature. Since outdoor recess is typically more physical than indoor recess, the impact of physical activity on student behavior would be more clearly indicated if a study were limited to outdoor recess. Limiting future studies to just one type of recess would eliminate the disparity in the types of activities students might choose.

Summary

The researcher found that 5th grade students exhibited fewer inappropriate behaviors after recess than before recess. Based on these findings, it can be concluded that recess may positively influence the classroom behavior of elementary students. Further research is recommended to determine the effects that recess may have on the behavior of students during instructional time and academic achievement.

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